ISQua 2023 Abstract Book

Short Orals and Lightning Talk

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ISQUA2023-ABS-1050

MULTIPLE STRATEGIES TO IMPROVE FIRE EMERGENCY RESPONSE CAPABILITY OF OUTPATIENT MEDICAL STAFF

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Introduction: Fire emergency management in hospital setting is of paramount importance and requires more attention to reduce the adverse consequences of the incident. We have approximately 6500 outpatient visits per day, and there were about of 141 nurses plus 300 doctors in the outpatient clinics. Thus, developing and practicing evacuation programs for fire is crucial to help medical staff achieve appropriate levels of preparedness and to ensure fire safety in hospital.

Methods:

1. Fire and emergency training program was held regularly to enhance knowledge of medical staff, these included an introduction to hospital disaster and risk, first response to fire, prevention and evacuation.
2. Fire safety simulation was designed in a way that medical staff had tabletop exercise and task assignment before the actual drilling.
3. By using a floor plan and gamification design, medical staff were drilled on the procedures and task assignment (including report, safety, fire extinguishing, rescue, evacuation) of fire emergency response.
4. Risk assessment and emergency action plans were made and updated annually in accordance with the risk levels of different outpatient clinics to be in line with the latest situation.

Results: The cognitive efficiency of fire emergency response, the accuracy to perform the right task during simulation exercise, as well as the audit for fire and evacuation equipment reached a score of 100%. We had an improvement of Google rating from 2 to 5 stars and the satisfaction survey continued to show positive feedback.

Conclusion: Crisis awareness should be always cultivated. The occurrence of hospital fire is fraught with uncertainty. No matter how well the fire drill and fire evacuation plan are carried out, it is crucial to follow the procedures outlined by the R.A.C.E acronym: “R” for rescue, remove; “A” for alarm; “C” for contain, confine and “E” for extinguish, evacuate. Flexible implementation of this response code can buy more time for evacuation and minimize casualties.

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ISQUA2023-ABS-1060

UTILIZING FAILURE MODES AND EFFECTS ANALYSIS TO PROMOTE MEDICAL QUALITY AND PATIENT SAFETY BY IMPROVING THE PLANNING PROCESS IN RADIOTHERAPY

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Introduction: Failure mode and effects analysis (FMEA) is a systematic analysis method applied to improve the workflow, which can be used to detect factors affecting safety and to quantify the risk. Failure modes (FMs) with RPN (risk priority number) scores > 100 were high risk defined in TG-275 report published by the American Association of Physicists in Medicine (AAPM). High RPNs indicate more critical defect in process. Therefore, we aimed to assess the treatment planning process and to identify high-risk failure modes through the FMEA to ensure the medical quality and the patient safety in radiotherapy by improving the planning compliance rate.

Methods: Retrospective analysis was applied to treatment plans in 2020-2022. A process map of the treatment planning including a major process tree and subprocess steps was generated based on the guidelines in TG-100 report published by the AAPM. Five major treatment planning process steps were (I) planning parameters, (II) plan quality, (III) image parameters, (IV) MOSAIQ management, and (V) chart documents. Errors detected during or after the pretreatment physics plan and chart review (PTPCR) were identified to failure modes (FMs) in each process step. A risk priority number (RPN=O×S×D) was assigned to each FM by the five physicists based on tabulated scoring system for the frequency of occurrence (O), the severity (S), and the detectability (D) of errors, each on a scale of 1 to 10. Based on the results of our FMEA, changes were made to the treatment planning workflow to reduce associated risk. The planning compliance rate (= (the number of plans without errors/the total number of plans) × 100%) was calculated to evaluate the quality of the treatment planning. Some Interventions given to improve the planning compliance rate were the couch-density replacement script, the plan/verification-image transmission script, beam-renaming script, the integrated radiation oncology information system (IROIS) and self-plan check. The threshold of the compliance rate is set to 90% to check if the interventions were effective. The PDCA (Plan-Do-Check-Act) method was used to review the improving process and to evaluate the strategies.

Results: Figure 1 shows the process map of the workflow of treatment planning at our department. Ten key high-risk failure modes with an RPN >100 were found from the FMEA results as shown in Figure 2 and Table 1, which were deal with some interventions. Figure 3 shows the improvement of planning compliance rates raised to 89.1% in 2021 and to 94.3% in 2022 after our interventions from 78.3% in 2020.

Image:

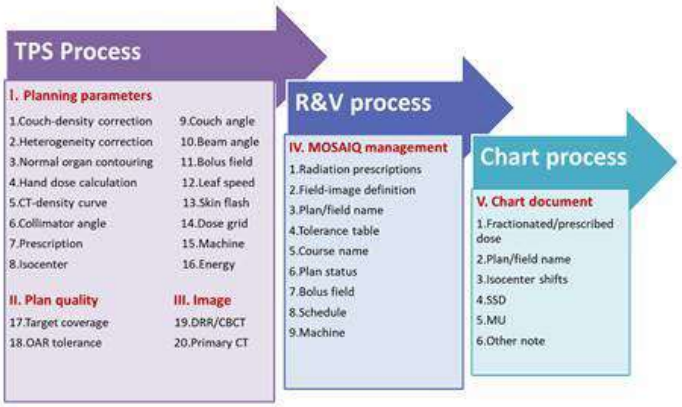

Figure 1. A process map of the treatment planning. TPS, treatment planning system; R&V, record and verify; CT, computed tomography; OAR, organ at risk; MU, monitor unit; DRR, digitally reconstructed radiograph; CBCT, cone-beam computed tomography; SSD, source-to-surface distance.

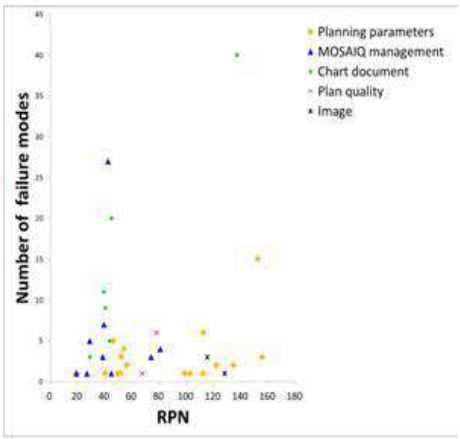

Figure 2. The RPN (risk priority number) scores of FMEA results for evaluating the treatment planning process.

Table 1. Results of FMs with an RPN >100.

Process step	Failure mode	O	S	D	RPN
Chart document	· Isocenter shifts	9.0	7.6	2.0	136.8
Image	· Primary image	4.0	10.0	3.2	128.0
	· DRR/CBCT image	6.0	2.4	8.0	115.2
Planning parameters	· Skin flash	6.0	7.2	3.6	155.5
	· Couch-density correction	8.0	6.8	2.8	152.3
	· Prescription	5.0	9.6	2.8	134.4
	· Bolus field	5.0	7.6	3.2	121.6
	· Heterogeneity correction	6.0	5.2	3.6	112.3
	· Hand dose calculation	4.0	10.0	2.8	112.0
	· CT-density curve	4.0	8.0	3.2	102.4

Abbreviations: FM = failure mode; O = occurrence; S = severity; D = detectability; RPN = risk priority number (S × O ×D)

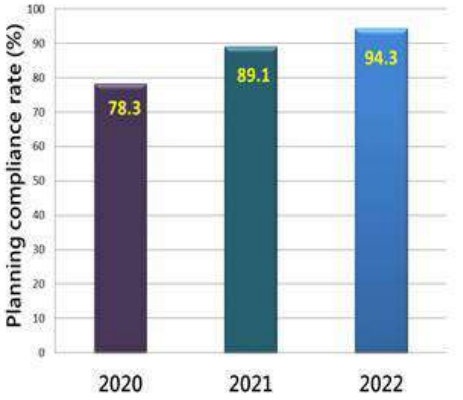

Figure 3. The results of the compliance rate before (2020) and after (2021-2022) our improving planning process.

Conclusion: The FMEA provided a useful method for evaluating high-risk failure modes in treatment planning process. On the basis of FMEA results and as a result of changes made to the planning steps, the planning compliance rate subsequently increased, showing that FMEA is an effective way and could help us to improve the quality of treatment planning and to ensure the patient safety in radiotherapy.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1070

THE FEASIBILITY AND EFFECTIVENESS OF HOME-BASED CARDIAC REHABILITATION IN THE COVID-19 ERA – A SINGLE CENTER EXPERIENCE

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Introduction: Cardiac rehabilitation (CR) utilizes patient education, health behavior modification, and exercise training to improve prognosis and symptoms in cardiac patients. Given the challenges of the ongoing COVID-19 pandemic and the associated extraordinary measures to prevent the spread of this disease, availability of outpatient CR services was affected. In such challenging situations, home-based CR with remote supervision might be a viable surrogate for the standard outpatient CR program.

Methods: Included were patients following a hospital admission due to ACS and low/moderate risk for future cardiovascular complications who were subsequently enrolled in home-based cardiac rehabilitation program in Meir Medical Center, from July 2021. Cardiologists and physical activity coaches who specialized in cardiac rehabilitation provided digital support. Exercise capacity, weight, body fat percentages, body muscle percentages visceral fat levels and LDL-c levels were measured at the baseline and following 3 months.

Results: The included 115 patients had a mean age of 58+3.2 and consisted of 20 women. 44.6% after STEMI and 55.4% NSTEMI. After 3 months, no cardiac adverse events were recorded [cardiac death, MI, hospital readmission]. Exercise capacity improved significantly after 3 months compared to baseline measures (8.1 METS vs 10.1 METS, $p<0.001$). Following 3 months of remote activity, patients showed a significant reduction in body weight (84.45 kg vs 82.8 kg $p=0.01$), body fat percentage (28.5% vs 25.96%, $P<0.001$) and visceral fat level (12 vs 11.1, $p<0.001$). There was a significant increase in body muscle percentage (31.8% vs 33.11%, $p<0.001$). LDL-c and Triglycerides levels were significantly reduced (61.9 mg/dl vs 58.4 mg/dl, $p=0.008$ and 111.7 mg/dl vs 87.3 mg/dl, $p<0.001$).

Conclusion: Home-based rehabilitation with dedicated remote system is safe and improves exercise capacity and metabolic profile among patients after ACS with low/moderate risk during social distance times as well as in regular times.

Disclosure of interest: None declared.

ISQUA2023-ABS-1118

INITIATING PROM MEASUREMENT IN ONCOLOGY HOSPITAL – HOW WE INITIATED

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Introduction: Patient reported outcome measures most commonly called PROMs are measurement tools used to collect information on aspects of patient's health status that are relevant to their quality of life, including symptoms, functionality, and physical, mental and social health. Many PROMs tools are available and are categorized as Generic (applied across different populations) & Condition-specific (used to assess outcomes that are specific or unique to particular diseases or sectors of care). Typically, generic and condition-specific tools are administered at the same time, as they provide complementary information [1]. There is a standard in Chapter 5 – Patient safety & Quality (PSQ) improvement of National Accreditation Board for Hospitals & Health care providers (NABH) 5th edition which states that the organization has a mechanism to capture patient reported outcome measures (PSQ 3e) [2]. Therefore in order to achieve the compliance to the standard requirement basic PROM was defined and data was collected.

Methods: A generic tool was formulated in the form of a questionnaire to ask patients about their health and feelings during treatment. The five points Likert Scale was used to capture patient responses. The feedback from patients who were undergoing treatment was taken. The questionnaire included question as how much patient was currently affected by pain or discomfort, any other physical symptoms, feeling low in mood or depressed, feeling anxious or stressed, are they enjoying their life and are able to do their normal activities. Also, how worried they are about their current state of health. The responses were captured through direct interview with patient/family waiting for their turn in the OPD. 60 responses were captured and analysed.

Results: The sample size included 15 patients undergoing chemotherapy, 25 had surgery done, 5 were taking Radiation therapy and 15 were on supportive care post treatment. As per the responses captured, 90% of the patients either had slight pain or no pain at all during treatment and 10% had extreme to moderate pain. 75% patients had slight to no physical symptoms and 25% had few symptoms. 67% of the patients were enjoying life as compared to 33% feeling stressed/anxiety. Other parameters indicated that 32% patients were feeling depressed during the treatment whereas 68% were optimistic and untroubled. 37% of patients had no stress, 28% were slightly stressed, 30% were moderate and 12% were extremely stressed of the treatment. 70% of the patients were very actively doing

activities of daily living and 30% faced moderate to extreme difficulty in doing so. 67% of the patients were worried about their current health status and 73% felt that their symptoms do not indicate that they have serious illness.

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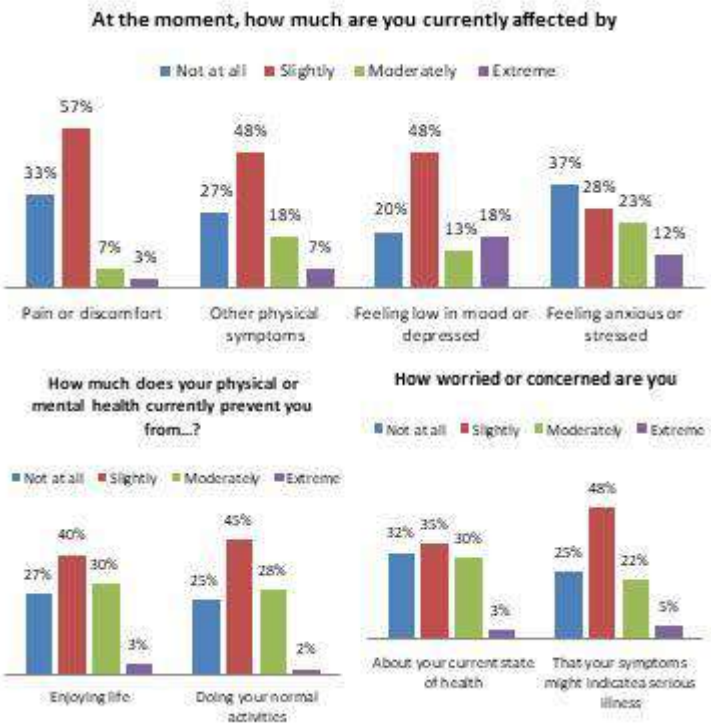

Conclusion: Majority of patient undergoing cancer treatment were optimistic and untroubled. The outlook was positive and hopeful. The majority of patients who had undergone surgery reported slight pain as very few had faced extreme pain. The patient on chemotherapy had few physical symptoms as 75% patients had slight to no physical symptoms during treatment and were able to perform normal activities of daily living. This was a baseline study to initiate PROM, further analysis can be done taking into account the stage and morbidity of patients as well.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1122

EFFECTIVENESS OF THE HUDDLE RUN MEETINGS IN IMPROVING THE PATIENT SAFETY CULTURE AMONG CLINICAL TEAM MEMBERS

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Introduction: Huddle is a connotation of huddling together. Such a "huddle moment" phenomenon can be described as a pre-prepared report by medical team members. In this study, Huddle run meetings are short periodic reports designed to facilitate clinical team members to communicate, collaborate and bring situational awareness on patient safety issues. The purpose of this study was to explore the effectiveness of the use of 'Huddle Run Meeting' in the medical and surgical ward teams in the care process regarding patient safety culture.

Methods: This study was approved by the institutional review board. A prospective cohort study design was used. 185 clinical team members were recruited from the medical and surgical wards of a medical center in Taiwan. The experimental group participated in Huddle Run meetings 2-3 times a week for a total of four weeks, 15 minutes each time. The meeting process is classified on the board by idea submitted, idea approved, working on idea, and standardizing, and is implemented in a standardized process. The control group followed the routine team care process. Before and after the study, a structured safety attitude questionnaire were used to collect data from each participant.

Results: The post-test scores of the experimental group were higher than those of the pre-test in all aspects of patient safety attitude. Except for the Stress Recognition, other factors such as teamwork Climate (76.47±15.90 vs 83.29±13.52, $p<0.001$), Safety Climate (75.94±16.14 vs 82.81±13.74, $p<0.001$), job satisfaction (74.34±20.22 vs84.40± 17.22, $p<0.001$), Perceptions of Management (78.02±19.99 vs 85.51±15.97, $p<0.001$) and working conditions (78.85±17.87 vs 86.81±14.74, $p<0.001$) and other five-dimensional scores have improved significantly. The control group showed significant improvement only in the Stress Recognition (79.59±19.40 vs 82.11±18.30, $p=.047$). And another results of the positive answer scores of patient safety attitude showed that the positive answer rate of patient safety culture in the experimental group after intervention in the hundle run meeting was

high, and the teamwork climate k in the six dimensions (63% vs 81%, p=.004), safety climate (56% vs 76%, p=.001), job satisfaction (57% vs 75%, p=.001) and working conditions (71% vs 90%, p<.001) had Significantly improved.

Conclusion: Huddle Run meetings improved clinical team members regarding patient safety attitude. Use the Huddle Run conference to identify factors that affect patient safety, so that managers can formulate strategies to improve patient safety.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1132

REAL WORLD PRESCRIBING PATTERN AND RISK FACTORS ANALYSIS ON DRUG-DRUG INTERACTION WITH NIRMATRELVIR/RITONAVIR (PAXLOVID) FOR EARLY TREATMENT OF SARS-COV-2 PATIENTS: A SINGLE MEDICAL CENTER EXPERIENCE

C. C. Wu[1,2,*], H. C. Lee[1], S. R. Huang[1], Y. W. Chien[1], Y. H. Hsu[1,3], P. C. Chu[1], Y. S. Huang[1], S. C. Tsai[1]

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Introduction: The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) protease inhibitor nirmatrelvir/ritonavir (Paxlovid) has been granted authorization or approval. Checklists on Paxlovid use has been promulgated from Centers for Disease Control and Prevention (CDC) which can offer clinician a practical guide to achieve optimal prescribing in Taiwan. However, potential drug interactions can be very challenging to interpret, predict and manage. Besides, existed DDIs patterns accompanied with Paxlovid in real-world prescribing practice are limited. In some situation, several drugs are categorized into “close monitoring” with elevated or decreased concentration. Lack of specific recommendation on those drugs might pose great risk on drug safety. This study aimed to investigate the prescription patterns on Paxlovid and its DDIs from single medical center.

Methods: This retrospective study was performed at single medical center in southern Taiwan. Confirmed COVID-19 outpatients with Paxlovid prescription have been included during 2022/03-2022/06 with institutional review board approval. Baseline characteristics including gender, age, co-drug, and co-morbidity has been extracted from electronic health record. Definition on DDI pair information has been integrated from consensus from French, Spanish, and drug interaction checker website to provide comprehensive evaluation tool. Indicated risk factors from checklists and DDI records are manually documented. Descriptive statistics were used to report patient data, disease characteristics, and specific DDI items. Categorical variables were presented as number (n) and percentage (%), while continuous variables were presented as mean ± standard deviation (SD). Logistic regression has been conducted to assess variables associated with DDIs pairs. All p values were two-sided with <0.05 considered to be statistically significant.

Results: A total of 823 patients has been included in the study. Of these patients, 43.1% were men, and the mean age was 62.9 years (SD = 16.4). Elderly population (age>65 years old) possess 61.5% of all patients. Average numbers of indicated risk factors was 1.49 per

patient. The most common indicated risk factors derived from checklists are diabetes mellitus (DM) (n=169, 20.5%), followed by cardiovascular (CV) diseases (n=118, 14.3%) and history of cancer (n=117, 14.2%). Among the included patients, we found that 114 patients' (13.9%) current medication possess at least 1 DDIs with Paxlovid. The most encountered drug with DDI is statin (rosuvastatin, atorvastatin, and pitavastatin) and anti-hypertensives (bisoprolol and amlodipine). Most of the patients with DDIs is 1 pair (n=55, 48.2%), followed by 2 pairs (n=44, 38.6%). Compared to 1 pair of DDIs, patients with more than 2 pairs of DDIs are equipped elevated risk with DM (odds ratio (OR) and 95% confidence interval (CI)=2.23 (1.46, 3.41)) and cardiovascular diseases (odds ratio (OR) and 95% CI=2.88 (1.89, 4.40)), while chronic kidney diseases (odds ratio (OR) and 95% CI=0.45 (0.27, 0.75)) possess decreased risk.

Conclusion: Paxlovid has been prescribed soon after the COVID-19 outbreak. There are about 10% Paxlovid users have DDIs, including statin and antihypertensives. The results of the current study can help to construct the framework of pharmaceutical care on COVID-19 patients to ensure the drug safety.

Disclosure of interest: None declared.

ISQUA2023-ABS-1133

AN EXPLORATORY RESEARCH ON QUALITY OF HEALTHCARE IN ECUADOR FOR THE IDB-HIRA JOINT CONSULTATION PROJECT ON HEALTH POLICY: A SYSTEMATIC REVIEW

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[1]*International Cooperation Department, Health Insurance Review & Assessment Services, Wonju, Republic of Korea*

Introduction: The International Development Bank has started building international cooperation for healthcare systems. The Health Insurance Review and Assessment Service of Korea has been responsible for consulting various nations from 2018 to date, including the Republic of Armenia (in 2020), Peru (in 2021), and Ecuador (in 2022). Over the past 2 years, the Health Insurance Review and Assessment Service has found it necessary to establish an appropriate framework for consulting Ecuador regarding elevation of the country's quality of healthcare. Therefore, there was a need to systematically explore the healthcare system in Ecuador firstly. Herein, we performed a systematic review as an exploratory research.

Methods: We conducted a systematic review on four databases (MEDLINE, Embase, Cochrane Library, and ProQuest) and the World Health Organization Institutional Repository for Information Sharing (WHO IRIS) to search for related research papers. Medical Subject Headings terms were established according to the Participants, Interventions, Comparisons, and Outcomes criteria.

Titles, abstracts, and Medical Subject Headings terms from 2000 to 2022 were screened and selected according to the eligibility criteria. Duplicate abstracts were eliminated using EndNote 20. Each researcher selected relevant papers by reading the abstracts. In case of disagreement, consensus was reached through discussion among the researchers.

The Downs and Black checklist was utilised for quasi-experimental studies and the Newcastle–Ottawa Scale was applied to assess the quality of studies. Differences in assessments were resolved through discussion among the researchers.

Results: In this comprehensive literature review,

There are several aspects to improve efficiency in Ecuadorian health system.

1) Mobile surgical trucks are widely utilised due to the lack of the accessibility to medical facilities.

2) Management of Medical records, resources, and drugs including antibiotics are lacked because these are manually hand-written.
3) The shortage of the number of beds at hospitals, essential drugs at pharmacies, specialists including pharmacists. It also causes heavy burdens of mental diseases both patients and medical staffs.
4) The lack of medical devices, such as MRI (Magnetic Resonance Imaging), not only causes increasing waiting time for medical services, but also negatively affects the participation rate of annual or regular screening in Ecuador.

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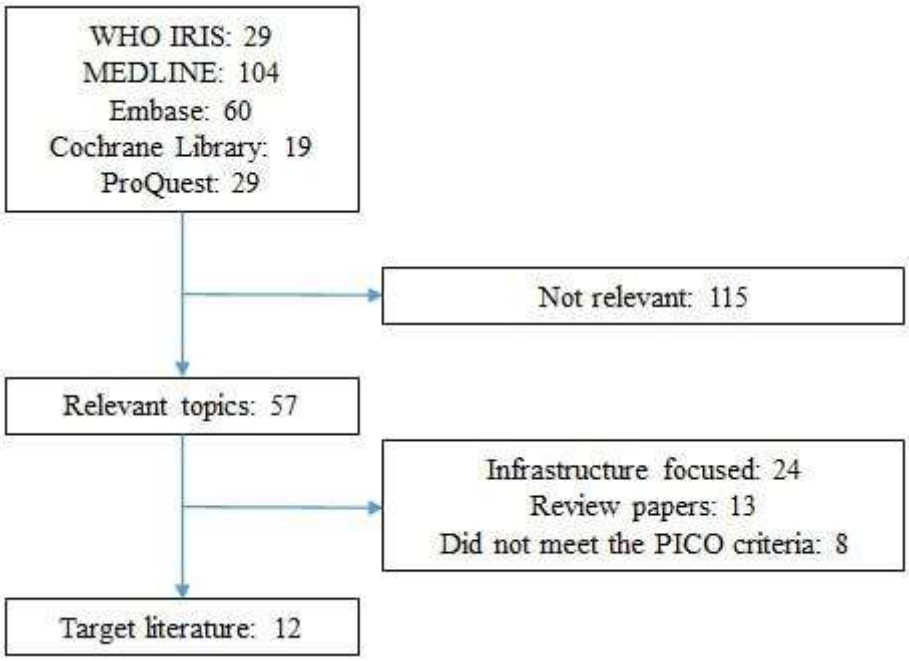

Conclusion: From this systematic literature review, the issues that need to be considered regarding Ecuador's healthcare policy can largely be classified into three categories:

1) There is a need for cost-effectiveness considerations between the use of mobile surgical trucks and the construction of additional public hospitals with an adequate number of beds and healthcare centres.
2) There is a need to introduce an electronic billing system to control the misuse and abuse of antibiotics and to manage resources efficiently.
3) There is a need to consider the importance of mental health and effective interventions.

In this review, the papers included shed light on the direction for policy concepts required to improve Ecuador's healthcare system from different perspectives and highlight future challenges that HIRA will need to address in collaboration with the Ecuadorian Ministry of Health.

Disclosure of interest: None declared.

ISQUA2023-ABS-1141

A STUDY ON THE EFFECT OF THE DISTRICT TEACHING HOSPITAL LAUNCHED PRE-ESRD PHARMACIST OUTPATIENT

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Introduction: Formerly, those diagnosed with Pre-ESRD used to be cared by the specialists/physicians in association with the nursing personnel/crew. In 2021, Taiwan had a new initiative of adding the pharmacists to the Pre-ESRD caring personnel. In compliance with the initiative, the Hospital adds the pharmacists to the Pre-ESRD team.

Methods: There are two nephrologists in the Hospital and their outpatient schedule is in the afternoon on Mondays, Tuesdays and Fridays when the Pre-ESRD pharmacist outpatient is scheduled simultaneously. Within a time not less than one week prior to the pharmacist outpatient time, the sheet of the Pre-ESRD patients will be given. During the outpatient hours, the Pre-ESRD patients will consult with the pharmacist first. The pharmacist has the duties in four aspects to fulfill. First, as it comes to medications, the recent drugs orally administered by the Pre-ESRD patient will be reviewed, including the Hospital-prescribed ones, those prescribed by other medical service providers, the traditional Chinese medicine, and the supplements, and nephrotoxicity of NSAIDs will specifically be stressed to avoid renal failure if they are orally taken by the Pre-ESRD patient. Second, the compliance will be assessed and how the drugs are orally administered will be understood. Third, if nutritional needs emerge, the Hospital medical dietitian can engage in the joint development of the nutritional education leaflet provided to the Pre-ESRD patient. Fourth, if the prescription is found to be questionable, the pharmacist will fill out the advice sheet and ask the Pre-ESRD patient to give it to the specialist for the immediately corrected prescription.

Results: Statistically, within a given time calculated from January to August in 2022, there were 89 patients receiving the medical services provided at the outpatients as follows: 30 times of providing Pre-ESRD self/home caring, 65 times of giving medication-associated guidance, 70 times of teaching medication-associated skills, 89 times of avoiding kidney trauma (injury, poisoning) by nephrotoxic drugs, 15 cases of offering the significant advice to the nephrologists and 27 cases of identifying the Pre-ESRD patients taking the nephrotoxic drugs.

Conclusion: Prior to the pharmacist addition, the Pre-ESRD Scheme has been enforced over

years and such new addition in charge of explicating the nephrotoxic drugs lead to renal trauma can reduce the risks of progressing renal failure. The significance of the pharmacist addition is pinpointed by submission of 15 questionable prescriptions. In addition, the majority of those with Pre-ESRD need the nutritional education, so the Pre-ESRD pharmacists must have certain understandings of nutrition in order to duly perform and fulfill the required duties associated with the team and the patients' medication and nutrition.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1158

STRATEGIZING TO DRIVE CARE QUALITY IN PUBLIC HEALTH PURCHASING – LEARNINGS FROM THE EXPERIENCE OF AB PM-JAY SCHEME OF INDIA

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Introduction: Strategy to influence the quality of care is integral to any large-scale healthcare purchasing scheme. AB PM-JAY, India's flagship public health financing scheme and the world's largest, has designed and implemented a national-level strategy to drive quality. On the lines of pay for performance (p4p), the strategy is to pay a differential rate to Empaneled Healthcare Providers (EHCPs) as per three quality levels - Gold, Silver and Bronze.

This empirical study evaluated the effect of the strategy on quality and interest of EHCPs in participating.

Methods: A mixed method approach was used by integrating qualitative and quantitative analysis findings. Primary data consists of semi-structured interviews of 39 administrators of EHCPs, observation-based scoring of 21 EHCPs for their facilities, and satisfaction rating of 200 patients using an adapted PSQ-18 instrument. EHCPs were sampled from six districts of the country. Secondary data includes basic details of all 25,817 EHCPs and clinical data of random 2000 patients.

Uptake by EHCPs was assessed through descriptive analysis EHCPs that participated in the quality strategy. Interest and intent of EHCPs were deduced using thematic analysis of qualitative interview data. Effect on quality was assessed using facility scores, patient rating and claim turn-around time (TAT) of EHCPs at different quality levels. Size of EHCPs was used as a moderating variable. Chi-squared test of significance was used to test statistically significant differences.

Results: Just 3.1% of non-accredited EHCPs, almost all private, applied for the Bronze level. From accredited EHCPs (who were readily eligible for Silver or Gold), only 29.8% applied and obtained the level. EHCPs at the Gold level mainly were large-sized (40%), at the Silver levels were mid-sized (47%) and at Bronze levels were small-sized (40%).

EHCPs with greater interest in the AB PM-JAY scheme were also interested in achieving

quality levels. Gold-level EHCPs were primarily high-cost facilities and had a lower interest in the scheme than Bronze-level EHCPs, which were generally low-cost facilities.

Facility scores of Gold, Silver and Bronze EHCPs were 4.63, 3.48 and 2.66 (out of 5) and their mean claim turn-around times were 40, 37 and 56, respectively. The difference between EHCPs at highest and lowest quality levels was significant at $p < .05$. However, average patient rating was inverse to the quality levels of EHCPs, with Gold, Silver and Bronze at 7.9, 8.9 and 9.2 (out of 10), respectively. The average patient rating of Bronze level EHCPs was significantly higher than Gold EHCPs at $p < .05$.

Intent of EHCPs to maintain the current quality level was high, but their value perception of improving to the next level was low for Silver to Gold and high for Bronze to Silver.

Conclusion: The strategy had differentially and partially influenced the EHCPs to improve their quality. Interest of EHCPs in the strategy seems to be determined by their overall interest in the AB-PMJAY scheme. Considering the value perception of EHCPs, those at lower quality levels are likely to progress and remain at a mediocre, Silver quality level only.

The contrasting patient rating suggests that factors other than quality level, such as EHCP's interest level in catering to the scheme's beneficiary, are dominant in determining patient satisfaction.

Implication: The interest level of networked healthcare providers in the overall scheme and their value perception of the performance targeted are factors that must be considered while designing a p4p-based quality strategy.

Disclosure of interest: A. Raza Grant/Research support from: The study was funded by WHO, S. Phadnis: None Declared, N. Vaz: None declared, G. Kabaniha Employee of: The study was funded by World Health Organization with which Dr Grace is affiliated with.

ISQUA2023-ABS-1177

TELEHEALTH AND HOSPITAL PERFORMANCE: DOES IT MATTER? RUNNING HEAD: TELEHEALTH AND HOSPITAL PERFORMANCE

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Introduction: Previous studies indicated that telehealth services may improve hospital performance. However, the extent to which these telehealth provisions would improve hospital total performance score under the hospital value-based purchasing (HVBP) program is not clear. The aim of this study is to examine the association between hospital telehealth provision and hospital performance.

Methods: We performed a retrospective analysis of the association between the provision of telehealth services and 2,699 hospital's total performance score (TPS) on the 2018 HVBP program and its four domains. Multivariate regressions models were used to analyze TPS and hospital performance on each individual domain. Telehealth services offered by a hospital was categorically operationalized as hospitals with no telehealth services, with 1 to 2 telehealth services, and with 3 or more telehealth services.

Results: Hospitals with 1-2 telehealth services have TPS (ß=1.50; 95% Confident Interval (CI): 0.28, 2.73; p <0.05) and hospitals with 3+ telehealth services have higher efficiency and cost reduction (ß=1.10; 95% CI: 0.32, 1.87; p <0.01) domain scores. However, the impact of telehealth on clinical care, person and community engagement, and safety domain scores was not significant.

Conclusion: The expansion of hospital telehealth service provision can improve not only the efficiency of care, but also the total performance of the hospital. Since the total performance is directly associated with hospital payments from the government, these findings have significant practice and policy implications. In addition, the effect of telehealth on other quality measures such as clinical care and safety needs further investigation.

Disclosure of interest: None declared.

ISQUA2023-ABS-1184

EFFECTIVENESS OF TELE-EXERCISE TRAINING ON PHYSICAL ACTIVITY, CARDIORESPIRATORY FITNESS, AND HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH CARDIOMETABOLIC MULTIMORBIDITY

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Introduction: Exercise is beneficial for cardiometabolic health and health-related quality of life (HRQL); however, evidence regarding the effectiveness of the-exercise training on physical activity (PA), cardiorespiratory fitness, and HRQL in patients with cardiometabolic multimorbidity requires further exploration. Therefore, this study aimed to assess whether an assumed increase in PA after tele-exercise training improved cardiorespiratory fitness and HRQL in patients with cardiometabolic multimorbidity.

Methods: A randomized controlled trial with 83 Eligible patients with cardiometabolic multimorbidity randomized to either an experimental group (EG, received a 12-week tele-exercise training with 3 sessions/week and 30 min/session) or a control group (CG, usual care only) was conducted. PA, cardiorespiratory fitness, and HRQL were assessed at baseline and 12 weeks. Generalized estimating equations were used to examine the intervention effects via the interaction of time and group. In addition, institutional review board approval was obtained from the local medical center in Northern Taiwan before the commencement of the study. All participants who provided written informed consent were assured that their participation was entirely voluntary.

Results: The EG with higher vigorous-intensity PA (β = 714, p = .037), walking behaviour (β = 750, p = .0007), and total amount of PA (β = 1748, p = .001) after the intervention had significantly elevated cardiorespiratory fitness (VO_{2peak}, β = 3.9, p = .042), and improved HRQL (physical function [β = 7.55, p = .03] and physical component summary [β = 4.42, p = .03]) (β = 5.3, p = .025), compared with the CG.

Conclusion: Tele-exercise training was effective in increased PA, elevated cardiorespiratory fitness, and improved HRQL for patients with cardiometabolic multimorbidity, highlighting the feasibility of better delivering PA promotion for cardiometabolic health management.

Disclosure of interest: C.-H. Lin Grant/Research support from: This study was funded by Tri-Service General Hospital (grant numbers: TSGH-C108-127, 2019) and Ministry of Science and

Technology (grant numbers: MOST107-2314-B016-068, 2018), Taipei, Taiwan.

ISQUA2023-ABS-1185

USING SMART TECHNOLOGY TO IMPROVE THE ANXIETY OF COVID-19 PATIENTS LIVING IN ISOLATION WARD

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Introduction: The rapid spread of COVID-19 in 2019 led to a global pandemic. According to statistics, as of December 10, 2022, the cumulative number of confirmed cases worldwide has reached more than 600 million, and the number of deaths worldwide has reached more than 6 million, with a mortality rate of about 1.03%. Studies have found that patients with COVID-19 who are admitted to negative pressure isolation wards are prone to anxiety. Facing the unpredictable disease progression and prognosis, COVID-19 patients not only suffer from great physical discomfort, but also have great psychological shock and fear.

Methods: A similar experimental research design experiment was adopted, and the subjects were divided into the experimental group and the control group by simple random assignment. In the isolation ward of a hospital in northern Taiwan, 62 patients were diagnosed with COVID-19 (30 in the experimental group, There were 32 people in the control group. The two groups received the use of smart technology equipment and general routine care respectively. The experimental group used wards equipped with smart medical equipment such as remote physiological monitors, smart tablet computers, image monitoring systems and mobile medical anti-epidemic video vehicles, etc. In addition, through the online video meeting to relieve the anxiety and anxiety during the isolation period, the general routine care adopts the general routine care for a total of 2 weeks, 7 times a week for 60 minutes each intervention, and the results are measured before and after the intervention Week 2. Outcome indicators Measure the difference in anxiety levels of patients before and after the intervention with the Visual Analogue Scale (VAS).

Results: Data analysis was performed using SPSS (version 22.0) and Wilcoxon analysis results: (Visual Analogue Scale, VAS) test results before and after intervention showed that the average VAS decreased from 7.2 to 3.1 points, reaching a significant difference ($P<0.001$).

Conclusion: COVID-19 quarantined patients will have a variety of emotional distress, such as stress, depression, irritability, insomnia, fear, etc. Some patients still have these negative psychological feelings after being released from isolation, and they need more care and care

(Pfefferbaum & North, 2020). In order to reduce the anxiety of COVID-19 patients in isolation, a total of 2 weeks of intervention were carried out, and the results proved that the use of technological equipment care can reduce the anxiety of COVID-19 patients living in negative pressure isolation wards. The establishment of a new smart medical care model is a future trend. It is expected to help patients alleviate the anxiety caused by isolation and provide a reference for future clinical care.

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Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1204

JOINT COMMISSION INTERNATIONAL'S ENTERPRISE ACCREDITATION: BUILDING THE FOUNDATION AND CULTURE OF SYSTEM-WIDE QUALITY IMPROVEMENTS IN MULTI-FACILITY HEALTH CARE ORGANIZATIONS

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Introduction: According to the World Health Organization (WHO), there is no existing unifying definition for integrated care. As such, accreditation in health care has historically focused on evaluation of individual health care institutions as free-standing facilities. However, with increasingly complex health care needs for various patient populations, health care facilities are moving into a more interconnected system to provide integrated patient care. In medicine, the "integrated care" model refers to practice that seeks to improve patients' health and experience from health care delivery systems (Shaw S, Rosen R, Rumbold B, 2018).

In 2020, the COVID-19 pandemic further highlighted the need for coordinated care as many hospitals needed to be designated for infected patients while other facilities cared for others. A coordinated approach to global communicable diseases and the increasing need for integrated patient care requires evaluation of quality improvement and patient safety at a system-wide level and must consider how each health care facility coordinates, communicates, and aligns to ensure the highest quality of patient care.

Methods: To better identify system-wide quality improvements and their direct impact on patient safety and quality, Joint Commission International (JCI) reviewed similar and related requirements across its accreditation programs. JCI formed an advisory panel from established healthcare systems to obtain input on operational requirements and alignment of JCI-accredited facilities. The advisory panel consisted of at least two representatives from established healthcare systems in the Middle East, Asia, Europe, and North America. Over 50+ scientific literature were reviewed pertaining to patient care coordination, centralized human resource coordination in health care, governance and leadership structure, and integrated care.

After identifying relevant requirements across all JCI accreditation programs, additional new standards were proposed to focus on distinct areas within an interconnected health care system. Following JCI's standards development process, the proposed standards were

sent out for a public field review to gather wider perspectives and recommendations from the general public.

Results: Based on literature review, subject matter expert input, and recommendations from public field review, JCI developed an Enterprise accreditation standards and survey process that evaluates four distinct areas within an interconnected health care system:

1. Governance and leadership
2. System-wide policies and procedures
3. Human resource coordination
4. System-wide quality improvement initiatives

The new accreditation program identified system-wide quality improvements in an interconnected system. In 2022, four healthcare network systems have achieved JCI's enterprise accreditation which also resulted in a streamlined survey process across individual healthcare facilities.

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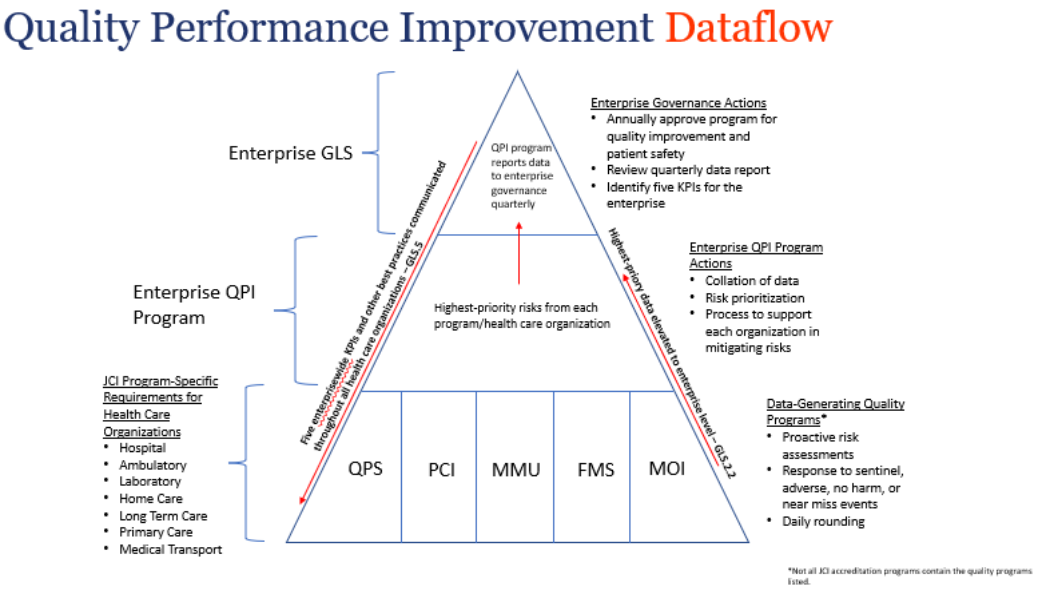

Conclusion: The Enterprise accreditation standards depicts the quality performance improvement data flow from JCI-program specific requirements and how each quality initiatives can be coordinated at a system level.

References

Disclosure of interest: None declared.

ISQUA2023-ABS-1218

EXPLORED THE EFFECT OF TAI CHI EXERCISE IN VR WITH HIGH RISK OF FALLS IN PSYCHIATRIC PATIENTS

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Introduction: Falls are one of the common problems in the safety of psychiatric patients. This unit is a day ward for psychiatric patients, with a total of 60 beds. After being admitted to the hospital for fall risk nursing assessment, 90% of patients are at high risk of falling, and among them, 70% of the patients with lower extremity muscle strength assessment were 4 points (except for gravity resistance and partial resistance) to 5 points (normal) and subjectively complained of weakness, which shows that there is a potential risk of falls. The evidence-based data have shown that performing Tai Chi exercises can improve lower limb muscle strength. The purpose of this study is to explore the psychiatric patients who perform Tai Chi exercises in VR (virtual reality) can improve lower limb muscle strength and indirectly reduce the incidence of falls.

Methods: This research design adopted an observational study. The subjects of the study were psychiatric daycare unit patients who were assessed as high risk of falls and were willing to participate in the study. The study period was from September 2021 to June 2022. Data analysis was performed using IBM SPSS software version 27 for descriptive statistics and paired-sample t-test statistical analysis. The intervention measures were to build the eight-style Tai Chi exercises in VR in January 2021, including 1. Inverted curling of the humerus. 2. Left and right hug knees and bend steps. 3. The left and right wild horses have separate manes. 4. Cloud hands. 5. The left and right golden roosters are independent. 6. Kick your feet right and left. 7. Right and left hold the tail of the sparrow. 8. Cross hands. Using computer analogy to generate a three-dimensional virtual world, providing patients with the feeling as if they were there. When the patient is practicing Tai Chi exercises in VR based on the virtual image to move the position, the computer can immediately perform complex calculations and send back the accurate three-dimensional world image to generate a sense of presence, allowing the patient to correct the movement in time to improve the correctness of the movement.

Results: It can be found that a total of 23 patients with a high risk of falling used Tai Chi exercises in VR twice a week, and once a week they had to practice for 20 minutes. The evaluation was carried out after 2 months. The number of patients complaining of weakness

decreased to 53%, a statistically significant difference ($p < 0.05$). Another 12 patients with a high risk of falls used Tai Chi exercises in VR 3 times a week, and they had to practice for 20 minutes once a week. After 4 months of evaluation, the results showed that the lower limb muscle strength was evaluated as 5 points and the subjective complaint was weak patients can be reduced to 38%, up to a statistically significant difference ($p < 0.05$). These 35 patients have not experienced falls due to lower limb weakness so far, and the incidental result is that the average subjective satisfaction score for Tai Chi exercises in VR is 92 points (The full score is 100 points).

Conclusion: Psychiatric patients or elderly people who take an antipsychotic, antidepressant, sedative, or hypnotic drugs can practice Tai Chi exercises in VR at a fixed frequency and continuously to improve muscle strength of lower limbs, increase the health literacy of fall prevention and promote daily activities satisfaction. The results of this study suggest that operational nursing guidance content can be built into digital (such as AR or VR) teaching materials, which can improve patients' motivation, learning effect, and quality of life.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1228

INTERPERSONAL INTERACTION GROUPS FOR CHRONIC SCHIZOPHRENIA

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Introduction: The positive and negative symptoms of schizophrenia (positive symptoms such as: delusions, hallucinations, deconstructed language, confusion and other behaviors; negative symptoms such as: poor social language, lack of emotional expression, lack of motivation, life withdrawal, etc.) often prompt patients to communicate with It is difficult for others to have positive interactions. At the same time, diseases are related to social interaction disorders. Most of the drug treatment can effectively improve the positive symptoms, but the effect is not good for the negative symptoms. Therefore, it is very important to cooperate with mental rehabilitation treatment. One of them can be used Group therapy to aid improvement.

Methods: The interpersonal interaction group is formed in the day ward, with 9 students with chronic schizophrenia. The group is held once a week, 90 minutes each time, for four weeks, led by a nurse. The first and last time of the group is to assess the distress index with a mood thermometer, Evaluation of interpersonal interaction skills with communication and interaction skills tools. The group themes are nice to know you, four treasures of communication, something to say, and my blessings.

Results: The attendance rate of the group was 100%, the average score of the mood thermometer dropped from 4.6 to 3 points, no one had suicidal thoughts before and after the group, and the communication and interaction skills increased by 65 points from 60 points. Interaction skills have improved. After the last group, a survey on the satisfaction of the students with the leaders was conducted, with an average score of 4.3.

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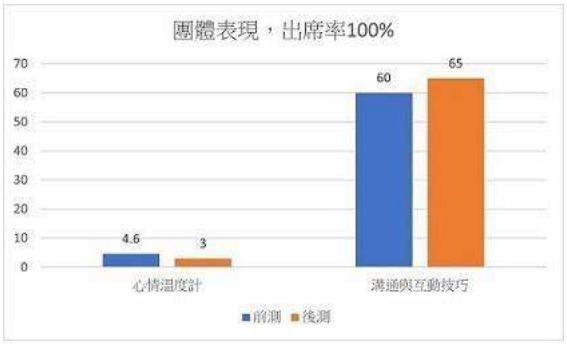

Conclusion: Although the nature of the ward and the characteristics of the patients need to be taken into account in the group, the interpersonal interaction group is a highly feasible group therapy, which can not only help the patient's social skills, but also discover the patient's recent stressors during the process and provide a channel to relieve stress.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1239

DEVELOPMENT OF AN INTEGRATED MODEL OF CARE FOR INPATIENTS WITH PHYSICAL AND MENTAL HEALTH DUAL DIAGNOSES IN A REGIONAL HOSPITAL IN AUSTRALIA

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Introduction: Comorbid mental and physical health problems require collaboration, coordination, and partnership involving mental health clinicians, general practice, physicians, and the consumer at a local level. In Australia, the prevalence of mental health conditions is similar between metropolitan and rural areas, however, in rural and remote areas there are higher rates of Emergency Department (ED) presentation per 10,000 population for mental health issues, self-harm hospitalisations (although this is highest in the 15-19 age group) and higher rates of suicide.[1] Among the proposed reasons is the lack of access to specialised mental health services, a factor that also impacts the provision of inpatient mental health care in regional and rural areas.

When an individual is hospitalized with both a mental and physical health issue, the same collaboration and coordination among care providers promotes optimum assessment and monitoring. In general hospital wards, however, staff often have little or no mental health training to recognise deterioration, and the regional mental health service may have little available capacity to oversee the person's care. An acute deterioration in a person's mental state is considered an adverse outcome in hospital settings, but this can be associated with further adverse outcomes including suicide, aggression, and the traumatic use of restrictive practices. These events exacerbate poor patient outcomes and can cause significant distress for families and staff.

Acute services must respond in real time to changing epidemiology, emerging problems and in response to serious adverse events, which precludes a lengthy research cycle. This presentation describes the process undertaken to develop and implement a collaborative model of care for inpatients with dual diagnoses within a short timeframe at a regional hospital in Australia, and early adaptation following implementation.

Methods: An environmental scan of legislative frameworks, regulations, clinical guidelines and the perspectives of senior clinicians was undertaken to formulate a model of care that suited the local context.

Results: A model of care has been developed to trial and adapt. A major limitation is the lack of lived experience of consumers which could not be undertaken in the short timeframe.

Once agreed, a developmental evaluation framework guided adaptation and identification of ongoing need.

Conclusion: Integrated care models that are tailored to the local situation and the resources available are required to achieve the best possible outcomes for consumers and providers. Consideration of all stakeholder perspectives is important to overcome siloed service design, maximise the use of available specialist staff and other resources, and articulate clear and agreed expectations. While this was an expedited process, the gaps for further cooperative work and research will be highlighted which may also be of interest to others.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1265

THE ROLE OF HEALTHCARE SECTOR IN A NUCLEAR DISASTER - DO OR DIE? AN ALARM CALL FOR COLLECTIVE PREPAREDNESS AND NUCLEAR DISARMAMENT AT INTERNATIONAL LEVEL

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Introduction: Recent times have shown a sudden escalation in the possibility of a nuclear war. The nuclear weapons in the present era are reportedly over a 100 times more powerful than those that destroyed Hiroshima and Nagasaki. However, there is a lack of general awareness regarding the consequences and outcomes of a nuclear disaster. The role of the healthcare sector in a nuclear catastrophe is still in the dark. The disaster in Hiroshima wiped out 80% of the cities hospitals and almost its entire population of healthcare workers. Surveys among healthcare workers have shown a lack of knowledge regarding the management of a nuclear catastrophe and also an alarming un-willingness to get involved in the emergency response. This study aims to review existing literature pertaining to the topic, highlight the lacunae in current knowledge related to the role of healthcare sector and to propose plausible solutions to the deadly issue.

Methods: The present study is a systematic review of literature, including surveys relevant to the role of healthcare sector in a nuclear disaster.

Ethical Consideration – The confidentiality of individuals and organisations have not been violated

Results: There is a general lack of awareness and knowledge among healthcare workers regarding nuclear emergency response, triage, further management of victims and an alarming unwillingness to be a part of the emergency response team. The current Russia-Ukraine war prompted the Ukraine healthcare sector to reconfigure 10% of its Emergency Response teams to respond to chemical, biological, radiation and nuclear risks. Though organisations like the IAEA, CDC, FDA and agencies worldwide have proposed guidelines for nuclear emergency response; these have not been incorporated into healthcare worker training sessions. Mock drills and readiness for such events are disregarded by most healthcare governing and accreditation bodies. The Radiation Emergency Medical Management website has proposed Bio dosimetry to estimate the radiation dose received by an individual thereby aiding in triage and further allocation of sparse resources in case of mass casualty. Medical Counter measures, Geographic Information Systems-based applications and use of robots in the scenario have scope for further development. The

potential scope and scale of a nuclear after math are not commensurate with an emergency response team being able to make any significant dip in morbidity and mortality. According to ICAN (International Campaign to Abolish Nuclear Weapons), even the most advanced healthcare systems also do not have the capacity to provide effective response.

Conclusion: The question remains whether the healthcare sector should actively prepare to respond to a nuclear disaster or just be witnesses to the catastrophe, or even worse, die without fulfilling our duties to humanity as healthcare workers.

The uncertainties of our time mandate a collective preparedness for the annihilating threat. The response calls for multidisciplinary (including non-medical experts) action and collaboration at international level to facilitate further research in the subject and propose counter measures. Nuclear disaster awareness must be made mandatory topics for medical personnel training and also be included in the medical curriculum. Along with organisations like ICAN, IPPNW and others around the globe, healthcare workers must contribute to the case against nuclear warfare while preparing to respond to a God-forbidden one.

Disclosure of interest: None declared.

ISQUA2023-ABS-1273

INCREASE THE SATISFACTION OF EFFECTIVE COMMUNICATION IN PATIENTS WITH DEAF DISABILITIES TO PREVENT UNEXPECTED EVENTS

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Introduction: Patient safety must be applied universally to all patients, including patients with deaf disabilities who may encounter communication barriers. In a community meeting of deaf patients with hospitals in Indonesia, they complained about not being able to access optimal information and communication due to limited hospital resources. This has the potential for unexpected events to occur. The aim of this project is to develop an effective communication system between health workers and patients with deaf disabilities to support patient safety.

Methods: The development of this project uses a design thinking approach which is a problem-solving method based on the human center, through five stages, namely empathize, define, ideate, prototype and test. This project was developed at the Syamsudin Hospital, one of the hospitals in the province of West Java in Indonesia by involving the community of deaf patients. Qualitative measures are used to measure communication satisfaction.

Results: A communication system was developed for deaf patients starting from screening and identifying deaf patients, making special signs as attention, training health workers to use sign language, making communication kits and making bilingual educational media. Patients feel very satisfied with the communication model developed. This project received appreciation in the best public service innovation competition in Sukabumi-West Java in 2022.

Conclusion: The communication system that has been developed effectively improves patient communication satisfaction with health workers at the hospital, so as to prevent unexpected events from occurring.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1342

DEVELOPMENT AND PSYCHOMETRIC VALIDATION OF THE HOSPITALISED OLDER ADULTS DIGNITY SCALE FOR MEASURING DIGNITY DURING ACUTE HOSPITAL ADMISSIONS

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Introduction: Older adults experience loss of dignity during acute hospitalisation as a result of their declining physical and cognitive function associated with ageing. Dignity refers to as an inherent self-worth that is given to all human beings by creation, and that has the tendency to be lost through the individual's interaction with society. Maintaining patients' dignity remains inseparable to nursing care, and nurses are bound by professional codes of conduct to uphold the dignity of their patients. Previous studies on dignity for older adults during acute hospitalisation employed qualitative designs with limited transferability of study findings, due to paucity of suitable validated dignity-related patient reported outcome measures (PROMs) for older adults. There have been calls for standard and objective criteria for measuring patients' dignity to mitigate the limitations associated with qualitative approaches.

The aim was to develop and validate a culturally appropriate PROM for measuring dignity for older adults during acute hospital admissions. The development and validation of the PROM will provide healthcare professionals with a feasible and reliable PROM for measuring older patients' perspectives about their dignity during hospitalisation.

Methods: A three-phased mixed-method sequential exploratory design was used. Domains were identified and items generated from findings of a recent qualitative study, two systematic reviews that have been published elsewhere. Content validity evaluation and pre-testing were undertaken using standard instrument development techniques. A cross-sectional survey with 270 hospitalised older adults was conducted to test construct and convergent validity, internal consistency reliability, and test–retest reliability of the measure. Analysis was performed using SPSS, version 25. The STROBE checklist was used to document reporting of the study.

Results: We established the 15-item Hospitalised Older Adults' Dignity Scale that has a 5-factor structure: Shared Decision-Making (3 items); Healthcare Professional-Patient Communication (3 items); Patient Autonomy (4 items); Patient Privacy (2 items); and

Respectful Care (3 items). Excellent content validity, adequate construct and convergent validity, acceptable internal consistency reliability, and good test-retest reliability were demonstrated.

Conclusion: We established the Hospitalised Older Adults Dignity Scale as a valid and reliable scale to measure dignity for older adults during acute hospital admissions. Future studies using confirmatory factor analysis are needed to corroborate dimensionality of the factor structure and external validity of the scale. Routine use of the scale may provide information that informs development of strategies to improve dignity-related care for older adults in the future.

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Workforce, Policy, and Governance

ISQUA2023-ABS-1353

ORGANIZATION OF EMERGENCY SERVICES IN HOSPITALS OF NEW DELHI, INDIA: A MULTICENTRIC STUDY

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Introduction: There is limited literature on the large-scale studies pertaining to organization of emergency services in India. This study aimed towards observing the organizational set up of emergency services across hospitals in state of Delhi, which may aid government in planning healthcare services subsequently.

Methods: A descriptive and observational study was conducted from May 2018 to October 2019 in casualty/ emergency department/ emergency services of the hospitals situated in state of Delhi having bed complement of 100 and above inpatient beds. Hospitals were categorized as per the ownership. A total of 96 hospitals were identified which fulfilled the inclusion criteria of providing treatment as per modern medicine and having round the clock (24x7) functional Emergency Services/ Department. These hospitals were stratified into three categories i) having bed complement of 100-499 hospital beds, ii) 500 – 999 hospital beds, and iii) >=1000 hospital beds. At-least 10% hospitals from each stratum or minimum one hospital from each stratum, whichever was higher were included in the study as per, which ultimately resulted in 21.9% hospitals as the study sample. Each hospital was visited in person by the Single researcher visited for data collection, addressing the observer bias. The data was collected with the help of the designed assessment tool for emergency services. The data collected was analyzed using Microsoft Excel and STATA software version 12. The p-value was calculated and the Pearson's chi-square test was used to ascertain whether the difference observed between the groups of hospitals was statistically significant.

Results: Out of 19 hospitals studied, 57.9% hospitals were 100-499 bedded, 26.3% hospitals were 500 to 999 and 15.8% hospitals were 1000 bedded & above. Teaching hospitals constituted 73.7% of the total. All the hospitals had designated in charge and dedicated staff for emergency services. Doctors were trained in BLS, ACLS, PALS, ATLS and Nursing Officers were trained in BLS. It was observed that most hospitals had consultants physically present during the OPD hours in hospital and on-call during nights. The residents of respective speciality gave 24x7 cover physically. The % of ED beds to In-patient beds ranged from 4.3 to 5.4% and annual ED patient volume ranged from 5814 to 5,32,853 patients. The average

number (Overall 12.7) of patients per ED bed per day is 6.08 for private hospitals and 13.36 for government hospitals. Overall compliance to hospital infrastructure, availability of biomedical equipment and essential medicines was observed to be 63%, 60% and 85% respectively. There was significant difference between the compliance to availability of medical equipment (p value = 0.002) and physical infrastructure (p value = 0.007). Most of the hospitals had plan for increasing their bed capacity for disaster like situations, however, most of these areas lacked oxygen supply.

Conclusion: There is variability in organisation of emergency services, however most of the hospitals has triaging and categorisation of ED areas. Public hospitals load of emergency patients is more than the private hospitals, however private hospitals performed better in infrastructure, equipment compliance, while government hospitals were better in availability of essential medicines.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1354

ADVOCATING SHARED DECISION-MAKING (SDM): EXPERIENCE OF TAIWAN

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Introduction: According to the 2014 Taiwan Patient-safety Reporting system annual report, 31.6% of patient safety incidents caused by "communication factors" were attributed to communication problems between the "healthcare team and patients". Thus, we began the promotion of SDM in 2015 to strengthen communication between both parties and provide patients with sufficient evidence-based information to help them make decisions.

Methods: Taiwan Ministry of Health and Welfare and the Health Promotion Administration worked together to promote SDM. Following paragraphs describe timeline: 1. Trial period (2015-2016): We provided education and training to healthcare professionals, developed SDM promotional materials, and established SDM platform. 2. Practice and enhancement period (2017-2018): We introduced Patient Decision Aids (PDA), developed PDAs suitable for local healthcare setting, trained decision coaches while also producing coach training materials. 3. Third phase: (2019-2021): We continue to strengthen the practical application of PDAs, incorporate ethical review into PDA standards, and add a public interface to the SDM platform to improve public participation. SDM effectiveness evaluation, we developed the Taiwan version of the "Preparation for Decision Making" scale originated from the Canadian Ottawa Hospital Research Institute. Both healthcare professional (18 questions) and patient (15 questions) versions were used to evaluate SDM implementation outcomes.

Results: From 2015 to 2021, 1,224 healthcare organizations participated in the SDM experience-sharing event. Within the same duration, 885 PDAs were developed and uploaded to the SDM platform. The same time, hospitals used a questionnaire to explore the level of patient's anxiety when facing medical problems and measured it pre- and post-SDM implementation. The results found that the patient anxiety level was significantly decreased. Moreover, nearly 3,000 questionnaires were collected from healthcare professionals each year to understand their SDM experience. Healthcare professionals shared that SDM helps to "prepare patients to understand their disease and its treatment" and "promote a good doctor-patient relationship". These are the main factors that make healthcare professionals willing to continue using SDM.

In Taiwan, after years of efforts, SDM now gradually became a deeply rooted culture. Many hospitals designed have taken further initiatives such as: implementing interactive online forms in patient's medical record, creating QR-codes that can be accessed at any time, supporting family's involvement, and making the information to be shared among healthcare teams.

Image:

Patient's anxiety level	N	Pre-SDM implementation	Post-SDM implementation	Difference	P value
Year 2017	1,595	3.59	2.85	0.74	0.0000
Year 2018	1,926	3.62	2.88	0.74	0.0000
Year 2019	3,805	3.57	2.76	0.81	0.0000
Year 2020	7,029	3.65	2.81	0.84	0.0000
Year 2021	7,069	3.74	2.7	1.07	0.0000

Conclusion: From the comprehensive experience of promoting SDM in Taiwan, we learned that SDM enhanced healthcare professional and patient communication. Policy and leadership support, physician participation, pre-implementation evaluation, team consensus in implementation strategies, and continuous reviewing of implementation process are all key to the successful SDM implementation.

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ISQUA2023-ABS-1369

EVIDENCE SYNTHESIS TO SUPPORT DECISION MAKING DURING A GLOBAL EMERGENCY – HORIZON SCANNING, RAPID REVIEWS AND LIVING EVIDENCE

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Introduction: The COVID-19 pandemic has seen an increase in rapidly disseminated scientific evidence and has highlighted that traditional evidence synthesis methods, such as systematic reviews which are time and resource intensive, may not be successful in responding to the rapidly evolving policy and practice needs. This global emergency required new approaches to evidence synthesis. To inform policy, reliable, agile and timely sources of evidence-based information were needed. This paper provides an overview of the functions, methods, products, challenges and future implications of the Critical Intelligence Unit (CIU), and the Evidence Integration Group within, in New South Wales, Australia.

Methods: In New South Wales (NSW) Australia, the Critical Intelligence Unit (CIU) was established early in the pandemic and acted as an intermediary organization. It brought together clinical, analytic, research, organizational and policy experts to provide timely and considered advice to decision-makers. The CIU developed a rapid approach in order to be responsive whilst maintaining rigour and transparency in the methods used. The Evidence Integration Group produced three key COVID-19 products: evidence digest, rapid evidence checks and living evidence tables.

Results: Outputs from the Evidence Integration Group, including evidence digest, rapid evidence checks and living evidence tables, have been widely disseminated and used to inform policy decisions in NSW and has shown to make valuable impacts. These products not only informed rapidly developed and up-to-date guidance for NSW clinicians during the pandemic but also a broader piece of work for NSW Health to refer to as we move through different phases of the pandemic. Google analytics has been used throughout the pandemic to monitor access to the evidence. Most visitors to the CIU webpages are from NSW, however all states have accessed the content, with Victoria being the next most active state. Internationally, people from the USA, Canada, New Zealand and others have visited the webpages.

Conclusion: Changes and innovations to evidence generation, synthesis and dissemination in response to the COVID-19 pandemic provide an opportunity to shift the way evidence is

used in the future. The experience of CIU and the methods have the potential to be adapted and applied to the broader health systems both nationally and internationally.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

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THE PROPOSAL OF LIST OF ACSCS (AMBULATORY CARE SENSITIVE CONDITIONS) IN KOREA BASED ON THE CRITERIA FROM AHRQ (AGENCY FOR HEALTH CARE RESEARCH AND QUALITY)

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Introduction: Ambulatory Care-Sensitive Conditions (ACSCs), including hypertension, diabetes, is a list of diseases that early interventions or diagnosis are beneficial in preventing the progress of medical complications which may result in death, hospitalisation, and huge medical costs. ACSCs were classified by the Agency of Health Research and Quality (AHRQ), and the following 16 diseases selected by AHRQ. ACSCs are also representative indicators for evaluating the accessibility and quality of primary care. Therefore, the objective of this study is to analyse the effect of ACSCs provided in a timely and effective manner and prevent the occurrence of medical complications by treating and managing early cases of hypertension and angina that have already occurred using continuity of care (COC) and medication possession ratio (MPR) measurements.

Methods: This study used the data of 1 million individuals from the National Health Insurance Service database (DB) via stratified sampling from 2002 to 2019. The sampling database is based on the sex and age group (18 sections) of the National Health Information Service DB. To maintain representativeness, sampling was performed under the stratification of demographic characteristics and income quintiles in the Republic of Korea. In addition, these cohort data connected with the national-level health check-up DB of over 66% of general population (over 33 million) in Korea. Furthermore, information on the cause of death is provided in connection with death data from the National Statistical Office. We used COC for continuity of care and MPR to estimate medication adherence using NHI data, which tracks prescription data completely.

Results: In participants with hypertension in the low adherence group (COC < 1) compared to the high adherence group (COC = 1) the risk of complications was 1.14 times higher (HR=1.14, 95% CI: 1.10–1.17) and statistically significant. In comparison to the excellent medication adherence group (80–100%), the good group (60–79%) was 1.24 times (HR=1.24, 95% CI: 1.18–1.29), normal group (40–59%) 1.36 times (HR=1.36, 95% CI: 1.29–1.42), bad group (20–39%) 1.42 times (HR=1.42, 95% CI: 1.35–1.50), and very bad group (0–19%) 1.50 times (HR=1.50, 95% CI: 1.42–1.59) at a higher risk of hypertensive complications,

and all were statistically significant. In participants with angina in the low adherence group (COC < 1) compared to the high adherence group (COC = 1) the risk of complications was 1.20 times higher (HR=1.20, 95% CI: 0.87–1.65) and statistically significant. In comparison to the excellent medication adherence group (80–100%), the normal group (40–79%) was 1.03 times (HR=1.03, 95% CI: 0.78–1.47), bad group (0–39%) 0.96 times (HR=0.96, 95% CI: 0.67–1.36) at a higher risk of angina complications, and all were not statistically significant.

Image:

Overall hazard ratio according to COC level

	Hazard Ratio				
	Patients	Events (N)	IR per 1000PYR	[a]HR(95% CI)	p-value
COC level					
High	52,179	7,143	15.4	Ref	
Low	50,340	8,142	17.7	**1.14(1.10–1.17)** ***	**<.001**

COC, continuity of care; HR, hazards ratio; CI, confidence interval; IR, Incidence rate; PYR, Person Years at Risk

[a] Adjusted sex, age, insurance type, income, number of visits, number of providers, level of hospital, and CCI Index

***Significance at p < .001; **Significance at p < .01.

Conclusion: In patients with hypertension, a high level of continuity of care and medication adherence for the first 2 years of diagnosis can have a positive effect on preventing medical complications and promoting patients' health. Therefore, effective strategies to improve continuity of care and medication adherence are required. However, in terms of angina, there were some positive effect on preventing medical complications that are not statistically significant. These results indicate that angina is not suitable to the list of ACSCs in Korea and there is a need of developing 'Korean version of ACSCs list' due to its unique nature of the health system in Korea.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-1375

EXPLORING THE RELATIONSHIP BETWEEN CONTINUING MEDICAL EDUCATION AND SUBSEQUENT PHYSICIAN SANCTIONS BY REGULATORY AUTHORITIES IN THE UNITED STATES

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Introduction: When physicians complete the required education and assessment needed for licensure in the United States, medical boards will oversee the licensing process and discipline physicians for incompetent and inappropriate behavior. As part of the disciplinary process, medical boards can issue one or more sanctions depending on the nature of the incident, and these can range from fines to much more severe measures like revoking a physician's right to practice. Continuing Medical Education (CME) may also be required as part of the disciplinary process when physicians are permitted to remain in practice. The purpose of this study is to evaluate if CME required by regulatory authorities serves as an effective remedial tool, as evidenced by reducing the likelihood of physicians receiving additional sanctions.

Methods: A national sample of 4,078 physicians in the United States whose first disciplinary action included probation, licensed restricted or other conditions imposed by regulatory authorities between 2011 and 2015. A multivariate logistic regression model examined whether physicians required to complete CME as part of their disciplinary measures were less likely to relapse and receive additional sanctions within five years.

Results: Of the 4,078 physicians, 36% (n = 1,450) were required to complete CME as part of their disciplinary action, and 35% (n = 1,443) received another sanction within five years. Physicians who were required to complete CME as part of their discipline were less likely to receive additional sanctions (OR = 0.608, 95% CL = 0.522-0.708, $p < 0.001$) within five years compared to disciplined physicians who were not required to complete CME, after accounting for other factors.

Conclusion: This study supports that CME is a helpful remedial action for certain physicians to reduce the risk of disciplinary recidivism. Accounting for other factors, disciplined physicians who were placed on probation or received conditions against their license were less likely to receive additional sanctions, whereas physicians who received restrictions to their license had an increased likelihood of additional sanctions. This suggests that physicians who receive certain types of discipline are more likely to receive additional

sanctions. When looking at the reasons for sanctions, physicians disciplined for quality issues, supervision concerns, impairment and substance abuse were at increased risk of receiving additional sanctions, even after accounting for other factors. This provides some support that the effectiveness of CME as a remedial tool can be influenced by the nature of the incident prompting the initial sanctions. Last, our study indicates that physicians with specialty board certification had a lower probability of receiving additional sanctions, further supporting the protective effect of higher achievement and ongoing competency in a specialty field on disciplinary recidivism.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1421

NATIONAL LEVEL INITIATIVES AND QUALITY IMPROVEMENT PROGRAMMES TO SUPPORT IMPLEMENTATION OF THE BABY-FRIENDLY HOSPITAL AND COMMUNITY INITIATIVES: RESULTS FROM A SCOPING REVIEW

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Introduction: Globally, breastfeeding rates fall below recommended levels to promote and protect newborn and infant health. The Baby-Friendly Hospital Initiative (BFHI) is a global campaign by the World Health Organization and the United Nations Children's Fund (UNICEF), which promotes best practice to support breastfeeding in maternity services, incorporating 10 steps. The Baby-Friendly Community Initiative (BFCI) grew out of step 10, with a focus on community-based implementation. Most research on BFHI implementation takes places at hospital level. Less is known about national levels factors involved in successful implementation, and about quality improvement (QI) initiatives at national level.

Objectives:

- To identify the national level factors that support and inhibit BFHI/ BFCI implementation.
- To identify if and how national level quality improvement initiatives support BFHI/BFCI implementation.

Methods: We undertook a scoping review according to the Joanna Briggs Institute methodology for scoping reviews. Inclusion criteria followed the Population, Concepts, Contexts approach. All articles were screened by two reviewers, using Covidence software. Data were charted according to: country, study design, setting, study population, BFHI steps, study aim and objectives, description of intervention, summary of results, barriers and enablers to implementation, evidence gaps, and recommendations. Qualitative and quantitative descriptive analyses were undertaken.

Results: A total of 279 articles were included in the review. A sub-group of 14 articles that covered national level implementation and/ or quality improvement initiatives were re-

analysed. Four were from the USA, 2 from Australia, one each from 7 other countries, and one covering multiple countries. Two were about the BFCI and the rest on BFHI. Analysis of factors that support and inhibit effective implementation included visible national leadership by government, demonstrated with legislation, funding and policy; having a national body with responsibility for implementation; having financial support for hospitals and social welfare incentives for women. One example of a national quality improvement collaborative across 90 hospitals in the United States was found to be effective in growing collaboration beyond the initiative, though challenges were faced with QI methodology, even amongst those familiar with it. Challenges related to national capacity to support re-accreditation of facilities and lack of consistent leadership.

Conclusion: National level leadership that is visible and backed up by action is the most important facilitator of successful implementation of the BFHI. This may also apply to other public health initiatives.

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ISQUA2023-ABS-1430

COMPUTERIZED CLINICAL DECISION SUPPORT SYSTEM TO ADHERE TO PRE-PRESCRIPTION EXAMINATIONS FOR HIGH-RISK DRUGS

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Introduction: Pre-prescription examinations are recommended to prevent severe adverse drug events for high-risk drugs, but such examinations are often missed. To improve the ordering process of such examinations, we investigated the effectiveness of a clinical decision support system (CDSS) that facilitated ordering pre-prescription examinations for high-risk drugs in an outpatient setting.

Methods: We conducted a prospective cohort study at a tertiary care teaching hospital before and after the activation of a CDSS. The observation period was one year (phase 1: October 2017-September 2018) before activation and the following one year (phase 2: October 2018-September 2019) after activation of the CDSS. The CDSS automatically provided alerts and direct transfer to order liver function tests for vildagliptin, thyroid function tests for immune checkpoint inhibitors (ICIs) and multikinase inhibitors (MKIs), and a slit-lamp examination of the eyes for oral amiodarone when outpatients were prescribed the drugs but not examined for a fixed period. We measured the number of alerts and the orders for examinations. The alerts were not displayed but collected as potential alerts during phase 1, and the alerts were displayed during phase 2. The proportions of alerts and examinations were compared between phase 1 and phase 2 in each drug cohort using chi-squared tests.

This study was approved by the Institutional Review Boards of Hyogo Medical University and Shimane Prefectural Central Hospital.

Results: During the study period, vildagliptin were prescribed to 330 patients with 1701 prescriptions in phase 1 and 307 patients with 1668 prescriptions in phase 2, ICIs or MKIs were prescribed to 20 patients with 114 prescriptions in phase 1 and 19 patients with 115 prescriptions in phase 2, and oral amiodarone were prescribed to 72 patients with 451 prescriptions in phase 1 and 66 patients with 398 prescriptions in phase 2. The baseline characteristics were similar between the phases. In patients prescribed vildagliptin, the proportion of alerts decreased significantly (643 [38%] vs 452 [27%], $P<0.0001$), and the proportion of examinations increased significantly (15 [0.9%] vs 67 [4.0%], $P<0.0001$) after

activating the CDSS. In patients prescribed ICIs or MKIs, the proportion of alerts decreased significantly (49 [43%] vs 13 [11%], *P*<0.0001), and the proportion of examinations increased numerically, but not significantly (3 [2.6%] vs 8 [7.0%], *P*=0.13). In patients prescribed oral amiodarone, the proportion of alerts decreased (389 [86%] vs 324 [81%], *P*=0.055), and the proportion of examinations increased (10 [2.2%] and 12 [3.0%], *P*=0.47); neither was significant.

Conclusion: The CDSS that facilitates ordering pre-prescription examinations effectively improved compliance with ordering the examinations which is necessary for patients prescribed high-risk drugs.

Disclosure of interest: None declared.

ISQUA2023-ABS-1454

SUCCESSFUL EXPANSION OF NO-FAULT COMPENSATION SYSTEM FOR CEREBRAL PALSY: A SYSTEM FOR MATERNAL AND NEONATAL SAFETY

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Introduction: Japan Council for Quality Healthcare (JQ) has been running the Japan Obstetric Compensation System for Cerebral Palsy (JOCS-CP) since 2009 in which it provides compensation on "no-fault" basis. It was once expanded to cover more CPs in 2015 through the scientific argument that care for neonate progressed to save neurological outcome. As healthcare for neonate in problematic delivery further improved, JQ again made a decision of expanding the eligibility for profound CPs.

Methods: JOCS-CP is managed under variety of committees' supervisions such committees as steering, case review, investigation, appeal and prevention. However, healthcare insurer, one of the stakeholder, was not included. JQ launched a new committee including the insurer association for overhauling and expanding the system. In the first round of the Overhaul Committee, contentious points are agreed. They are as follows. i) Eligibility including exclusion standard, ii) Term valid for application after birth, iii) Scale of monetary compensation, iv) Insurance premium, v) Strategy to spend surplus, vi) Administrative cost and so on. Review of compensation, investigation, prevention, conflict mitigation and quality improvement in perinatal care are highlighted by the committee members as prerequisite for discussing the contentious points.

Results: Results of argument on the contentious points are described as follows.

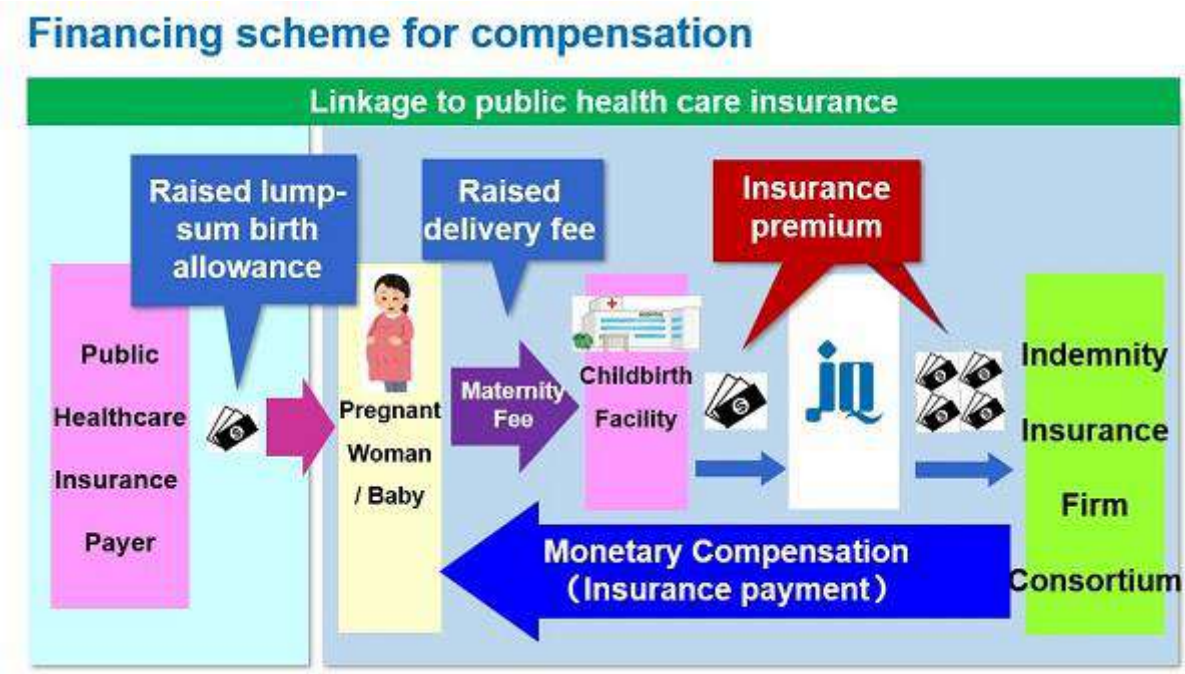
- ***i) Eligibility including exclusion standard:*** The eligibility is expanded in such a way that general criteria covers case-by-case review criteria because clinical outlook of CPs approved by those criteria are proved to be often similar. Exclusion criteria is maintained to eliminate congenital reasons that causes symptoms similar to those of CP.
- ***ii Term valid for application after birth:*** The term, i.e. from six month to five years old, is maintained because diagnosis of cerebral palsy is more difficult in neonates and babies at earlier dates after birth.
- ***iii) Scale of monetary compensation:*** The scale is maintained as much as 240,000 USD.
- ***iv) Insurance premium:*** The price of insurance premium is closely linked to the surplus as described in v). It is reduced from 192 USD (128 USD from the surplus included) to

176 USD (96 USD from the surplus included) per live birth.

v) ***Strategy to spend surplus:*** The contracted insurance consortium reimburse insurance premium in case that surplus take place with eligible number at 300 and beyond annually. The surplus has grown to 500 million USD despite of strategically spending for a part of the premium in 2015 and later. The strategy was revised to spend more i.e. 80 USD compared with previous 64 USD to be a larger part of the premium. With reduction in the total premium price and raised surplus spending, payment by the childbirth facility is reduced to 96 USD as described in iv).

vi) ***Administrative cost:*** The current administrative cost rate is 19.1% (Y2015) compared with 41.8% (FY2015-2019) of averaged rate of General insurance products.

Image:



Conclusion: JQ successfully expanded the compensation system for CPs along with progress in medical science. Inclusion of stakeholders such as healthcare insurer is a key to achieve agreement on the expansion.

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Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1457

TODAY'S PATIENT: A REGISTER-BASED CROSS-SECTIONAL STUDY ON ORGANISING SAME DAY APPOINTMENTS ACROSS SPECIALTIES IN OUTPATIENT CLINICS FOR MULTIMORBID PATIENTS

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Introduction: Many patients with multimorbidity have simultaneous trajectories in several outpatient clinics across medical specialties. It is difficult for patients to navigate care pathways in the current healthcare system. Likewise, patients with multimorbidity present challenges to the healthcare system and the complexity of their care has increased the workload of healthcare professionals. This study investigated the utilisation of healthcare by patients with simultaneous trajectories at two or more outpatient clinics at the University Hospital of Southern Denmark.

Methods: This study was a historic register-based cross-sectional study. We collected data on adult patients managed in the joint-organisational structure "ambulatory square" (nephrology, pulmonology, endocrinology, cardiovascular and wound outpatient clinics) in the period from 01 October, 2021 to 28 February, 2022. Descriptive statistics was used to present the patient groups and examine health care utilisation.

Results: 4,768 patients were included, of which 325 patients (6.8%) were managed in two or more clinics. Patients had a total of 7,569 visits and patients managed in several clinics accounted for 937 visits (13%). Of the 937 visits (100%), 9.4% were coordinated as same-day visits, while 24.2% had 1-30 days between their last visit in one outpatient clinic and their subsequent visit in another.

Conclusion: The findings showed that among patients managed in two or more clinics only about 1 out of 10 visits were coordinated on the same-day but potentially a further 24.2% visits could be coordinated to same-day visits. This information can be used to guide the hospital in identifying multimorbid patients and in tailoring their care to better meet both patient and outpatient clinic needs.

Disclosure of interest: None declared.

Complexity, Emergencies, and Sustainability

ISQUA2023-ABS-1460

THE APPLICATION OF RESILIENCE ASSESSMENT GRID IN HEALTHCARE: A MANAGERIAL TOOL?

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Introduction: The concept of resilient healthcare has become better known among academics, practitioners, leaders, and managers in healthcare with time. However, it is still challenging to apply these concepts in practice to assess the resilient performance of healthcare organisations or systems. The Resilience Assessment Grid (RAG) presents four core potentials that jointly enable resilient performance, i.e., responding, monitoring, learning, and anticipating. The four resilient potentials developed by Erik Hollnagel can can be used as proxy measures to assess the organisation's ability to perform resiliently.

This study aimed to provide an in-depth overview and analysis of how to adapt and apply the RAG in different ways in hospital settings in two different countries (Denmark and Australia). The study presents data on the perspective of leaders, managers and clinicians about the resilient performance of their organisations and will also discuss how RAG may inform effective management decisions.

Methods: We employed a mixed-method study combining qualitative and quantitative methodologies. The study approach had three parts: 1) a modified Delphi method was used to generate a tailored set of RAG questions; 2) the tailored RAG questionnaire was applied in a survey and/or in a collaborative learning format; and 3) results were presented and discussed with the involved stakeholders.

Results: The results from the RAG indicate that the participants were very keen on identifying areas for improvement, especially related to the potential to respond. In Denmark, the findings from the RAG were used to support the re-organisation of outpatient clinics and improve interdisciplinary collaboration. In Australia, RAG was used by managers to engage with staff, develop rapport, and reflect on their work.

Conclusion: In addition to presenting our findings, we would like to generate discussion on what is the most feasible way for adopting the RAG in healthcare settings in the future. How can we use RAG in combination with other well-established methods, techniques, and tools

in healthcare to enhance its impact?

Disclosure of interest: None declared.

ISQUA2023-ABS-1461

TO MEASURE THE IMPACT OF ESCAPE ROOM SIMULATION ACTIVITIES WITH ARSC MODEL ON EDUCATION OF FALL PREVENTION

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Introduction: According to the 2021 patient safety reporting system, the highest number of patient safety incident was fall, 97.3% of patients were affected. Fall-related injuries not only require additional examination or treatment but also affect the length and cost of hospital stay, which may also be medical lawsuits. Effective falls prevention educations for nurses would be helpful. Past studies verified that learning motivation is highly positively correlated with teaching effectiveness. The Attention, Relevance, Confidence, and Satisfaction (ARCS) model was confirmed to be an effective teaching strategy for increasing motivation. In addition, the escape room in health sciences education is growing. All of these studies report positive results in terms of satisfaction, learning, applying knowledge. The aim of the study was to measure the impact of escape room simulation activities with ARCS model on education of fall prevention.

Methods: That study was a one-group pretest-posttest design with 30 participants. An escape room is a game that groups of a maximum of 5-10 people are locked inside a room with a specific objective and a limited time to escape. The researchers used the elderly, pregnant women, and kidney dialysis patients as the protagonists of the escaping stories. In the escape room, the participants learned four points, including: how to use the correct fall assessment tool, safety environment setting, individualized fall prevention Items and fall prevention education. After the participants integrated into the stories, they actually used the fall prevention skills. If they were applied correctly, they can break the level and escape from the escape room. After finished all the escape rooms, the participants anonymously filled out the questionnaire about satisfaction, fall prevention knowledge and ARSC motivation. Analysis was performed to use T test and one way ANOVA.

Results: Participants showed high level of satisfaction with the escape room (4.8/5.0) and ARSC motivation scores (4.7/5.0). Post-test scores about fall prevention knowledge were significantly higher than pre-test (P<.01). Four items of fall prevention knowledge has significantly improved (P <.05), those topics were: 1. what is the main function of hip lifting exercise? 6. Which of the following is the correct sequence for standing up from the toilet using a four-legged cane? 7. What is the fall assessment tool for pregnant women? 10. Should the following events not be reported as falls? Participants aged 30-40 had

significantly lower self-confidence motivation in learning the escape room (P<.05), and those with 1-5 years of working experience believed that the escape room was related to themselves and had higher motivation (P<.05).

Conclusion: Although the designers spend a lot of time to design the escape rooms, it can get extremely positive feedback from the participants. After the teaching intervention, the post-test scores improved significantly, which improved the participants' knowledge. There may be other variables that affect learning motivation but were not collected in the study. Using the existing conclusions, we can consider designing motivating teaching methods for different type groups.

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Coproduction with staff and service users

ISQUA2023-ABS-1487

THE NEXT GENERATION LEARNING HEALTH SYSTEM FOR MULTIPLE SCLEROSIS (NEXT-GEN MS): USING PATIENT REPORTED DATA TO IMPROVE MS CARE AND OUTCOMES

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Introduction: Next-Gen MS is a hybrid improvement-implementation research collaborative influenced and informed by pilot foundational work conducted by the Multiple Sclerosis Continuous Quality Improvement Collaborative (MS-CQI). Next-Gen MS is the first sub-study of the MS-LINK™ Outcomes Study and is the first randomized multi-center study of the use of feed-forward patient reported outcomes (PROs) to inform MS clinical care and context-specific system-level quality improvement (QI) interventions. We hypothesize that participating sites randomized to intervention (PRO data + QI) will have significantly higher quality of life (HR-QoL) scores and reduced functional progression (via PDDS) compared to "usual care" control sites. We will also explore the associations between PROs and clinical measures (collected from electronic health records).

Methods: Eight (8) MS-LINK sites will participate in Next-Gen MS over 3 years. Approximately 2,000 adults with MS (estimated as no less than 250 per site or "cluster") will be recruited and completed written informed consent. After reaching target recruitment and completing a six month pre-intervention baseline observation period, sites will be cluster-randomized at a 3:1 ratio (intervention vs. control) -- 1500 in the intervention group (PRO + QI) and 500 in the control group (usual care) and will be observed over an 18 month period (with time points at 6, 12, and 18 months). The analysis of HR-QoL will be conducted using a mixed linear regression and Cox proportional hazards modeling. PDDS results will be assessed using a generalized linear regression model. Descriptive and correlational statistics will be used for the exploratory analyses.

Results: Study results are not yet available. This study is currently in recruitment phase.

Conclusion: NEXT-GEN MS will provide new evidence about the use of PRO data in MS care and its application to inform system-level efforts to improve MS care and outcomes.

Disclosure of interest: None declared.

ISQUA2023-ABS-1490

A FRAMEWORK FOR THE BUILT ENVIRONMENT SUPPORTIVE OF RESILIENT PERFORMANCE IN THE CONNECTING AREAS OF AN INTENSIVE CARE UNIT

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Introduction Resilient performance is an emergent property arising from the dynamic interactions between diverse technical, social, and organizational elements of complex systems (1). Health services have long been acknowledged as complex systems that display resilience to cope with both expected and unexpected conditions while maintaining the delivery of the required outputs (2, 3). The built environment (BE) is a key technical element of most health services, as it has a strong impact in the service efficiency, safety, and resilience (4). In particular, connecting areas of Intensive Care Units (c-ICU areas) are workspaces where internal hospital logistics and care delivery take place, supporting or hindering the resilient performance of staff to trade-off between safety and efficiency pressures. **Objective** This study aimed to develop a framework to present the BE design knowledge for resilient performance for internal hospital logistics in the c-ICU areas..

Methods: The development of the knowledge framework followed the stages of a case study in a large teaching hospital in Southern Brazil: (i) Selection and characterization of the service flows and their BE; (ii) Development of BE design knowledge supportive of resilient performance in internal logistics; and (iii) Analysis of the implications of neglecting the proposed knowledge framework. The research project was approved by the hospital ethics committee. Data collection techniques adopted were semi-structured interviews (38 interviewees), observations and walkthroughs (32 visits), and document analysis (RDC-50 (5), a Brazilian regulation for healthcare design). Also, a meeting with hospital staff was undertaken to present the knowledge framework for administrative, engineering, and clinical representatives who had been interviewed during data collection and receive feedback on the clarity and applicability of the findings presented. Data were analysed based on thematic analysis with themes corresponding to the seven design principles for resilient performance from Ransolin et al. (2022) (6). The coding process involved two orders at different abstraction levels representing design prescriptions and practical examples. The internal logistics functions were modelled using Functional Resonance Analysis Method (FRAM), linking the design prescriptions to the precondition aspects of

FRAM functions.

Results: The resulting framework for BE design knowledge for resilient performance in internal hospital logistics comprises seven design prescriptions and 63 practical examples. The BE design prescriptions are: (i) Designing safe, efficient, and flexible routes between hospital units; (ii) Assess the pros and cons of centralisation versus decentralisation of support areas that serve several hospital units; (iii) Giving visibility to flow interferences, obstacles, and risks that may compromise safety, efficiency, and flexibility; (iv) Use visual management for the identification of spaces, resources, and processes; (v) Provide slack resources to cope with disruptions; (vi) Design for the prevention of infections and contamination; and (vii) Use technologies supportive of safe, efficient, and flexible workflows The structure encompasses 11 functions performed in the c-ICU areas and distributed according to the transportation of people and supplies. FRAM model helped discuss the consequences of neglecting the knowledge framework in a scenario in which the neglecting of design prescriptions was identified as variability in the outputs of FRAM functions

Conclusion: The framework is original in the context of hospital connecting areas, bridging a gap between internal logistics and architecture by making BE implications explicit. Thus, the study contributed to the meso level of resilient performance at the hospital level and offered detailed guidance to both BE and logistics designers. The framework is available to assist hospital planners in future design and remodeling of hospital connecting areas to ensure that they support resilient performance.

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ISQUA2023-ABS-1491

DEVELOPMENT AND ASSESSMENT OF AN ASSISTIVE TECHNOLOGY CURRICULUM TO STRENGTHEN MEDICAL PROFESSIONALISM IN OCCUPATIONAL THERAPY

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Introduction: Assistive technology (AT) is a unique approach for occupational therapists among intervention services. It is strongly recommended to advance a workforce ready for AT practice to enhance occupational therapists' confidence and competence to deliver AT service and ensure patient safety and service quality. This study aims to develop a practice-based Assistive Technology curriculum that would enhance the medical professionalism of assistive technology services in occupational therapy. And utilize the Kirkpatrick Model as a curriculum evaluation framework to evaluate the effectiveness of the curriculum.

Methods: A needs assessment was conducted to understand the knowledge gaps in AT service among occupational therapy students. Therefore, perceived the usefulness of a practice-based curriculum focusing on practical experience to strengthen medical professionalism. An 18-week practice-based AT curriculum was developed, combining four-week lecture courses, 10-week AT-making workshops, and a four-week simulation examination for occupational therapy students to gain experience with AT production and enhance their medical professionalism. The measures in the simulation sessions used the multidimensional perspectives checklist (MPC), which is a Likert scale of 0-5 from "none" to "mastery." to evaluate and assess the changes in medical professionalism.

Between 2020 and 2022, 40 first-year occupational therapy students took part in the AT curriculum. This study obtained ethical approval from Chung Shan Medical University Hospital (project no. CS1-20130). Data collection was from the Pre- and post-curriculum assessments of MPC, participants' writing feedback survey, and their reflection on the AT curriculum. Data were analyzed using IBM SPSS statistics 23. Compute descriptive statistics, including the mean and standard deviation (SD) for MPC scores. The content validity ratio (CVR) was calculated to assess the level of consensus to explore expert validity for the MPC. The reliability for the MPC uses Cronbach's α to calculate each subscale and total scale. The standard-setting method used the borderline-group method to determine the cutoff scores for the simulation examination. The achievement of medical professionalism was examined

with a paired t-test.

Results: The psychometrics of MPC was examined, and the CVR for MPC expert validity was 0.982, indicating a high degree of consensus among the experts. The Cronbach's α for the MPC was 0.954, and the high reliability of MPC resulted from the fact that each subscale had several items that mentioned the same competence requirements as another subscale.

The participants reported high satisfaction scores. The post-MPC passing rate was 95% (n=38). After the AT curriculum, therapists and patients rated the participants more competent. In the therapist sub-scale, the mean score (SD) in pre-post assessments were 19.75(6.91), 39.75(1.69), respectively ($p < .000$). Moreover, in the patient sub-scale were 27.20(7.48), 35.35(1.46), respectively ($p < .000$). Therapists and patients were overall satisfied with participants AT service after curriculum. The mean MPC score for the post-assessment was 206.49(SD=20.05), compared to 158.61, SD=20.15 for the pre-assessment. Participants demonstrated higher levels of medical professionalism after taking the AT curriculum ($t(39) = 16.45$, $p = .000$).

Conclusion: The development of an AT curriculum in occupational therapy was well accepted and can result in increased medical professionalism. This may improve patient satisfaction with AT service in occupational therapy.

Disclosure of interest: None declared.

ISQUA2023-ABS-1532

DIAGNOSTIC ACCURACY AND PHOTOGRAPHIC QUALITY OF INPATIENT TELEDERMATOLOGY DURING THE COVID-19 PANDEMIC IN SINGAPORE

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Introduction: Since the COVID-19 pandemic, Teledermatology has been used to review hospitalized patients while reducing risk transmission through face-to-face contact. National University Hospital, Singapore, Dermatology department utilized Store-and-Forward Teledermatology as default to review inpatients referrals. A retrospective cross-sectional study was performed in 2020 to review the diagnostic accuracy and photographic quality of inpatient Teledermatology and compare these parameters when clinical history and images were obtained by inpatient Dermatology versus non-Dermatology teams.

Methods: All inpatient Teledermatology referrals in 2020 were included. Clinical history and images were obtained by the primary team for isolated patients (pandemic group) and a Dermatology team representative for non-isolated patients (non-pandemic group). These were uploaded into electronic medical records for remote review by the Dermatology team. Images in the pandemic group were obtained with smartphone cameras. Images in the non-pandemic group were obtained with a combination of smartphone and point-and-shoot cameras. Each image was assessed and graded based on attributes in 3 domains (Photographic Views, Image properties and Image resolution) using a previously unvalidated grading criteria. In the photographic view domain, attributes such as the number of images provided, type of views (overall, regional, close-up, side, unaffected side) were recorded. In the image property domain, attributes such as the degree of exposure, focus/sharpness, appropriateness of white balance, degree of noise correction and use of camera flash were recorded. Images that were well-exposed, in focus, had acceptable noise correction, did not use camera flash and had appropriate white balance were considered as having favourable image properties (“Good”). If an image possessed unfavourable exposure, focus, noise correction or used camera flash, it was secondarily graded depending on whether the texture of the imaged rash was preserved. (“Acceptable” if texture was preserved, “Poor” if texture was not preserved.) Diagnosis at the first remote, last inpatient and first outpatient consultations were compared.

Results: 182 referrals and 999 images were included. The pandemic group had 24 referrals and 133 images and the non-pandemic group had 158 referrals and 866 images. Overall

diagnosis revision rate was 3.8% (n=7). Revisions were all from the non-pandemic group. 3(1.9%) were after further investigations (laboratory or histological) resulted or drug charts were provided, 2(1.3%) followed changes in morphology of the initial rash on subsequent reviews. Only 2(1.3%) diagnoses were revised following a physical review. Overall photographic grading was “Good” in 952(95.3%), “Acceptable” in 28(2.8%) and “Poor” in 19(1.9%) images. 159(15.9%) images were of poor resolution. No differences were seen when comparing types of photographic views provided and properties of images between groups. Images taken by Dermatology teams were less often of poor resolution (OR 0.54, 95%CI: 0.35-0.84, p-value 0.003).

Conclusion: Inpatient Teledermatology showed good diagnostic accuracy. Untrained physician photographers, dermatologically trained or not, can still obtain images of sufficient quality needed for accurate diagnosis.

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ISQUA2023-ABS-1542

SYSTEMIC ENHANCEMENT EFFORT TO ENHANCE FALL PREVENTION FOR PSYCHIATRIC INPATIENTS

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Introduction: Prevalence of fall is higher in psychiatric inpatient settings than general settings due to reasons including psychotropic medications' side-effects and impaired cognitive function. Fall could cause adverse psychological impacts and serious injuries to patients including fractures. As estimated by a local paper, care of hip fractures cost HK $511 million for Hospital Authority in 2020. In Department of Psychiatry at Tai Po Hospital, there was an urgent need to reduce high number of fall incidents (32 in 2019; 37 in 2020). Based on 4M1E principle (Man, Mechanism, Material, Method, Environment), a series of systemic fall prevention (FP) enhancement actions were started in 2020.

Methods: Objectives: Minimize 1) fall incidents; 2) fall-related fractures.

Man: Organized two identical 2-day training workshops with multi-disciplinary involvement to nurses in April and May 2021 to enhance FP evidence-based knowledge (e.g., fall risk assessment skills and psychiatric patients' specific risk factors of fall); revised FP training content for nursing graduates. Mechanism: Regularized fall incidents and FP measures reporting in weekly nursing managers' meeting; designated fall representatives for each ward to support FP measures and skills enhancement; enriched mechanism for post-fall environmental visit and fall incidents review. Material: Promoted utilization of FP and injury prevention equipment (e.g., wireless fall alarm mats, protective helmets); refined fall alert signage which included number of assistant(s) recommended for mobilization. Method: Enhanced assisted walking and controlled landing techniques via hands-on training sessions conducted to wards, which were completed in September 2021. Environment: Implemented environmental scan per shift by supporting staff (supervised by nurse-in-charge) to ensure FP measures are in order; refined bed assignment strategies and incorporated Modified functional ambulatory category (MFAC) findings. Evaluation: One-year period pre- and post- comparison (October 2020 – September 2021 vs October 2021 – September 2022) regarding number of fall incidents, fall incident rate and fall-related fracture cases.

Results: The number of fall incidents successfully dropped 22% from 27 to 21 and fall incident rate was reduced from 0.24 to 0.21. Further, fall-related fracture cases were

reduced from 6 to 0.

Conclusion: Falls are multifactorial accidents and therefore systemic improvement actions are needed to address multiple modifiable risk factors. All of aforementioned 4M1E management strategies are important, but to achieve positive and sustainable FP outcomes, the most crucial fuel would be collective cultural change among healthcare staff.

Disclosure of interest: None declared.

ISQUA2023-ABS-1545

PROACTIVE TOILETING TRAINING PROGRAMME IN PSYCHOGERIATRIC WARD FOR FALL REDUCTION

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Introduction: Patient fall is a safety concern in hospital that resulting in functional disability with longer hospitalization. Despite different fall preventive measures implemented but there is no specific intervention related to safe practice of patient toileting [1]. Toilet-related activities continued to contribute high fall incident and injury with odds ratio 2.2 for fracture [2]. 88% toilet-related falls happened at night are related to patients mobilized without the recommended level of assistance [3, 5]. In our department, there was 54.1% fall incident related to patients with age ≥ 65 in 2020 in which most of them were involved toilet-related activities. A proactive toilet training programme including escorting patients to toilet by trained staff with purposeful toilet schedule was conducted in psychogeriatric wards for reducing toilet-related fall. The four objectives of the programme are including 1) to establish toilet schedule for patients to meet their elimination need 2) to preserve patient's dignity during toileting 3) to promote safe toileting at night for fall risk patients and 4) to enhance staff's knowledge and skills in assisting toileting for fall risk patients.

Methods: Proactive Toileting Training Programme (PTTP) aimed at promoting safe toileting practice to patients with fall risk. Target participants are including 1) walk unaided with fall risk 2) walk with one assistant under supervision 3) deterioration of mental & physical condition. Purposeful toilet rounding was performed for target participants before napkin round for dependent patients to meet their elimination needs. Knowledge and skill transfer (arm reach length assistance and escorting skill) in form of training workshop was provided to staff. Staff were trained to conduct an encouraging statement to prompt patients for safe toileting in order to ensure privacy and dignity. Poster of PTTP was designed and displayed in clinical area for patients. Post intervention staff questionnaire was done to evaluate the effectiveness of PTTP.

Results: The total fall incident rate was decreased from 0.27 to 0.19 after 12 months PTTP implementation. Toilet-related fall incident was decreased from 7 to 0 that was significantly decreased by 100% when compared data 12 months before PTTP. Post-questionnaire was done among staff with over 95% staff reflected that PTTP increased their safety awareness and alertness on patient toileting. Furthermore, over 95% staff reflected that PTTP

increased their understandings towards patient's toileting needs.

Conclusion: As a result, PTTP was effective in reducing toilet-related fall incident and should be integrated into existing nursing practice.

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ISQUA2023-ABS-1559

EMPOWERING PATIENT SAFETY & QUALITY IMPROVEMENT LEADERSHIP IN ASIA-PACIFIC - THE GLOBAL ACTION FOR LEADERS & LEARNING ORGANISATIONS ON PATIENT SAFETY

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Introduction: To guide the Asia-Pacific region patient safety and quality improvement (PSQI) leaders in advancing the World Health Organisation (WHO) Global Patient Safety Action Plan (GPSAP), the Global Action for Leaders and Learning Organisation on Patient Safety (GALLOPS) was established. The aim of this abstract is to share the implementation and evaluation of GALLOPS.

Methods: The GALLOPS curriculum and assessment tool were developed by mapping it to the WHO GPSAP Framework for Action. The implementation was guided by the logic model where the resources, activities, outputs in achieving the short, medium, and long-term goals were carefully examined. A series of virtual and on-site engagements was carried out to build synergy in driving the global action on patient safety in the region. The collaborative effort between partners of the initiative was also adopted and evaluated as critical practice in the design and implementation of GALLOPS.

Results: Through strong partnership between IPSQ and SingHealth International Collaboration Office, more than 200 overseas PSQI leaders from 15 countries participated in Part 1 and 2 of GALLOPS.

Participants generally agreed that GALLOPS was well-organised. Part 1 evaluation (n=125) was positive. 124 (99.2%) participants agreed that the programme had achieved its stated objectives, 122 (97.6%) had gained improved knowledge, and 121 (96.8%) of them would recommend GALLOPS to others. Part 2 saw 71 out of 90 (78.9%) participants responded to the programme evaluation where all agreed that GALLOPS was well-organised and that they would recommend GALLOPS to others. The sharing of best practices where participants get to learn from shared PSQI journey on topics such as patient safety culture, importance of no blame culture to improve quality of care incident reporting, patient engagement and advocacy, risk management, staff motivation and collaboration were some key takeaways from the participants.

The GALLOPS Ambassador Network was formed to encourage PSQI leaders to share

good practices and areas of improvement through the use of the GPSAP assessment tool. In the preliminary baseline assessment results from 7 countries, the overall mean scores of all self-assessed strategic objectives (SOs) for Countries A (4.30), B (3.66), C (3.20), D (3.09), E (2.48), F (2.12), and G (1.94). SO3 (Safety of clinical processes) had the highest mean of 3.53, while SO6 (Information and research) and SO4 (Patient and family engagement) had the lowest average of 2.88 and 2.67 respectively. This formed the baseline of self-assessed patient safety landscape in Asia-Pacific. It revealed not only differences in patient safety practices across Asia-Pacific countries, but also across the SOs. The assessment tool had presented opportunities for improving patient safety and reducing harm and risks in patient care.

Conclusion: GALLOPS has achieved its short term objectives in building awareness and knowledge on GPSAP through the sharing of evidence-based patient safety practices and tools across learning sites in Asia-Pacific. The middle to longer term objectives in driving cultural shifts for social economic and community impacts such as reduced prolonged hospitalization of patients, reduction in avoidable patient harms and enhanced level of gained trust amongst patients towards hospitals in the region, need to be continuously driven by committed and empowered PSQI leadership.

Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-1562

PROCESS RE-ENGINEERING AND PATIENT-CENTERED STRATEGIES IMPROVE AMBULATORY CARE: AN EMPIRICAL STUDY CONDUCTED IN TAIWAN

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Introduction: Dermatology departments (DDs) are key profit centers for hospitals. The efficiency of DDs can be optimized to ensure that patients receive complete consultation, photo therapy, cauterization/laser therapy, and self-pay service in a single visit. Because of unorganized medical services and complex patient flow, the treatment process in DDs is often convoluted, which results in high rates of errors and patient complaints. To improve the quality of ambulatory care and to effectively address disputes and exceptional circumstances, we formed a quality improvement task force for the analysis of processes in our hospital's DD.

Methods: Relevant professionals were recruited for workplace planning and future need assessment from October 2021 to December 2022. Team resource management strategies were devised to improve the quality of medical services provided by the DD. We sought to remodel the clinic and optimize patient flow. First, root cause analysis was performed to investigate adverse events and patient complaints; action plans were developed for quality improvement. Second, architects renovated the clinic on the basis of human factors engineering. Third, surgical procedures were standardized, and surgical records, including diagnostic codes, surgery items, histopathological data, relevant documents, and medical bills, were digitized. Finally, to improve teamwork, we redesigned standard surgical procedures, standardized surgical equipment, and trained staff. A Likert-type scale and *t* tests were used to evaluate the levels of patient satisfaction and medical staff acceptance. Waiting time and adverse events were assessed to evaluate the effectiveness of process reengineering.

Results: By focusing on patient safety, we evaluated key performance indicators and conducted complete audits of 396 records of dermatological surgeries performed between October and December 2022. The audits were performed to ensure a 100% correct rate with no adverse events. By remodeling the ambulatory care unit, patient's walking distance was shortened, and waiting time was reduced from 12 to 1 min. Patients were satisfied the new clinic and smooth processes, and the environment score on the annual patient experience survey increased from 88 to 98 points in 2022 ($p < 0.01$). The medical staff,

including physicians, explored the root causes of cumbersome workflow to identify the system limitations. This activity not only reduced patient waiting times for surgery but also improved teamwork. The acceptance level of the medical staff increased from 50.0 to 83.3 points in 2022 ($p < 0.01$). Ultimately, ambulatory care quality and patient safety improved after process re-engineering.

Conclusion: The implementation of patient-centered strategies effectively improved medical services, perceived care quality, and patient safety. Thus, we developed multifaceted expedients for upgrading ambulatory services.

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Coproduction with Staff and Service Users

ISQUA2023-ABS-1617

PATIENT-CLINICIAN CO-CONSTRUCTION IN COMPULSORY COMMUNITY TREATMENT: GUIDELINES AND TOOLS

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Introduction: In France, Compulsory community treatment (CCT) can be prescribed for patients with severe mental illness, and discharged from compulsory inpatient care. If the use of CCT is to be justified by a medical decision in France, there is variability in professional practice and care interruptions are common. Therapeutics alliance was identified as a key issue to improve treatment adherence and prevent patient relapses. Although French National Authority for Health (HAS) developed the first national guidelines and three associated tools to promote co-decision and co-contruction between Health care professionals (HCP) and patients.

Methods:

- The first step involved a scoping phase to identify key issues through a literature analysis and stakeholder consultation.
- The second phase included a multidisciplinary work group to write proposals. The testing of tools intended to facilitate recommendation implementation.
- The third step consisted of a stakeholder review.

Results: National guidelines set ten priority objectives to improve patient-centered approach and quality of care. Therapeutics alliance was the key issue to improving treatment adherence and patient-professionals partnership allowing a better patient implication in care and a co-preventive approach to reduce relapses. Three tools involving patient were developed:

- Patient Tracer method allows to cross patient and HCP points of view in order to improve the quality of care.
- Patient leaflet is used by patients who need to be better informed about their care and their rights; It encourages care involvement during their treatment.
- A preventive tool is discussed between teams and patients to prevent relapses and to take into accompt patient experience and needs.

Conclusion: Through this combined approach (guidelines and associated tools), HAS intends

to improve co-decision, therapeutics alliance, and consequently better treatment adherence. These tools make patient experience cross with medical knowledge, to improve patient centered care.

Such guidelines are to be taken into account by the French accreditation process of healthcare organizations. The patient tracer method allows front line teams to better understand patients' point of view and needs, to promote teamwork and patient implication which contribute to the quality of care. The use of these tools could be assessed through the accreditation process.

Disclosure of interest: None declared.

ISQUA2023-ABS-1622

VALIDATION OF THE HOSPITAL SURVEY ON PATIENT SAFETY CULTURE IN 5 LATIN AMERICAN COUNTRIES

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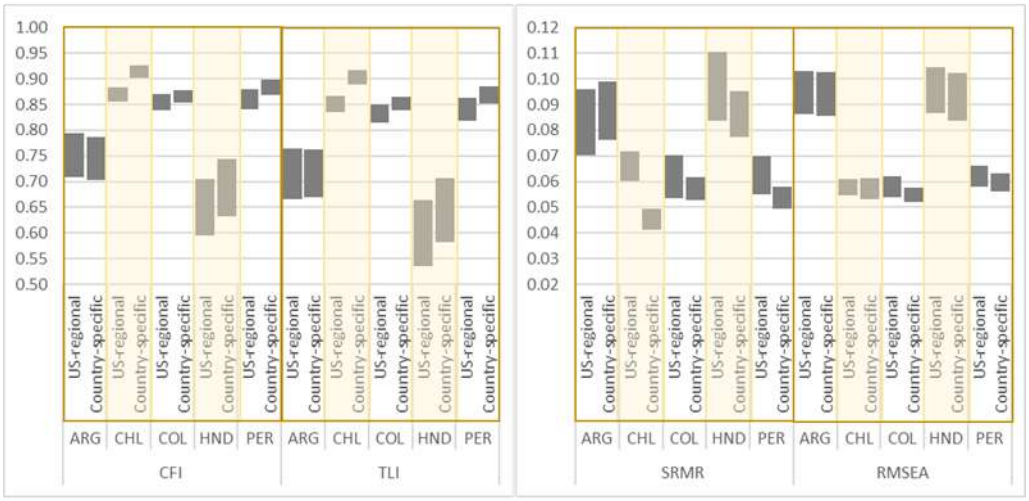
Introduction: Patient safety culture is a key factor that underlies unsafe care globally. Measuring it to identify gaps and interventions to strengthen safety culture is a strategic objective of the WHO global patient safety action plan 2021-2030. However, assessing patient safety culture globally requires a balance between validity and usability. While a country-specific instrument could achieve the highest validity, it could result impractical as a learning system if it cannot be comparable to similar countries. The goal of this study was to compare the psychometric properties of a country-specific instrument with a regional instrument for Latin American countries.

Methods: We used the Healthcare Management Americas (HMA) survey on patient safety culture, an instrument based on the first version of the Agency for Healthcare Research and Quality's Hospital Survey on Patient Safety Culture (HSOPS). The HMA survey used a revised Spanish version of HSOPS, with a small set of questions relevant to the Latin American healthcare system. The instrument was applied between 2018 and 2020, before the COVID-19 pandemic, in 5 Latin American countries: Argentina, Chile, Colombia, Peru, and Honduras. It included 33 hospitals representing a total of 5,855 hospital staff. We used exploratory factor analyses to define the country-specific model. We assessed the gains in terms of internal reliability and construct validity of the country-specific model compared to the US-Spanish regional model (HMA survey). Bootstrap methods were used to test for differences in construct validity between both models. Mplus 8.5 was used for the exploratory factor analyses, and Stata v17 was used for the Bootstrap confirmatory factor analyses.

Results: No statistically significant differences were observed between the country-specific and the US-Spanish regional models in Argentina, Colombia, Peru, and Honduras. In Chile, the difference was statistically significant but small in magnitude. Figure 1 presents the confirmatory factor analysis results. It shows the 95% confidence intervals of the fit estimates of both models, per country. Our reliability analysis showed important issues with the Cronbach's Alpha estimates of the items related to the staffing composite (items A5, A7, A14 in HSOPS version 1), and other negatively worded items (items A10, A16, and B3 in HSOPS version 1).

Image:

Figure 1. Bootstrap 95% Confidence Intervals of Confirmatory Factor Analyses Model Fit Indices



CFI=Comparative Fit Index. TLI=Tucker-Lewis Index. SRMR=Root Mean Square Error. SRMR=Standardized Root Mean Residual. ARG=Argentina (n=222). CHL=Chile (n=2,122). COL=Colombia (n=1,786). HND=Honduras (n=230). PER=Peru (n=874).

Conclusion: This is the first time a patient safety culture instrument has been applied simultaneously in coordination with several hospitals from multiple countries. Our results are consistent with other country-specific studies suggesting a different number of composites and reduced reliability of items compared to the U.S. model. However, we show that the gains in the validity of country-specific models are small in magnitude and statistically significant. Our study favors the idea of a common regional instrument that can generate more benefits in terms of usability, comparability, and ultimately, regional learning to improve patient safety. There are important lessons to improve the HMA survey for the second version of HSOPS, including better acculturation of the instrument to the Latin American region, and a critical review of the reliability and construction of problematic items. We call for a regional effort and initiative to reduce the cost of assessing the cost of patient safety culture in individual public and private hospitals and promote a learning system backed by the transparency of regional benchmark data.

Disclosure of interest: None declared.

ISQUA2023-ABS-1624

EXPLORATORY ANALYSIS OF FIXATION PHENOMENON IN THE OPERATING ROOM

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Introduction: Physicians involved in the French physician and medical team accreditation program are required to report care-related adverse events. Root cause analysis of these adverse events reveal that some relate to cognitive biases. The French National Authority for Health and the physician accreditation bodies have therefore chosen to study cognitive biases, and more specifically fixation phenomenon; a concept drawn from the aeronautical industry. It describes a situation in which a health professional's attention is so highly focused on a specific goal that warning signals that should normally lead to preventative measures are entirely missed, which may subsequently result in an adverse event.

Methods: In 2021, a quantitative and qualitative retrospective analysis of care-related adverse events associated with fixation phenomenon was carried out on reports submitted between 2016 and 2021 within the physician accreditation program. In parallel, an online survey was conducted among anaesthesiologists, hepato-gastroenterologists, neurosurgeons, thoracic and cardiovascular, visceral, and maxillofacial surgeons, and urologists to quantify the prevalence of fixation errors in their practice.

Results: Seventy-six care-related adverse events associated with fixation phenomenon were identified. Their analysis showed that they were always associated with other cognitive biases, such as "anchoring bias" (n = 66/76) or "search satisficing" (n = 61/76). When physicians were able to escape fixation (n = 57/76), the most efficient measures taken were re-evaluation of the situation (n = 40/76) and colleague referral (n = 27/76). While a majority of these adverse events were avoidable to potentially avoidable (n = 71/76) according to physician opinion, more than one-third resulted in severe harm or death (n = 28/76). A total of 1848 physicians responded to the practice survey. The majority of survey respondents had experienced or witnessed fixation (n = 1474/1848). The main factors identified as contributing to fixation were procedure gone wrong (n = 1461/1848), stress related to the procedure or an unusual situation (n = 1379/1848), and fatigue (n = 1262/1848). Most physicians who experienced fixation were able to overcome it (n = 1046/1215): most often as a result of a colleague called in for support (n = 593/1046) or as a result of measures taken by the team on site (n = 279/1046).

Conclusion: Although relatively unknown to healthcare professionals, fixation phenomenon

and associated cognitive biases contribute to many serious and avoidable care-related adverse events. The work performed by the French National Authority for Health and the physician accreditation bodies served in identifying actions to counteract this bias. In 2023, this work will result in a “Patient Safety Solution”, a practical tool for healthcare professionals designed to raise awareness and offer solutions to avoid, detect or overcome fixation and limit number and severity of associated care-related adverse events.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1629

CHARACTERIZING HEALTHCARE WORKFORCE DEMANDS AND RESPONSE DURING COVID-19: PERSPECTIVES OF INFECTION CONTROL PROFESSIONALS IN SOUTH KOREA

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Introduction: The pandemic has put healthcare workers (HCWs) and services under strain. There is a lack of information on the working conditions of HCWs during COVID-19. It is important to learn about the healthcare workforce and essential health services during this period. So, this study aimed to explore the vulnerability of HCWs responding to the COVID-19 pandemic in South Korea.

Methods: This is a cross-sectional, survey-based study of HCWs in healthcare facilities (22 long-term care hospitals (LTCHs) and 36 acute hospitals). An online survey was conducted from Aug to Nov 2022. The responses of 58 infection control professionals (ICPs) were included in the final dataset. All data were analyzed using SPSS. Descriptive statistics, including interquartile range (IQR), Chi-square test, and Fisher's exact test were used. This study was approved by the Kyung Hee University Institutional Ethics Committee. Informed consent was obtained from all participants.

Results: Nurses (89.7%) were ranked to be the most in-demand job, followed by personal care aides (PCAs), and nurse assistants. There were pattern differences in the list of the top three HCWs experiencing shortage by the type of hospital. Acute hospitals experienced higher shortages of doctors than LTCHs, while LTCHs underwent higher shortages of PCAs than acute hospitals. HCWs tended to have varied turnover rates, with a median turnover rate (IQR) of 10.0% (5.25–30.00) for nurses, 10.0% (5.00–27.50) for nurse assistants, 3.50% (0.00-10.00) for doctors and 20.0% (10.00–45.00) for PCAs, respectively. The average number of training days differed by profession. HCWs that required the two longest training (days) were clinical laboratory technologists (46.00±55.13) and nurses (27.52±26.30). Occupations that were the most difficult to secure skilled HCWs were PCAs and nurses for LTCHs and nurses for acute hospitals.

Regarding increased/additional work, tasks were related to the Infection Control and Prevention Department (e.g., education) (n=51), infection control management for visitors (n=53), COVID-19 testing (n=21), communication with health authorities (e.g., documentation) (n=21), plans for patients (n=19), plans for addressing symptomatic staff

(n=13), resources/supply management (n=9), vaccination (n=8), cleaning and disinfection (n=8), screening clinic (n=6), and handling complaints (n=3). For the protection of HCWs, only 24.1% had the criteria for identifying vulnerable staff, and 20.7% had workplace policies to address employee declination of vaccination.

During the period, 55.2% received financial compensation from the government, but others (39.7%) did not. Only 8.6% tracked operational indicators, including the number of inpatients, the number of new admission inpatients, and the bed occupancy rate. Essential health services to be maintained included inpatient wards (54.2%), outpatient centers (18.1%), and operation rooms (8.4%). To prevent discontinuity, 53.4% designated alternative staff to be delegated; 27.6% had alternative plans.

Conclusion: Amid COVID-19, HCWs play a key role in providing care and performing additional tasks. Hospitals struggle with a shortage of HCWs, especially nursing staff. There is, therefore, a need to prepare a workforce management plan and provision essential services thoroughly.

Acknowledgements

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Disclosure of interest: None declared.

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IMPROVING THE COMPLETION RATE OF DISCHARGE PLANNING SERVICES FOR PATIENTS WITH HEART FAILURE

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Introduction: Patients who lack of self-care ability with heart failure are vulnerable to acute exacerbation and admission to hospital. Although our hospital has established standard operating procedure for discharge, the medical staff often neglect the need of patients who need discharge planning. In this single medical center, we completed the discharge planning and self-care education for 20% and 40% of heart failure patients. The re-admission rate within 14 days was 3.19%. After auditing the process, some problems were found as below: nurses who were not familiar with the discharge plan was 36.7%; imprecision at filling in the discharge plan screening file which lead to unenrollment was 30%; and the delaying at initiation discharge planning was 20%.

Methods: This project enforces the knowledge of nurses at discharge plan preparations for heart failure through establishing enrollment guidance and flow chart. The details included the checklist for discharge plan for heart failure and the enrollment quick version, which facilitated the nurses to initiate the discharge planning process. The completeness of self-care education for heart failure will be monitored.

Results: It showed that the enrollment rate of heart failure patients in receiving discharge planning in September to November 2022, rose from 20% to 52.6%. The completeness of discharge plan rose from 40% to 71%, and the 14 days re-admission rate decreased from 3.19% to 1.10%. These interventions improve the knowledge of discharge planning at nurses and care quality significantly.

Conclusion: Through the amelioration of the heart failure discharge plan standard operating procedure, the nurses enhanced the evaluation skills and lead to the elevation of completeness rates at discharge plan for heart failure patients.

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ISQUA2023-ABS-1647

HEALTHCARE EXPERIENCE AND SATISFACTION MEASURES IN FACILITY AND POPULATION-BASED SURVEYS IN LATIN AMERICA AND THE CARIBBEAN: A SYSTEMATIC REVIEW

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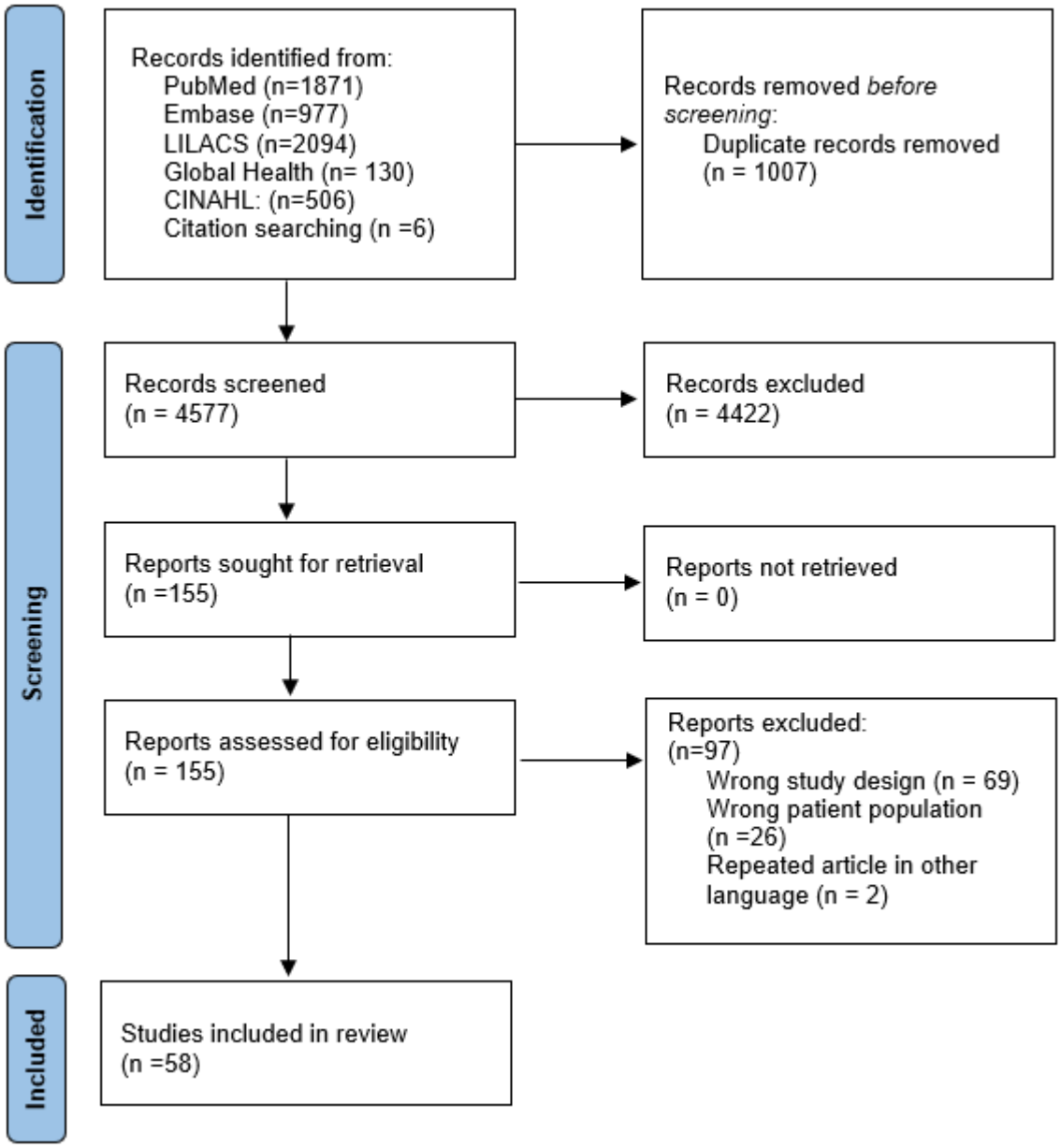
Introduction: High-quality health systems must deliver people-centered care to improve health outcomes and ensure population trust in health services. Social accountability and improvement in people-centered care require appropriate measurement of population perspectives on health services. We conducted a systematic review of population-based assessments in Latin America and the Caribbean (LAC) that include patient-reported experience and satisfaction measures.

Methods: We searched 5 databases for publications on population-based surveys in LAC countries that assessed processes of care and outcomes measures. We included articles whose sample frame was national or multiple subnational regions. The search was not limited by publication type, year, or language. We excluded articles considering health care workers' or policy makers' opinions, and those referring only to health care access and use/non-use, economic benefits, and coverage of health interventions. We extracted measures and classified them by quality construct; we summarized frequency of measure reporting and described study findings on differences in quality ratings by respondent characteristics.

Results: Of the 5584 publications reviewed, 58 articles covering 33 surveys from 12 LAC countries met our inclusion criteria. Most of the articles (86%) were secondary analyses of published data from other surveys, and the majority of surveys identified were from Brazil (N=11). The most common quality constructs reported were Satisfaction (55%), Evidence-based/Effective care (34%), Short wait times (33%), Clear communication (31%) and Ease of use (31%). Satisfaction was correlated with other quality constructs in 15 articles. Ratings of quality constructs and how they were assessed varied widely among the different instruments used, years and geographical settings. Differences in quality ratings by socioeconomic characteristics were found in all the articles; statistically significant differences ($p< 0.05$) by source of care (public vs private) were found in 17 articles.

Image:



Conclusion: Patient-reported experience and satisfaction measures are collected in LAC countries, though in a fragmented and incomplete manner, making it difficult to compare quality ratings across surveys or countries. Quality ratings in LAC countries differ among population subgroups, which underscores the need for equitable quality of healthcare. Periodic, systematic, and thorough measuring efforts are thus demanded in LAC countries, enabling relevant research and policies to be implemented. New instruments can be created, or previous ones could be improved, by revising the experiences recollected in this unique review, enhancing social accountability and the region's leadership.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1648

QUALITY IMPROVEMENT ABOUT TEAM RESOURCES MANAGEMENT AND IN-SITU SIMULATION ON RESUSCITATION TRAINING

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Introduction: According the patient safety reports of our hospital, the most common problems in resuscitation came from the lack of leadership and the failure of team communication. Accordingly, the Center for Quality Management of our hospital initiated “A plan of Team Resource Management about Resuscitation” (TRMR) at five wards of our hospital since March, 2022.

Through team resource management and in-situ simulation, we use the results of the safety attitude and team perception questionnaire to understand the patient safety culture and effectiveness of teamwork improvement in the hospital.

This study will analyze the data of this improvement plan, explore the effects of team resource management and in-situ immersive methods, and further analyze the determinants of effectiveness, which will serve as a basis for improving resuscitation training methods in the future.

Methods: The program has been started since March 2022 and will be continued to October 2022. The members in five wards of Biomedical Hospital were invited. Two lecturers, one physician and one nursing instructor, are responsible for teaching in each ward, and the same group of students will be trained in the first month, and the sixth month.

This study is analyze the data of “A plan of Team Resource Management about Resuscitation”. Outcome evaluation is based on "Safety Attitude Questionnaire scores, SAQ" and “Teamwork Perception Questionnaire scores, TPQ”. The questionnaire is measured by a five-point Likert scale, with 5 points for strongly agreeing, 4 points for agreeing, 3 points for neutral, 2 points for disagreeing, and 1 point for strongly disagreeing. If the item is not applicable to the personal situation, please fill in Not Applicable.

Results: So far 12 sessions have been conducted, with a total of 194 participants (11 physicians, 11 specialist nurses, 8 head nurses, 100 nurses, and 64 other nursing students). Overall satisfaction of participation trainees is above 90 points.

Results of SAQ scores show colleagues have the highest positive proportion in the stress

recognition dimension (79.23%); the lowest positive proportion in the resilience dimension (67.03%). The positive ratio score of the overall SAQ is 73.05%, which is better than the score of 65.17% for colleagues who did not accept this program.

In the part of TPQ, colleagues have the highest positive proportion in the Mutual Support dimension (74.52); the positive proportion in the Team Structure dimension is the lowest (70.65). The positive ratio score of the overall TPQ score is 72.83%.

Image:

Questionnaire	Dimension	Number of questions	Positive proportion of participants in the project	Positive proportion of non-participants in the project
Safety Attitude Questionnaire scores (SAQ)	Team work	6	75.67	71.26
	Safety climate	7	73.50	70.28
	Stress recognition	4	79.23	69.01
	Working condition	4	75.2	62.54
	Perception of management	4	71.37	66.85
	Job satisfaction	5	68.77	64.69
	Resilience	4	67.03	44.78
		34	73.05	65.17
Teamwork Perception Questionnaire scores (TPQ)	Team Structure	5	70.65	-
	Leadership	5	71.29	-
	Situation Monitoring	6	73.92	-
	Mutual Support	5	74.52	-
	Communication	5	73.55	-
		26	72.83	-

Conclusion: A plan of "Team Resource Management about Resuscitation" was initiated to improve ability of team work and leadership of the resuscitation team, which are critical component for the success of a resuscitation. However, the effect of this program needs to be validated by objective evaluation tools and scientific analysis.

This study used patient safety attitude and team perception questionnaires, which have been used as objective tools for evaluation. Through this study, we can understand whether "team resource management and in-situ simulation" can improve the quality of resuscitation through cultivating leadership and teamwork skills.

Disclosure of interest: None declared.

ISQUA2023-ABS-1662

IMPROVING THE MANAGEMENT OF ANTI-THROMBOTIC DRUG ADMINISTRATION IN SURGICAL PATIENTS

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Introduction: Patients undergoing surgery and procedures should discontinue some drugs, including anti-thrombotic drugs, for a certain period because of the risk of bleeding. With the issuance of a patient safety alert for errors in managing anti-thrombotic drug administration preoperatively and postoperatively through the 2020 National Patient Safety Reporting Learning System, the importance of a comprehensive management of anti-thrombotic drug administration preoperatively and postoperatively has emerged. Therefore, this study was aimed at investigating the process of managing anti-thrombotic drugs in patients preoperatively and postoperatively and providing a safe treatment environment by establishing a drug prescription alarm system.

Methods: Three indicators were assessed. Indicator #1 was a reduced surgery cancellation rate by 20% due to the middle stage of taking anti-thrombotic drugs. Indicator #2 was reduced time required to identify current drugs for outpatients scheduled for surgery by 20%. Indicator #3 was reduced average number of carry-on confirmations by 50%. For data collection, the electronic medical records of patients with surgical cancellations were investigated, and the time required to identify the current drugs and the number of confirmations was directly investigated. A cause–effect diagram was used to analyze the root cause, and the improvement plan was derived using the four-block matrix.

First, the procedure for confirming the history of taking anti-thrombotic drugs was improved. A one-stop inquiry system (Health Insurance Review and Assessment Service program service) for anti-thrombotic drug use was introduced in outpatient personal computers in the medical department.

Second, to improve the procedure for resumption of anti-thrombotic drugs, it was supplemented to check whether or not preoperative thrombosis stopped in the preoperative “surgery scheduled status inquiry” screen. In addition, for discontinued patients, a message prescription of “during discontinuation of anti-thrombotic drugs,

resumption decision is required" was automatically generated until postoperative day 2.

Third, the work of confirming the use of outpatient anti-thrombotic drugs was checked. First, orthopedics, urology, and surgical outpatient procedures were checked for whether anti-thrombotic drugs were taken or discontinued, and the results of cardiology cooperation were improved to explain to the patient.

Results: In the follow-up, indicator #1 was 0%, with no surgery cancelled during the investigation period, exceeding the target. Indicator #2 was 3 min, exceeding the goal. Indicator #3 showed that the average number of confirmations of current drugs decreased by 50%, from the previous average of twice to the current average of once, achieving the one-stop service goal.

Conclusion: Through the introduction of the one-stop system, the main improvement in this activity, all indicators showed achieved goals, and the work of checking the current medicine and the time required was significantly reduced. In addition, a resumption alarm system was established to prevent the anti-thrombotic system from being stopped for more than necessary periods after surgery to allow resumption of the anti-thrombotic system at an appropriate time. The one-stop system, which is currently piloting orthopedics, urology, and surgical departments, should be managed and reviewed in the future to be applied in other medical departments.

Disclosure of interest: None declared.

ISQUA2023-ABS-1671

PROVIDING MORE HOLISTIC CARE TO ADULTS LIVING WITH TYPE 2 DIABETES AND SEVERE MENTAL ILLNESS TO ENHANCE HEALTHCARE QUALITY

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Introduction: Adults with type 2 diabetes (T2DM) and severe mental illness (SMI) are more likely to experience barriers in accessing healthcare to improve their quality of life. Achieving parity in adults with SMI (valuing mental health equally with physical health) has been a longstanding problem. Understanding the experiences of those who provide and receive care has become an increasingly popular strategy to address this issue. This study uses observations, individual interviews, and focus groups to:

1. Identify mental health service user and staff perceived barriers and enablers to providing and receiving holistic care for adults living with T2DM and SMI;
2. Identify and describe areas of priority for future quality improvement.

Methods: The study was conducted across two NHS clozapine clinics in London. Service users with a diagnosis of T2DM and SMI and staff were invited to participate. Ethics approval was gained for the study. Three Public and Patient Involvement groups that included members living with T2DM and SMI were consulted during the development of the research proposal. One researcher conducted observations of daily practice in the clinics to gather insights into service user and staff perspectives of care. Field notes of observations in clinic waiting areas, team meetings, and during clinical consultations were taken. Participants were also invited to individual interviews and separate service user and staff focus groups to explore their experiences of care, particularly whether and how different clinical and social needs were addressed. Interview topics were organised around the Theoretical Domains Framework (TDF) to identify factors that affect behaviour. Observational and focus group data were analysed using thematic analysis [1]. The TDF was used as a coding framework for analysing interviews.

Results: Barriers to accessing holistic care at the clozapine clinics included lack of continuity of care between community providers, limited awareness of service users' diabetes needs, confidence in providing diabetes support, and time constraints during consultations to holistically assess service users' needs. Factors reported to contribute to service users' experiencing a more holistic form of care were the quality of therapeutic relationships, clinicians' competency in assessing health risks, and improved communication systems with providers. Priority areas for improvement across the services focused on enhancing

clinicians' diabetes competency, introducing an appointment scheduling system to allow more in-depth assessments, and increasing practical support for service users to remain engaged with their general practitioner. Study findings will be discussed in relation to the TDF domains.

Conclusion: Findings from the study highlight that the services continue to learn and adapt how holistic care is provided to improve accessibility to service users. The recommendations from participants to enhance healthcare quality are relevant for the development of person-centred care that reflects the needs of individuals at a local level. Employing a mixed-methods qualitative study that incorporated the TDF enabled a systematic and comprehensive examination of participants' perceived barriers and enablers to accessing a more holistic form of care.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1681

EFFECTIVENESS OF IMPLEMENTING MODIFIED EARLY WARNING SYSTEM FOR INPATIENT IN GENERAL WARDS OF A MEDICAL CENTER IN TAIWAN

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Introduction: The Modified Early Warning System (MEWS) is a well-validated tool widely used to detect unexpected deterioration of hospitalized patients. This study aimed to assess the effectiveness and impact of implementing MEWS for the inpatients who stayed in the general ward.

Methods: The study was approved by the Research Ethics Committee of Chung Shan Medical University Hospital (No. CS1-22196). Adult inpatients were retrospectively included between Jan. 2017 and Feb. 2022. The primary exclusion criteria were: staying in non-MEWS monitored ward, with planned admission to the intensive care unit (ICU), receiving two or more unplanned ICU admission, and was not discharged due to cure or transfer to outpatient clinic for following treatment. In addition, the MEWS and Rapid Response Team (RRT) were implemented in our hospital in Aug. 2019. Thus, the included inpatients were partitioned into GW and GW_{MEWS} groups by the time point of hospitalization. If the MEWS score ≥ 7 points, a warning message will automatically send to notify the RRT members. While sending the warning was decided by nursing staff when three or more parameters with a score ≥ 1 or a total score ≥ 5. In addition, unplanned ICU admission is defined as the event of an unexpected deterioration. The inpatients of the GW_{MEWS} group were divided into normal and unplanned subgroups to indicate whether an inpatient received an unplanned ICU admission. For the inpatients of the unplanned subgroup, 24 hours before unplanned ICU admission was defined as '*Buffer time*', while the time between being hospitalized and *Buffer time* was defined as '*Too early*'. Thus, the detection performance of MEWS was defined as whether the warning occurred in the *Buffer time*.

Results: A total of 129,039 inpatients were included and composed of 58,106 GW and 71,023 GW_{MEWS}. The numbers of unplanned ICU admissions of GW and GW_{MEWS} were 488 (.84%) and 468 (.66%), indicating that the implementation significantly reduced the

occurrence of unplanned admission to the ICU (p<.0001). Besides, 1,551,525 times MEWS assessments were produced for the GW_{MEWS}. Of which, 1,525,720 were true negative assessed for the normal or *Too early* subgroups, and 3,678 were false negative assessed at *Buffer time*. In contrast, 22,127 times met the criteria for calling RRT. Among them, 1,568 were produced at *Buffer time* (true positive, TP), and the remaining were false positive (FP). As a result, the sensitivity, specificity, positive predicted value, and negative predicted value of MEWS were 29.9%, 98.7%, 7.09%, and 99.76%. Among the TP, 428 times (27.3%) met the criteria for automatically calling RRT, and 1,140 needed the nursing staff's decision to call RRT or not. Of the FP, 17,028 times were required to be excluded to avoid sending false alarms by nursing staff.

Conclusion: Implementing MEWS and RRT combined with the increased monitoring and intervention by nursing staff may have contributed to the reduction in unplanned ICU admissions.

Disclosure of interest: None declared.

ISQUA2023-ABS-1693

BYPASSING THE EMERGENCY DEPARTMENT: USING HUMAN FACTORS AND SYSTEMS THINKING TO IDENTIFY THE CONSEQUENCES OF HOSPITAL ADAPTATION

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Introduction: Hospitals are complex adaptive systems whose ability to provide care is a product of the interactions between the many people, departments and technologies within the hospital system. Adaptations or workarounds used by one department or clinic to circumvent slow processes or other process barriers can inadvertently create functional challenges in other departments. This can trigger an adaptation or workaround in the affected department to cope with the implications of the initial adaptation. Human factors tools and systems thinking offer a means for understanding the implications of adaptations in tightly coupled systems and designing new processes to overcome them. We sought to use these methods to retrospectively review a new Bypass ED model of care implemented to overcome the consequences for the ED of a hospital adaptation to streamline access for surgical patients.

Objectives: This study used the Cognitive Work Analysis Framework (CWA) to develop models of the new ED bypass model of care.

Methods: The new ED bypass model of care documents were reviewed and data extracted. Interviews with subject matter experts were conducted to understand how work was performed in the new model of care within the ED system. Using the CWA framework, models were developed to explore in detail the who, what, where, when, and how the new model of care work was performed in ED, how the new Bypass processes interfaced with normal ED work-as-done and how it resolved the unintended consequence of the surgical streamline process.

Results: CWA models identified how the new model of care provided a solution to the increased patient load in ED that resulted from hospital system adaptation.

Conclusion: Adaptations and workarounds that arise from subsystems within complex adaptive systems like hospitals can have serious implications for the subsystems that

interact with the adapting subsystem. Using the CWA framework, solutions or subsequent adaptations can be designed and/or evaluated before, during and/or after implementation to demonstrate the effectiveness and efficiency of the solution. While the models are designed for a specific system, with small adjustments they can be adapted for hospitals internationally.

Disclosure of interest: None declared.

ISQUA2023-ABS-1696

ESTABLISHING A COMPREHENSIVE CLINICAL DECISION-MAKING ASSISTANCE SYSTEM TO REDUCE THE RISK OF BLOOD TRANSFUSION

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Introduction: Blood transfusion is a common medical procedure in hospitals and is one of the top five overused medical procedures. Studies have confirmed that blood transfusions increase the risk of infection and can cause transfusion reactions and other adverse outcomes. Therefore, carefully evaluating the decision-making behind blood transfusions is essential. Establishing a clinical decision-making assistance system for blood transfusions and providing timely reminders for noncompliant blood use in our hospital have reduced the number of unnecessary blood transfusions. Blood transfusions rely on manual checking on correct patient identification. Therefore, to improve the appropriateness and safety of blood transfusions, an intelligent blood transfusion process was developed that uses information assistance and integrates multiple systems to evaluate the entire process.

Methods: This study developed an innovative function to automatically integrate links within the information system, determine whether the patient's condition requires a blood examination and the examination items, and prescribe orders. The proposed function can reduce the number of missed examination items and solve communication problems. After the system is connected, intermediary transmission of information is established between data platforms, which avoids repeated work and improves the convenience of data retrieval to achieve system error prevention and virtually zero-risk safe blood transfusion. Additionally, a decision-making assistance system was introduced to assist physician with prescribing orders and managing blood. For patients with special blood needs, a blood transfusion decision-making assistance reminder function is included for more accurate decision-making and less waste.

Results: The innovative information system effectively improved the precision of blood transfusion and reduced waste. The compliance rate of blood products reached 95.3%, that of platelet products reached 96.5%, and that of plasma products reached 97%. All accuracy rates of blood-product use significantly improved, and the application process for blood preparation was simplified. After the application of blood products, data are automatically written onto the blood preparation and blood transfusion orders, and the information is directly transmitted to the system, which improves the accuracy and consistency of such

orders. The following problems have been rectified:

1. The blood product and quantity from blood collection being inconsistent with the orders; nurses misunderstanding or missing orders, resulting in incomplete blood transfusion and greater hesitancy toward blood transfusions in the future;
2. For patients using less blood and being reminded by the function, the rate of platelet detection within 24 h after blood transfusion increased to 100%, enabling superior determination of the effectiveness of platelet transfusion and improving the quality of blood transfusions; and
3. Calls that the blood bank received and that asked to reprepare blood examinations or orders fell from an average of 20 calls per month to 1 call per month.

Conclusion: The decision-making assistance system can be used to perform effective blood transfusions, promote accurate blood use, and reduce blood waste, effectively reducing errors and virtually zero risk. The system was given to Cathay Medical Network to share the benefits of our research.

Disclosure of interest: None declared.

ISQUA2023-ABS-1697

CUE UTILISATION REDUCES THE IMPACT OF RESPONSE BIAS IN HISTOPATHOLOGY

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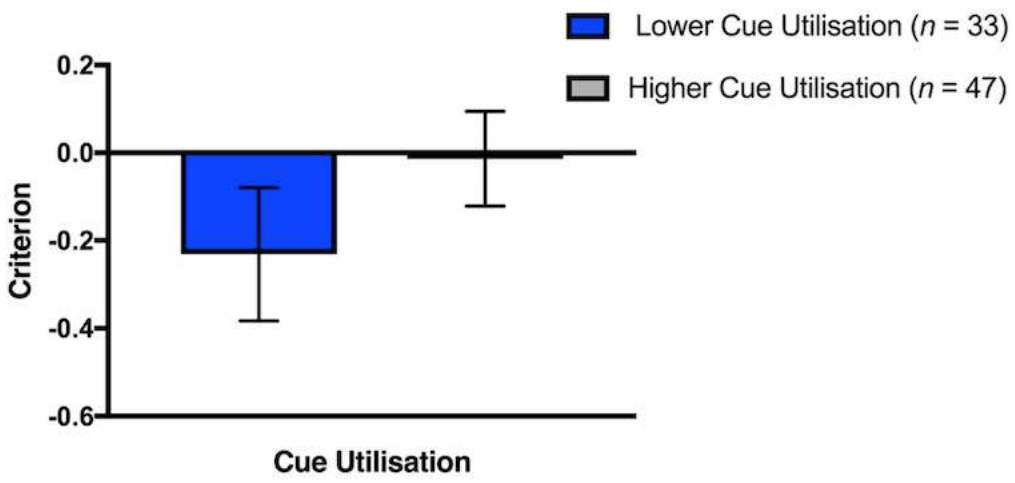
Introduction: Histopathologists make diagnostic decisions that are thought to be based on pattern recognition, likely informed by cue-based associations formed in memory, a process known as cue utilisation. Typically, histopathologists test the working diagnoses derived from cases that have already been classified as 'abnormal' by clinical examination and/or other diagnostic tests. For example, surgical incision for polyps. Consequently, disease prevalence tends to be high. Specimens are also accompanied by a clinical report which likely creates an environment where there is the potential for 'abnormality priming', and a response bias leading to false positives on normal cases. This study investigated whether cue utilisation reduces the influence of a positive response bias in a high disease prevalence context, based on the diagnostic decisions of histopathologists.

Methods: Data were collected from eighty-two histopathologists who completed a series of demographic and experience-related questions and the pathology edition of the Expert Intensive Skills Evaluation 2.0 (EXPERTise 2.0) to establish behavioural indicators of context-related cue utilisation. EXPERTise 2.0 comprises five tasks that are designed to assess participants' ability on: (1) feature identification, (2) feature recognition, (3) feature association, (4) feature discrimination, and (5) feature prioritisation. They also completed a separate, diagnostic task comprising breast histopathology images. To emulate the prevalence rate in a typical non-screening environment (~91%), the participants were presented 123 abnormal cases (malignant and benign) and 12 normal cases for 1500 ms and asked to categorise each case. All the tasks were developed with a subject matter expert and co-author (ACh).

Results: Participants were assigned to higher or lower cue utilisation groups based on their performance on EXPERTise 2.0, delineated using a *k*-means cluster analysis. Forty-seven histopathologists (six trainees) were assigned to the higher group, and thirty-three (fourteen trainees) were assigned to the lower group. As a group, the histopathologists could accurately detect malignant cases, but were less accurate for the normal cases. When the effects of experience were controlled, higher cue utilisation was specifically associated with a greater accuracy classifying normal images ($p < .0167$). We also showed that those with

higher cue utilisation recorded a lower positive response bias compared to those with lower cue utilisation (p = .02).

Image:



Conclusion: The findings from this study showed that when controlling for the effects of experience, higher cue utilisation was associated with an increased capability to categorise normal images correctly, resulting in a lower false positive rate. Given that current training protocols focus on the identification of disease to support the confirmation of disease, it is crucial that trainees and experienced histopathologists develop and maintain their ability to recognise the range and variability or normal pathology to avoid false positive errors and subsequent harm to patients.

To investigate whether the lower accuracy on abnormal cases demonstrated in a lab environment generalises to real world proficiency testing, in 2023, a series of studies will be conducted in collaboration with the Royal College of Pathologists of Australia's Quality Assurance program. We will compare previous results across ten years that only presented abnormal cases, with 36 months of testing that will include normal cases inserted into a range of anatomical test sets.

Disclosure of interest: None declared.

ISQUA2023-ABS-1721

ONE-STOP SERVICE FOR INPATIENT CAREGIVER REGISTRATION DURING COVID-19 PANDEMIC

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Introduction: The COVID-19 pandemic has brought unprecedented challenges to the world since the end of 2019. The impact of the COVID-19 pandemic has placed a huge burden on healthcare workers. In addition to effective therapeutic drugs and vaccines, non-pharmaceutical interventions (NPIs) are particularly important to stop the spread of the virus. Wearing a mask and implementing hand hygiene are important and effective infection control measures. Digital contact tracing is an important global epidemic technology when the urgency of epidemic monitoring and epidemic prevention. Therefore, patient-centered contact registration becomes important information for follow-up investigation. The research purpose is to understanding the registration process of inpatient caregiver information in order to solve the problem of queuing congestion at the hospital entrance.

Methods: Use digital intervention designs the research. Change the registration process of the inpatient caregiver's information from paper to digital record. The registration place was changed from the hospital entrance to the nursing station. Set Automatic temperature measuring machine plus induction alcohol hand sanitizer machine at each nursing station. And before register, visitor would used alcohol hand hygiene and measure the temperature every time. At the same time, Health workers use visitor's health insurance card to link to the National Health Insurance Administration's health insurance medical information cloud query system TOCC window to provide COVID-19 related information. And patient visitors' information about Travel, Occupation, Contact and Cluster history (TOCC) can inquire immediately. Questionnaire of inpatient caregiver registration system are established to satisfaction survey including type, timing, location and overall satisfaction. The 5-point Likert scale was used. There are 52 samples before intervention from November 30 to December 3, 2011 and 42 samples after intervention from December 8 to December 13, 2011.

Results: Basic data analysis, inpatient caregiver average age 50.9, Gender percentage was male 38.5% and female 61.5% before intervention. After intervention, inpatient caregiver average age 50, Gender percentage was male 31.0% and female 69.0%. Caregiver registration process spends average savings of 4.5 minutes every time after improved TOCC registration. Caregiver's satisfaction before and after process change average from 4.18 improved to 4.69. The TOCC completion rate of inpatients caregiver is increased to 100% at

afternoon and night shift.

Conclusion: Caregiver registration process can register for 24 hours without time limit. Medical materials cost save $17,305 per month on infrared ear thermometer probe cover consumption. The place of registration was changed to the nursing station, which could reduce the distance of caregivers from ward to the hospital's entrance, time consuming and reduce staff registration of TOCC. The visit registration system act in concert with alcohol hand sanitizer machine at each nursing station, could reduce the number of bacteria on hands of caregivers, could also fit Hand Hygiene Policy.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1730

IMPROVEMENT OF THE EFFICIENCY AND QUALITY OF THE ITINERANT HEALTH EXAMINATION SYSTEM WITH DIGITIZATION AND ARTIFICIAL INTELLIGENCE

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Introduction: In Taiwan, the itinerant health examination service needs to go to the company to conduct a large-scale health examination. Its characteristic is that it needs to serve a large number of examinees in a short time. In the past, due to the network environment, images had to be uploaded back to the hospital and many paper-based operations were implemented, requiring a lot of manpower to organize and compare. Therefore, this project aimed to digitize the entire itinerant health examination process and use artificial intelligence (AI) to enhance the efficiency and quality of the health examination tour.

Methods: The paper-based health examination is complicated. It has the following difficulties. 1. The examinee fills in multiple paper questionnaires and needs to fill in repeated questions. 2. During the health examination, leakage and missed tests occurred. 3. Paper-based operations are heavy and require a lot of manpower. To overcome the above difficulties, we follow a design thinking user-centered and develop four health examination systems, which include a questionnaire system, a working system for each examination, a radiology reporting system with AI, and a general assessment report system.

Results: The four health examination systems digitize the health examination data so that medical staff can effectively and completely carry out the health examination. After it went online, an average of 6,713 reports were produced a month, and the average number of missed sampling and inspections by medical staff dropped from 38 a year to 0. The time of the process from health examination to output report for medical personnel could be reduced by at least 20 minutes on average. The average time for the examinees to complete the health examination dropped from 59 minutes to 41 minutes.

The results of the radiologists' reports in positive cases are highly consistent with the AI. Between September 2021 and June 2022, radiologists reported 6 cases of suspected malignant tumors, of which 5 cases were judged positive by AI, and the consistency between AI and radiologist judgments was 83%. There were 6 cases of pneumothorax reported by radiologists, of which 5 cases were judged positive by AI, and the consistency between AI and radiologist judgment was 83%. On the whole, the satisfaction questionnaire

of the companies increased from 4.7 to 4.8.

Conclusion: A questionnaire system reduces the time for the examinee to fill in the questionnaire. A working system for each examination for the medical staff to do real-time comparisons in numbers of examinees and specimen quantity. The results of the radiologists' reports in positive cases are highly consistent with the AI in pneumothorax and pulmonary nodules. A general assessment report system improves the communication efficiency between nurses and physicians. The four health examination systems can comprehensively improve the efficiency and quality of the itinerant health examination.

Disclosure of interest: None declared.

ISQUA2023-ABS-1742

IMPROVING PATIENT SAFETY WITH A SMART LOCATION TRACKING SYSTEM

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Introduction: Getting location information of inpatients is essential to medical staff and imposes significant workload on the healthcare providers. High risk patients with Alzheimer or delirium and patients who need complete bedrest often leave specified locations, which could deteriorate their condition. This study utilized a real-time patient location tracking system (RTPLS) to reduce any unexpected risk and workload.

Methods: The task of locating patients in wards with a RTPLS was organized with a schematic template. We conducted a review of records and a pre-intervention survey asking work and time load needed for locating inpatients using standardized forms. The cause–effect diagram was used to determine the root cause. The lack of clear criteria for patient location and various situations, blind spots difficult to monitor according to the location of the hospital room, and transparent criteria that should only be applied to inpatients were derived.

To prevent appropriate treatment delays and safety risks due to unconfirmed patient location, the following implementations were conducted using a four-block matrix.

1. We built a RTPLS which includes Bluetooth signal transmitters applied on patients' wrist bracelet and signal receivers mounted on the ceilings of wards. Location data of inpatients are stored in server and can be searched in real-time manner in the case of patients' absence.
2. Operation of the RTPLS based high-risk patients management system

- Identifying mandatory group: High-risk patients for location tracking (high risk of falling, dementia, delirium, desertion, etc.) of inpatients in wards
- Developing real-time dashboard screens that enable alarms for high-risk groups (PC sound alarms and red alarm markings on the computer)
- Creating guidelines/manual and Distributing training Materials.

Results: According to pre-intervention survey, it took 14 min to recognize the patient's absence in the ward and 20 min to relocate the patient's location. 62.8% of Medical staff ranked their stress level above_5 out of 10 on the task for locating the patient. From October 2021 with installation of RTPLS and high-risk patients management system, data

were collected and analyzed for 8 days for each indicator. The primary indicator, which is time to recognize patient's absence, was significantly reduced to 6.1 min with the help of sound alarms and screen markings when the patient leaves the position, compared with 14 min of pre-intervention survey results. Time to relocate the patients was second indicator and also reduced to 2.9 min compared with 20 min of pre-intervention survey results and accomplished primary task target. Applying the beacon and the smart screen which is tracking patient's real-time location contributed to the result. Stress level-related to patient positioning above 5 points was the tertiary indicator and also achieved the goal at 49.1% and confirmed that the stress of nurses on positioning was reduced thanks to RTPLS and high-risk alarms.

Conclusion: A systematic management system for high-risk groups was established by building a RTPLS in this activity. By building a system that simultaneously provides sound alarms and screen warning alarms when high-risk groups leave, patients could be located in real time, and the stress score was reduced by allowing nurses to recognize them when leaving high-risk groups quickly. This is an innovative reference of providing medical staff with alarm information that expands real-time location and location solutions.

Disclosure of interest: None declared.

ISQUA2023-ABS-1748

ASSESSING CARE QUALITY IN GENERAL PRACTICE; A QUALITATIVE STUDY OF GENERAL PRACTITIONERS IN IRELAND

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Introduction: It is estimated that approximately 29 million consultations occur in general practice in Ireland each year with a patient satisfaction level of 90%. To date research has been lacking on how GPs assess the quality of care provided in the course of this work. The aim of this study was to examine how GP's assess care quality (effectiveness, safety, timeliness, equity, efficiency, sustainability and person centredness [1]) on an ongoing basis during routine general practice.

Methods: During the course of this qualitative study, semi-structured interviews were conducted with 10 GPs recruited via a snow-ball sampling strategy. Interview transcripts were analysed using an inductive approach based on grounded theory. A quality 'assessment point' was deemed to be any factor identified as evaluative in nature or informing of subsequent action relating to any aspect of quality in general practice. From these emergent assessment points, sub-themes and themes, a theory was produced.

Results: Five female and five male GPs were interviewed as part of this study. The age range of participants was 33 to 68 years (median age 44 years). All had completed a formal GP training programme and were practicing in a variety of settings. 122 assessment points emerged from the data and were collated into 31 sub-themes. These sub-themes were then collated into 8 themes: GP as professional person factors, patient and co-production factors, care team factors, direct care factors, outcome factors, practice environment and organisation factors, external environment factors and improvement approach factors. These themes were arranged into a theory of assessing quality in general practice in Ireland (Figure 1).

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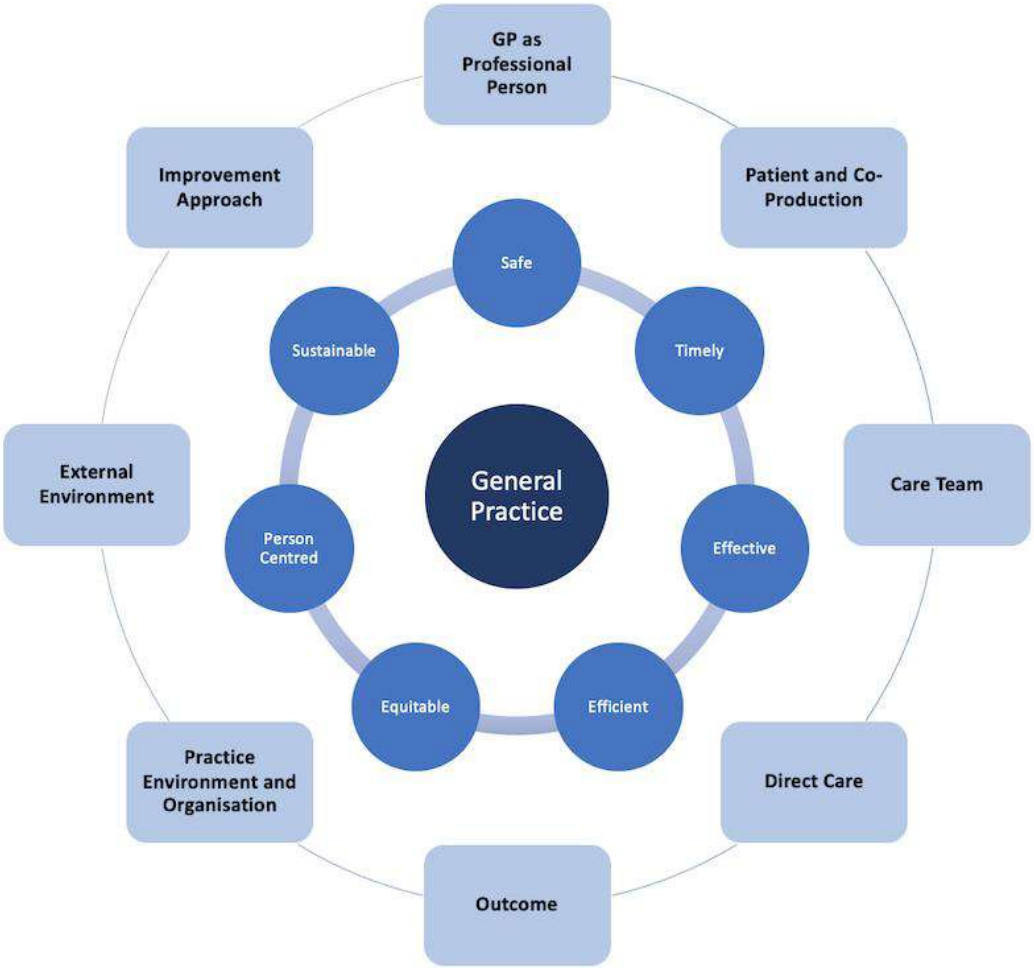

Conclusion: This is the first study to examine how GPs in Ireland assess care quality as a holistic construct during routine daily care. The qualitative approach applied has yielded rich and diverse insights into the many assessment points that GPs use on an ongoing basis to inform their approach and actions as clinicians, managers, collaborators and leaders for producing the best possible health and care with patients. The theory produced is likely to be useful and applicable for practicing GPs, policy makers and funders in planning and executing changes for quality improvement in primary care.

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Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1766

PROACTIVE COMMUNITY SUPPORT FOR FRAIL ELDERLY - EVALUATION OF A PILOT PROJECT

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Introduction: Frailty means increased vulnerability to negative health outcomes, primarily in older people; it reduces quality of life and can increase use of unplanned emergency services. Recognising Frailty as a priority, Lewisham in southeast London, UK, developed a holistic, interprofessional primary care approach to assessment and management of frailty in people most at risk of deterioration. The Lewisham Frailty Pilot was externally evaluated to provide an independent, objective assessment of delivery and impact.

Methods: A mixed methods evaluation of the Lewisham Frailty Pilot assessed how effectively it was supporting frail elderly people to live independently and reducing use of emergency care. A cohort of 300 patients was identified from indicators in patient records, including:

- Age 65+
- 1+ falls in last 12 months
- 1 + unplanned admissions in last 12 months
- 4+ medications on repeat prescription.

Patients were invited to join the Frailty Pilot and once enrolled, a care coordinator initially screened by telephone to allocate to a practice nurse, GP, or a pharmacist, depending on complexity, to undertake a home assessment. Care plans were then drawn up, including medication review and referrals to other healthcare services.

Perceptions of staff delivering the Frailty Pilot; GPs, practice nurses, pharmacists, occupational therapists, care coordinators and project manager were gained through qualitative interviews covering; what was working well, emerging challenges, overcoming these and views on project sustainability. Patients' views were gathered through feedback questionnaires by telephone, 3 months after the home assessment. Responses were thematically analysed. Evaluators reviewed the project plan, steering group minutes, MDT notes and assessment questionnaires. Some limited quantitative analysis of patient records was done comparing the cohort's use of services in the 12 months prior, to the 12 months of the project, including:

- Community nursing
- Falls clinic

- Continence service
- ED attendance
- Hospital admission.

Results: Patients were very positive about the Frailty Pilot. Home assessment was particularly popular enabling a holistic review of health needs, as opposed to a short GP appointment focussed on 1 issue. Many previously unaddressed health issues were assessed and treated through the Frailty Pilot.

The project team were also positive, describing satisfaction in having time to understand the patient's situation and seeing benefits for frail people. They appreciated Frailty MDT meetings as an opportunity to learn from each other and discuss complex care planning.

Most patients were referred to 2 services, some had 4+ referrals. The majority of referrals were for audiology and podiatry. Referrals were made to 14 different services. Analysis of healthcare use before and during the project showed some reduction but was not statistically significant, with several data confounders.

Project challenges included non-communicating IT systems between health organisations, delay in recruiting project staff and in acquiring project laptops. 6 months in, these had largely been solved. Primary care managers were concerned about sustainability beyond the project funding as GP time is a very limited resource and input was time consuming.

Conclusion: The Frailty Pilot provided a comprehensive assessment and referral service for frail elderly who felt supported and listened to. It facilitated appropriate care that improved quality of life and may have reduced use of emergency care. However, to be sustainable the model needed review, to rely less on GP time and support nurses and AHPs to deliver the service.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-1767

COORDINATED APPROACH TO CERTIFICATION, LICENSING, AND REGULATION THROUGH A COMPREHENSIVE ACCREDITATION PROGRAMME

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[1]MB3 Healthcare Ltd, London, United Kingdom; [2]Quality & Accreditation, NHRA, Manama, Bahrain

Introduction: The National Healthcare Regulatory Authority (NHRA) in the Kingdom of Bahrain has run an accreditation programme since 2017 and their updated standards for medical centres and hospitals have recently been accredited by ISQUA. The update has allowed us to include new standards with key performance indicators that link with disease prevalence within the Kingdom. This not only integrates the requirements for licensing and regulation but includes quality improvement indicators (KPIs) into our accreditation programme. With accreditation being mandatory for all hospitals and medical centres our programme allows us to get a true picture of healthcare status within the Kingdom.

Methods: The accreditation programme standards were updated in accordance with the ISQua Principles for the Development of Health and Social Care Standards. We used these as a basis for the update to the standards but have added layers of requirements through the introduction of TAGS which relate to required standards (relating to regulation, licensing etc), core standards (relating to safety and good practice) and enhanced quality practice (EQP) as drivers for improvement. This means that the data from the surveys gives a greater analysis of achievement. The analysis is supported by a tool that includes indicators, required documents, categories for non-compliance, such as infection control, education and training as well as those for regulation and licensing. The compliance rating is linked to a summary sheet which calculates the award outcome based on whether compliance is linked to required or core standards. The rating allows for excellence to be shown against specific standards and shows where healthcare facilities are striving to improve by meeting the EQP standards. The outsourcing of the design of the tool has enabled the complexity to function and has been developed between the standards developer, the accreditation lead and the tool designer. The data generated gives those going through the accreditation process a much richer and more detailed synopsis of not only where improvements can still be made but of their acutal achievements and highlights where good practice is embedded.

Results: The success of the standards and analysis from the tool has enabled a joined-up approach to quality by use of the indicators now being part of the national quality strategy. This cuts down on the multiple reporting requirements and additional work for the

healthcare facilities. Regulation, licensing and quality are all checked at the same time with in-depth reporting being able to be made and shared within the Regulatory Authority.

Conclusion: The implementation of the standards through the accreditation programme allows the NHRA to have a quality repository of metrics. This not only assures that licensing standards and accreditation standards are being met but action taken when required. The collection the KPIs to monitor quality in hospitals allows for a national benchmark for all the 16 hospitals as care is standardised for the population. These metrics can be extrapolated and the results used to formulate the national quality plan and the required mandatory KPIs for the national quality programme.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1776

EXAMINING HOSPITAL-WIDE QUALITY INITIATIVES FROM AN IMPROVEMENT SUSTAINABILITY PERSPECTIVE: A STUDY PROTOCOL FOR A MIXED-METHODS MULTI-CASE STUDY

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Introduction: Making and maintaining the improvement is vital for hospitals to reliably deliver safer and higher-quality care. Larger-scale quality initiatives require substantial time, resource investments, while there is no guarantee of longer-term gains. This is due partly to limited knowledge in what is required for sustained improvement for large-scale change in hospital settings. Without such knowledge, hard-earned and high-cost improvement may be short-lived, negatively impacting on care quality. Recent evidence [1] provides the factors and their interrelationships for sustained improvement from hospital-wide quality initiatives. Extending this evidence base to the real world, this study aims to examine the implementation, experience and outcome of hospital-wide quality initiatives to answer the research question, "How is hospital-wide change embedded for sustained improvement in patient safety and quality?".

Methods: *Design:* A multiple-case study with a mixed methods approach. Two hospital-wide quality initiatives – one completed and the other being currently rolled out – in an Australia tertiary hospital will be examined. This study is designed to obtain rich, context-specific information from a wide range of data sources. *Data collection:* Semi-structured interviews with initiative participant (staff), documents (e.g. policies), routinely collected organisational activity/performance data relevant to the initiative topic (e.g. audits, previous staff surveys). The interview participants will be recruited from different levels of hospital hierarchies with distinct role perspectives. *Data analysis:* Each initiative will form a case unit. Collected qualitative and quantitative data will be analysed using, respectively, thematic analysis and descriptive statistics, and merged for each case for interpretation. The cases will be compared for similarities and differences over time. *Ethics:* Low-risk human research ethics review will be sought for this study. An executive endorsement from the study site has been granted.

Results: This study will describe the staff experience and observations toward the quality initiatives across the role functions and the life of change in the hospital. Corresponding to

the initiative timeline, the collected data will also demonstrate an interim and longer-term outcome based on lived experience and organisational records. Together, this study will provide context-based empirical evidence of improvement sustainability. The study findings will be published in peer-reviewed journals and presented at local/national and/or international conferences. The findings will form part of a doctoral thesis.

Image:

Conclusion: Grounded by comprehensive empirical data, this study will elaborate large-scale change with a focus on the sustainability of gained improvement in a tertiary hospital setting. Exploring real-world quality initiatives, the findings of this study will add to the contemporary evidence[1] with empirical insight. The outlined methodology will assist replicating this study beyond the study setting with a potential for further extending the evidence base. The gained knowledge from this study will provide value in informing strategies for planning and executing organisational change and other post-implementation efforts that will optimise longer-term change outcome in hospital settings.

Reference

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Disclosure of interest: None declared.

ISQUA2023-ABS-1800

DOOR-TO-PUNCTURE TIME REDUCTION OF INTRA-ARTERIAL THROMBECTOMY IN THE EMERGENCY ROOM USING QUALITY CONTROL CIRCLE

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Introduction: Acute ischemic stroke is the fourth leading cause of death in Taiwan. About 17,000 stroke survivors with disabilities of activities of daily living (ADL) are reported in the Taiwan Stroke Association Registration System each year. The proportion of incapacitated stroke patients after one month is 61.20%, 55.58% after three months, and 51.72% after half a year. Studies indicate that early intervention by Intra-Arterial Thrombectomy can restore cerebral reperfusion resulting in great reduction in the degree of disability of patients. Intra-Artery Thrombectomy was performed on patients in the emergency room of our hospital from January 2020 to April 2021. The average Door-to-Puncture time was 181.3 minutes. To further shorten Door-to-Puncture time, the quality control circle was applied in this study with the use of the strength of the joint team.

Methods: 8 cases of IAT performed from January 1, 2020 to April 30, 2021 were analyzed. A Value Stream Mapping after time analysis showed an average execution time of 181.3 minutes. The system diagram suggested the possible reasons for the delay. The circle members proposed 14 major causes based on their expertises and 11 crucial causes were confirmed according to the three-occurrence principle, which were no vacancy in the examination room, uncooperative restlessness patients, long waiting time for specialist consultation, pre-examination incomplete preparation, surgeon not on duty in the hospital, the lengthy doctor's explanation of the condition, accompanying family members unable to make a decision, the emergency nurse unfamiliar with process, surgical members unfamiliar with the process, the misplacement of the machine in the operating room, and the incomplete preparation before the operation. 11 countermeasures were implemented to accelerate the processes and summarized into four groups. Group 1: Revise the operation guidelines of the Brain Stroke Center; Group 2: Import AI DeepCT auxiliary system to quickly diagnose stroke; Group 3: Hold education and training related to IAT surgery; Group 4: Develop IAT surgery standardization.

Results: Between September 1, 2021 to December 31, 2021, a total of 12 IAT Door-to-Puncture procedures were performed. An average execution time of 120 minutes and a vascular recanalization rate of 100% were achieved. Modified Rankin Scale <2 points is up to

65%, which is well above 40% in the literature.

Conclusion: The implementation of the quality control cycle resulted in great results. Door-Puncture time was improved from 181.3 to 120 minutes with Modified Rankin Scale <2 points up to 65%. Understanding the stroke symptoms: “One face and one hand is weak, two lips can’t speak clearly”, is critical for patients to receive timely treatments for better results. Since expediting the IAT preparation process partly depends on the patient and accompanying members, the promotion of understanding the stroke in the community can shorten the IAT Door-to-Puncture time in the emergency room.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-1805

INCREASE RATES OF EXCLUSIVE BREASTFEEDING DURING HOSPITALIZATION

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Introduction: According to the information provided by the Baby-Friendly team of our hospital, the average rate of exclusive breastfeeding during hospitalization in 2019 was 31.83%, while the rate of exclusive breastfeeding in Taiwan under six months was 46.2%, so the national average was 46.2% is set as the unit target value. In order to improve nursing staff's knowledge, skills and attitudes towards breastfeeding, improve the quality of maternal and infant care, and promote strategies to the obstetrics units of hospitals of the same group to promote exclusive breastfeeding for hospitalized parturients.

Methods: Assessment tools: Based on the literature review, the "Cognition and Attitude Evaluation of Nursing Staff on Breastfeeding Nursing Guidance for Hospitalized Parturients" and the "Breastfeeding Cognition Questionnaire for Parturients" were developed, and five experts were invited to review the two questionnaires for content validity index (CVI). After the current situation analysis, it is found that the correct rate of nursing staff's cognition of exclusive breastfeeding is 88.1%, and the lowest is 41.6% of "need to complete breast milk hygiene education within a few hours after delivery"; In terms of breastfeeding, the correct rate of cognition was 73.64%, with 52% being the lowest in "Precautions for newborns to latch on to the breast". 30 parturients who did not exclusively breastfeed were interviewed, and it was found that 33.33% of the parturients did not exclusively breastfeed due to lack of self-confidence, 33.33% were physically exhausted after childbirth, and family support less than 23.34%, 10% too far from the baby room.

Action: Rearrange the environment of the existing breastfeeding room (Figure 1), play music and introduce aromatherapy to create a relaxing and soothing environment for breastfeeding; implement a reward mechanism to encourage exclusive breastfeeding, parturients can get breast milk collection bags and wet wipes (Figure 2); use situational teaching strategies, and experience baby holding with fake breasts posture for guidance and practice.

Results: After promotion and improvement from 31.83% in 2019, the breastfeeding rate will be 45.1% in 2020 and 50.2% in 2021 (252 exclusive breastfeeding/502 live births) (Figure 3). The average correct rate of breastfeeding skills (hand milking and breast engorgement treatment) for hospitalized parturients was 97.6%, indicating that the team members of the

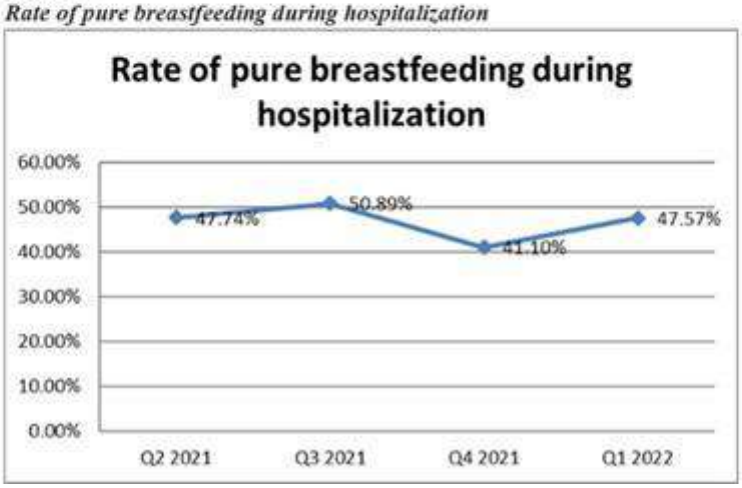
unit have internalized breastfeeding skills as a routine, and the effect remains good, and the improvement strategy will be extended in parallel to Obstetrics units of systematic hospitals increase the exclusive breastfeeding rate of hospitalized parturients and improve the professional quality of maternal and child care.

Image:

Figure 1
The warm environment of the breastfeeding room

Figure 2
Announcement of the reward mechanism for pregnant women

Figure 3
Rate of pure breastfeeding during hospitalization



Conclusion: Through the implementation of relevant countermeasures, the rate of exclusive breastfeeding will be improved and stabilized, complete health education and encouragement will be provided in a timely manner, the parturients's confidence in breastfeeding will be enhanced, and the effectiveness of breastfeeding will be maintained through continuous promotion.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1806

GOOD CATCH INITIATIVE TO PREVENT MEDICATION ERRORS IN KPJ AMPANG PUTERI SPECIALIST HOSPITAL

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Introduction: In a hospital pharmacy, it is crucial to ensure patients receive the correct medications at the correct dose. An adverse event due to a medication error should not be taken lightly, as more often than not, it is preventable if managed well. If the error is detected before it reaches the patient, it is considered a near-miss. Near-miss medication errors reflect risk points in medication handling and thus provide rich data to improve patient safety and quality of care. From the data collected, identification of root causes can be done, and risk of adverse medication errors can be minimized. Subsequent handling of this risk reduces the recurrence of similar errors in the future. In KPJ Ampang Puteri Specialist Hospital, the number of near-miss reports was very low, and highly disproportionate to the sheer number of medications handled by all healthcare practitioners. Hence, "Good Catch Initiative" to encourage staff in reporting near-miss medication error was implemented.

Methods: A questionnaire was distributed to pharmacy staff to identify barriers to reporting near-miss medication errors. The results were analysed and used to create a safety culture programme among pharmacy staff particularly in encouraging near-miss medication errors reporting. QR codes prominently placed at screening and filing areas in the pharmacy department were used to simplify reporting process.

Results: Before the implementation of "Good Catch Initiative", Pharmacy receives an average of 14 near-miss reports per month. Following the implementation of the initiative, there was an increase of nearly threefold in the number of reports by the pharmacy staff. In 2018, the total number of near-miss medication errors reported was 173. The reporting increased by 85% in 2019 with total of 320 reports. In 2020 the reporting increase by 94% with total number 620 reports. However, in 2021 and 2022, the reporting decreased by 2.74% and 1.33%, with a total of 602 and 594 reports respectively.

Conclusion: The "Good Catch Initiative" is effective in encouraging the reporting of near-misses involving medication errors and in creating a safety culture in the pharmacy department. Near misses particularly those related to High Alert Medications were analysed

and steps taken to prevent future recurrence. For example, streamlining of pharmacy inventory was done wherever feasible when there were near misses identified due to the same pairing of look-alike-sound-alike medications. In another instance, training and instruction modules were given to newly joined prescribers who were unfamiliar to the hospital's e-prescribing system (thus reducing the risks of errors in prescribing, as identified from the near miss data). The effectiveness of "Good Catch Initiative" is reflected in the total number of adverse events related to medication errors reported due to wrong medication prescribing by the doctors or consultants and wrong medication dispensing by pharmacy.

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ISQUA2023-ABS-1823

THE EFFECTS OF DAYCARE SERVICES FOR THE USERS AND CAREGIVERS

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Introduction: According to the forecast from the National Development Council in 2022, Taiwan was the aged society in 2018 and will soon become a super-aged society by 2025. There is an increased demand for long-term care (LTC) services in Taiwan because of its rapidly aging population. Aging in place is one of the most important policies nowadays for LTC services. Daycare provides services both for the older and the caregiver in family, is one type of the Community-Based Home Supportive Care (CBHSC). The research aims to explore the daycare service quality from users and caregivers.

Methods: The structured questionnaire was designed according to the opinions of the experienced users and healthcare providers in 6 assigned daycare centers in Kaohsiung and Pingtung, Taiwan. Convenience sampling was applied by then. On the other hand, we've used purposive sampling method and informing the research purpose to the participants in the begging, and followed with the focus group interview. The service quality of the daycare centers was evaluated at the structure, process and also outcome aspects. There were total 5 professional caregivers (4 nurse aids and 1 registered nurse) were interviewed and 227 valid questionnaires were retrieved. SPSS 20.0 was used for descriptive and inferential statistical analysis.

Results: This research found that reliability (M =4.648, SD = .442), assurance (M =4.619, SD = .471), responsiveness (M =4.619, SD = .462), empathy (M =4.563, SD = .489), and tangible (M =4.497, SD = .477) of service quality were positive correlated with quality of life in terms of physical health (M =4.196, SD = .657), psychology (M =4.372, SD = .695), and social (M =4.339, SD = .852). The main factors for the cases to use the daycare service were no one to take care of them during daytime (62.1%), family members may have a rest (52.9%), participate the activities in daycare center (45.4%), and make new friends (42.3%). After receiving various services provided by the daycare centers, the users may improve their quality of life in terms of physical health, mentality, and social interaction.

Conclusion: This research found that the daycare can not only provide comprehensive

services for elders, but also help family caregivers reduce stress and anxiety and feel relieved to work. It also effectively reduce the care load and ensure family caregivers have the good both physical and mental health. Therefore, the government should provide more resources in the LTC. Such as, calibration parameter by the CMS level, dementia condition, and care needs, allowance increasing approved daycare period properly and flexibly. In order to provide more convenient and comprehensive daycare services for the user, postpose the case to receive institution care, and to reach the principle of aging in place.

Disclosure of interest: None declared.

ISQUA2023-ABS-1844

EVALUATING THE IMPACT OF MACHINE LEARNING ON THE TIME NEEDED BY STUDY NURSES TO IDENTIFY POSTOPERATIVE COMPLICATIONS

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Introduction: To maintain the quality of surgical care, it seems essential to measure and compare the quality of health care delivery in various institutions. The monitoring of postoperative complications after surgical interventions is of particular importance here.

However, most expensive is the cataloging of risk factors and complications from Electronic Health Records (EHRs) by study nurses. This process is time consuming and costly.

We developed a model to identify surgical patients with one or more postoperative complications using structured patients' EHR data and machine learning (ML) that correctly classified 76% of patients with a postoperative complication.

The aim of this study was to investigate, whether by using ML models to predict complications with a high probability beforehand, the cataloging of complications might be facilitated and the time required for study nurses to analyze a case be reduced.

Methods: In a randomized, controlled study, the influence of individual complication predictions per patient before the start of the analysis on the respective time investment of our study nurses was examined.

A total of 1390 patients included in our study from January to June 2022 were randomly assigned to either the intervention (n=682) or the control group (n=708). A prediction was generated for each patient in the intervention group as to whether the patient had one or more complications. A list of predictions (complicative case yes/no) was provided for each study nurse at the beginning of every month. The study nurses measured the time needed for analyzing each case using a stopwatch in both groups.

Potential risk factors (type of operation performed, study nurse, ASA classification, complication y/n and number of complications) for the time needed to review a case were analyzed using regression analysis in a subgroup of patients without complications.

Results: The mean time (min - max) needed for the analyses of a case in the intervention group was 15.54 minutes (1.00-117.00) vs. 15.69 minutes (4.00-97.00) for the control group (NS).

In a subgroup of patients without complications (n= 1092) the mean time (min - max) needed for the analyses of a case in the intervention group was 12.27 minutes (1.00-52.00) vs. 12.60 minutes (4.00-59.00) for the control group (NS).

In the patients of the intervention group without complicative cases that were predicted rightly to be not complicative (= true negative; n= 424) 10.85 minutes (1.00-30.00) was needed for analyses (p<0.001) vs. patients with an incorrect forecast (= false positive; n= 105) 18.05 minutes (7.00-52.00) were needed for analyses (p<0.001).

Hernia repair (−2.74; p<0.001), colon surgery (6.92; p<0.001), rectum surgery (15.32; p<0.001) and prostatectomy (2.09; p<0.001) vs. thyroidectomy, study nurse 1 (−1.91; p<0.001), prediction of complication false positive (1.82; p<0.001) and true negative (−0.89; p<0.001) vs. control group were significantly associated with the time needed to review a case.

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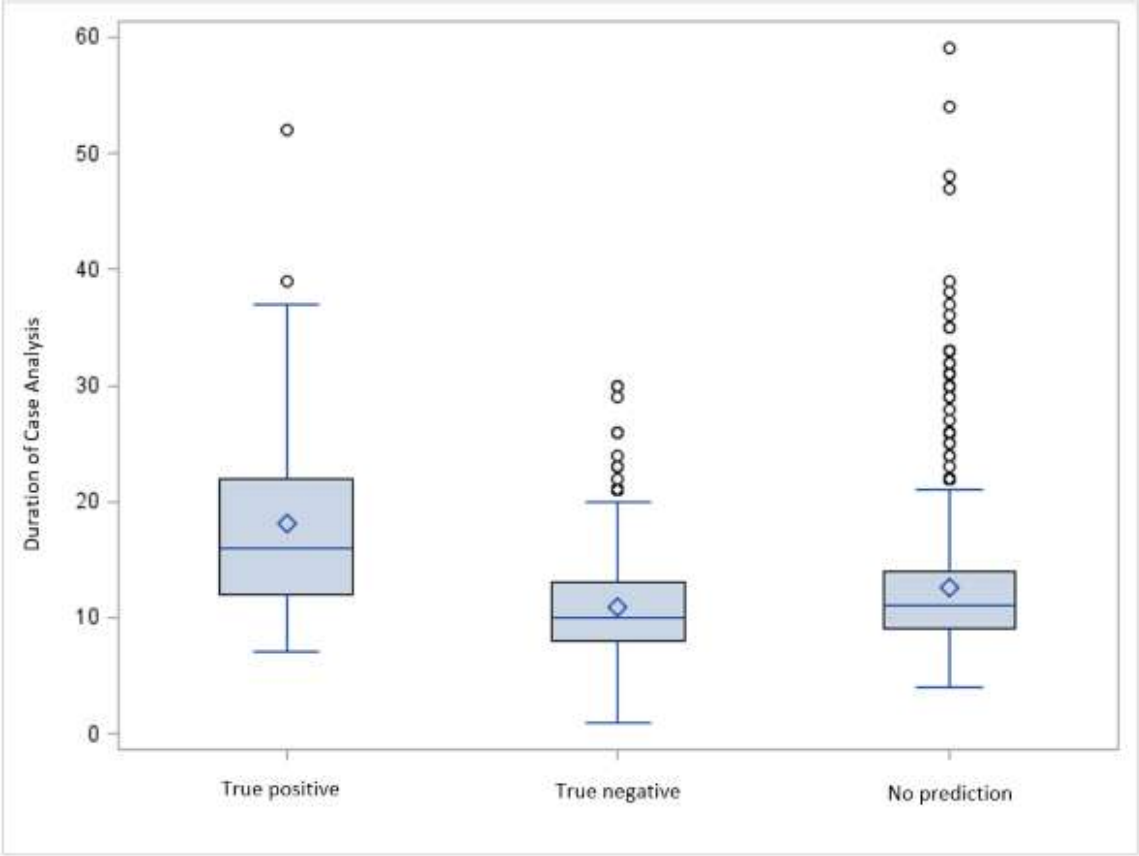

Conclusion: No significant difference concerning the time needed to analyze a case with or without the support through ML models could be demonstrated. A further analysis of the data revealed that patients without complications who were correctly predicted to not have

complications had a significantly shorter review time than patients who were incorrectly predicted to have complications ($p<0.001$).

As 24% of patients were not predicted correctly by our models, it may be speculated that with a more accurate prediction of complicated cases, the time needed for reviewing might be reduced.

Disclosure of interest: None declared.

ISQUA2023-ABS-1858

THE EXPLORATION AND DISCUSSION OF THE MEDICAL TEAM IN THE OPERATING ROOM THE PRESSURE AND THE ACTION TO RESPOND WHILE ENCOUNTERING COVID-19

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Introduction: COVID-19 has been raging everywhere globally; the medical staff in the operating room bear heavy working loading with a high possibility of infection, which generates a huge shock to the body, mind, and spirit. The purpose of the study is to explore and discuss the pressure source for the medical staff in the operating room during the epidemic prevention period, further, find out the adequate supportive resource and caring mechanisms, also apply the core concept of Team Resource Management (A) leadership: the questionnaire, to understand what colleges feel about the pressure of COVID-19; (B) communication: to screen out the pressure factor to improve and to enhance the morale of the team; (C) situation monitoring: planning the action to take to reduce the pressure; (D) mutual support: the team member jointly participate the execution of the planning. To improve effective communication and cooperation among the team members, to ensure the quality of medical care, and to reduce the negative influence on medical staff physically and psychologically.

Methods: The project team takes the medical team in the operating room as the target based on the policy version scale of medical practitioners coping with COVID-19. On December 15th, 2020, the cross-sectional investigation was applied to the medical team in the operating room, and the semi-structural questionnaire was used to collect the information to pick up 130 persons, which is 1/3 of the total number of persons through random sampling, 124 copies we collected with a recovery rate of up to 95.4%. Taking SPSS 19.0 software to proceed with the statistics after the research questionnaire has been managed and encoded, primarily the working pressure, interpersonal relationship pressure, and the disturbance of physical and psychological stress were found when people face the COVID-19 epidemic.

Results: To promote four major actions to respond through the full support from the unit supervisor and the project team's hard work, including the team developing the technique of personal risk management, creating the workplace-supportive environment of the operating room, enhancing the colleague's health service-oriented, diversification of propaganda and training exercise. After the actions were taken, in December 2021, the second time of 130 questionnaires was released again with a recovery rate of 92.3%, and

one of each item of pressure with significant reduction ranged from 11.9% to 28.5%; for all the attached effectiveness, the feeling of “anxiety” has reduced from 68.3% down to 19.8% which is 40.5% huge reduction. And the team staff’s satisfaction with the work has also raised to 90%.

Conclusion: The staff in the operating room coming from medical treatment, nursing, and anesthetization are the research target; through the incentive mechanism of the hospital and the supervisors’ fast reaction and flexibility fused with the feature of the operating room then, the good embodied reactive action was developed and to comply with the colleague’s anticipation, and finally, mission accomplished. Hopefully, all the employees’ demands under pressure can be discovered, which will allow all staff as long as they participate in the nursing and caring in the operating room with adequate reactive action, which will enable the team to provide even more advanced quality operation nursing and watching while facing the contagious disease.

Disclosure of interest: None declared.

ISQUA2023-ABS-1874

EXPLORING THE PRIMARY CAREGIVER'S EXPERIENCES IN RECOGNISING AND RESPONDING CLINICAL DETERIORATION IN EMERGENCY PATIENTS: A QUALITATIVE STUDY

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Introduction: The primary caregiver of patients may be the first to sense them with something wrong and struggle to respond. However, a few studies have sought to explore the primary caregivers' experiences in identifying and responding patient deterioration. This study aimed to explore and understand the primary caregivers' experiences of emergency patients in recognising and responding clinical deterioration.

Methods: A qualitative descriptive study involving 14 relatives of patients was conducted in an emergency department of the 3000-bed tertiary general hospital using semi-structured interviews. The relatives were present almost 24 hours a day due to the requirements of "one patient can only have one caregiver" policy in the prevention and control of the novel coronavirus 2019. The rapid response team and medical emergency team do not be adopted in this hospital, patients or relatives report conditions directly to nurses and doctors. The concurrent data collection and analysis aimed to identify the thematic saturation.

Results: Four broad themes emerged from the thematic analysis. The first and second, "Recognising" "Reporting and responding", depicts how and what primary caregivers of deteriorating patients observe and respond to. The third, "The primary caregivers' roles", illuminates the critical roles of primary caregivers between medical workers and patients. The fourth, "Feelings and needs", describes direct feelings and needs of primary caregivers.

Conclusion: This study supports the critical role of primary caregivers of emergency patients in recognising and responding clinical deterioration. Our findings illustrate the need of strengthening health education, humanistic care and psychological nursing of patients and their caregivers, to improve better collaboration with medical workers.

Disclosure of interest: None declared.

ISQUA2023-ABS-1876

THE EFFECTS OF WECHAT OFFICIAL ACCOUNT BASED OSTEOPOROSIS EDUCATION FOR PATIENTS WITH FRAGILITY FRACTURE IN CHINA

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Introduction: Osteoporosis and fragility fracture have been an increasing health challenge across the world. Inadequate knowledge of osteoporosis and fragility fracture patients may lead to various poor clinical outcomes for the patients. The purpose of the study was to evaluate the effectiveness of a WeChat official account based educational intervention on patients' osteoporosis related knowledge.

Methods: A total sample of 51 eligible patients with fragility fractures was recruited in orthopedic wards of a tertiary hospital in central China. They were provided with a WeChat official account based inpatient osteoporosis education program, including three 15-minute individually bedside osteoporosis education sessions by the same nurse. Participants were evaluated using a self-administered questionnaire and the Chinese version of Osteoporosis Knowledge Assessment Tool (OKAT) pre- and post-program. Data were analyzed using descriptive analysis and compared t test.

Results: 74.5% participates were female and the average age was 63.4 ± 9.5 years. After the WeChat official account based inpatient osteoporosis education program, osteoporosis knowledge of the patients was significantly increased for 12 items (20 items totally) of the OKAT ($P < 0.05$).

Conclusion: The WeChat official account based inpatient osteoporosis education program was effective at improving osteoporosis knowledge for Chinese inpatients with fragility fracture.

Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-1877

IMPROVING EMERGENCY DEPARTMENT PATIENT EXPERIENCE THROUGH AN ORGANIZATIONAL VALUES-ALIGNED STANDARDIZED BEHAVIORAL MODEL

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Introduction: Patient experience in the emergency department setting is an area of strategic priority for all healthcare facilities. Patient experience can be affected by several factors that encompass the healthcare organization's cultural, behavioral, and psychological domains. Emergency department (ED) patient experience (PX) meanscore as measured by the Press Ganey PX Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey at the Al Hada Armed Forces (AHAFH) was in a continuous decline during the Q1-2021 (ED PX meanscore=64.81, n=130), down by 4.05 points (5.9% decrease) compared to Q4-2020 (ED PX meanscore=68.86, n=125). Furthermore, based on patient complaints and comments analysis, behavioral concerns around various domains of ED PX including arrivals, doctors, nurses, and overall assessment were not infrequent items. We aimed to increase the ED PX meanscore from 64.81 to 70.00 (8% increase) by the end of Q1-2022 (12 months' time period).

Methods: A pre and post experimental design was utilized for our patient experience quality improvement project. The behaviors model design from Netcare Hospital/Holdings was utilized and modified to adapt to the needs of the local hospital ED context in terms of community and culture at AHAFH. The design of the behavioral model mainly focuses on ED staff to adopt the 7 key behaviors as described below:

1. Respect - "I will always greet everyone to show my respect".
2. Identity - "I will always introduce myself to show my Identity".
3. Dignity - "I am always well groomed to show my dignity".
4. Care - "I always practice proper hand hygiene to show my care".
5. Compassion - "I always seek consent to show my compassion".
6. Appreciation - "I always say thank you to show my appreciation".
7. Diversity - "I always embrace diversity to show I am not a racist".

The behaviors that are demonstrated through the behavioral model closely align with

the AHAFH organizational values of ‘Patients First’, ‘Human Centric’, ‘Innovations’, ‘Professionalism’, and ‘Continuous Learning.

The IHI Model for Improvement was used to implement the behavioral model intervention to improve the ED PX meanscore. Patients were involved in all the phases of the project through patient and staff focused groups, PX surveys, and patient comments analysis.

Results: The ED PX meanscore (outcome measure) improved over the 3 quarters to reach above the desired target at 70.04 by Q1-2022 with a shift in the control chart mean, upper control limit (UCL), and lower control limit (LCL) during the post behavioral model implementation phase at the AHAFH ED. The ED PX meanscore reached 71.05 by the end of Q3-2022, indicating a sustainable improvement. Similar improvements were also noted in our process measures of ED PX domain scores for arrivals, nurses, doctors, and overall assessment domains respectively. Our patient-staff focused groups and PX survey comments (balancing measure) also presented a deeper qualitative effect of the behavioral model implementation at AHAFH ED on improving the PX comments during the post behavioral model implementation phase at AHAFH ED.

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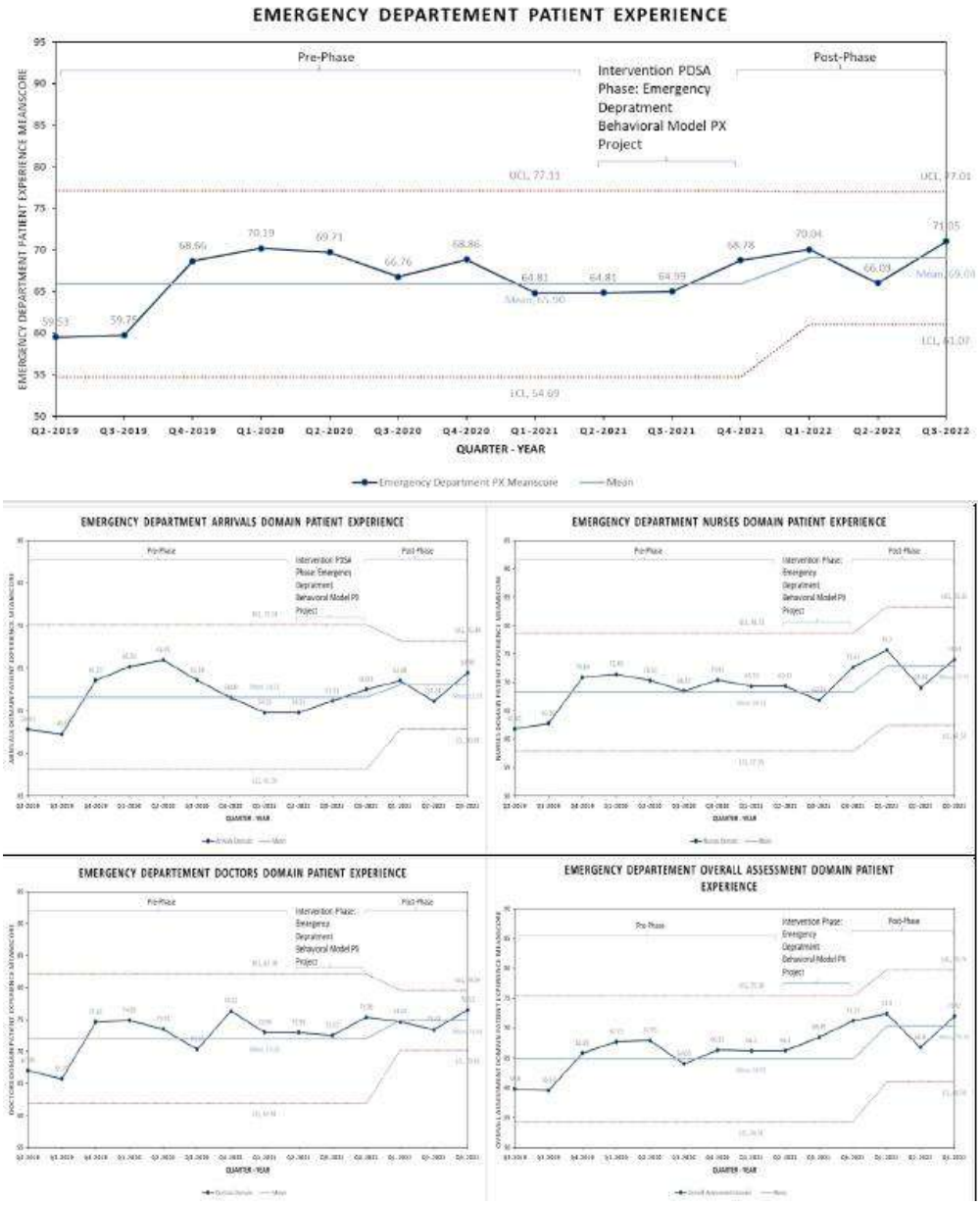

Conclusion: By adopting an organizational values-aligned standardized behavioral model, a sustainable PX improvement can be achieved in busy ED settings. Leveraging UBC and recognizing the staff with positive PX comments may significantly help improve the ED PX through active staff engagement and co-design.

Disclosure of interest: None declared.

ISQUA2023-ABS-1887

WHAT PERCEPTION AND EXPECTATION IS FOR PAID CAREGIVERS: A QUALITATIVE STUDY FOCUSED ON INPATIENTS AND THEIR RELATIVES

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Introduction: Hospitalized patients, especially for those with potential clinical deterioration and self-care deficits, usually need intensive and complex nursing caring. Given the shortage of nursing staff and the caring load of family caregivers, paid caregivers are expected to meet demands of patients' bedside nursing care, especially in China, due to the aging population and one-child family structure. The caring quality of paid caring is associated with patients' living quality and health outcomes during the hospitalization. Related studies especially in China, focused on training, management and satisfaction survey of paid caregivers, and mostly were quantitative studies. In other countries, studies attached importance to interviewing nursing assistants to understand their working experience. In addition, some researchers took nursing assistants, nurses and therapists as a team of patients' caring to explore their respective impacts on patient safety. To our best knowledge, little attention has been paid to exploring the real feelings and needs of paid caring focused on patients and their relatives comprehensively via the qualitative way to clarify the existing or potential problems of paid caring and provide suggestions for improvement of it. This study aims to explore perception and expectation of paid caregivers focused on patients and their relatives, to provide better insights into the status quo as well as further development of paid caring, in turn, contributing to improving patients' health outcomes and promote patients recovery.

Methods: Semi-structured interviews were conducted with participants from different departments (medical, surgical, emergency, ICU) via face-to face way. Colaizzi's seven-step method was used to analyze the interview data. The data were independently coded and categorized before consolidated into primary themes and sub-themes.

Results: A total of 12 participants (4 patients, 8 family members) were included. Five themes were identified: cognition of caring occupation (being promising and working hard); expectation of caring (expectation of personal qualities and professional competence); experience of being cared (positive experience and negative experience); perception of the patient's conditions (coping attitudes and coping behaviors); perception of family supports

(needs and challenges). All participants expressed that formal and paid caregivers were of importance to patients and their families.

Conclusion: As a result of the study, paid caring was regard as a promising and necessary industry. Paid caregivers with good personal qualities and skilled caring abilities could meet care recipients' expectations to give patients sound and considerate caring. The interviewed participants realized that paid caregivers were helpful to relieve caring stress of families, making family members more flexible between their life and paid work. Future research should investigate in-depth insights of paid caring from stakeholders group. Besides, appropriate and effective tools for measuring paid caring quality comprehensively are also worthy more attention.

Disclosure of interest: None declared**.**

Digital Healthcare and Innovation

ISQUA2023-ABS-1910

MIND THE GAP: ANALYSIS OF TWO PILOT PROJECTS OF A HOME TELEHEALTH SERVICE FOR PERSONS WITH COMPLEX CONDITIONS IN A SWEDISH HOSPITAL

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Introduction: Home telehealth (HTH) services for remote monitoring of health parameters have the potential to improve access and quality of care for patients with complex chronic conditions. However, successfully implementing HTH is challenging and pilot projects often result in non-adoption or abandonment. This may be explained by the complexity of change processes in healthcare, which require continuous learning and adaptation. Complexity science can thus provide a complementary approach to Quality Improvement (QI) when introducing new healthcare services. In this study, we used a theory-driven approach to (a) plan and pilot test an HTH intervention in a Swedish hospital setting, and (b) evaluate experiences of staff and patients.

Methods: We performed an exploratory single-case study using a mixed-methods design. The setting was a medium-large hospital in the Stockholm Region of Sweden. The intervention was a QI initiative intended to introduce HTH for patients with complex conditions. To plan and evaluate the HTH intervention, we used the Plan-Do-Study-Act (PDSA) tool in combination with two complexity-informed frameworks: the Non-adoption, Abandonment, Scale-up, Spread and Sustainability (NASSS) framework and the joint Complexity Assessment Tool (CAT). The intervention took place between June 2020 and March 2021, in two small-scale pilot projects with 11 patients: 3 patients with COVID-19, and 8 patients with heart failure. Each patient was provided with a tablet, a 4G router for communication, and sensor devices for self-measurements of vital parameters. We collected data from multiple sources (project documents, a staff survey on readiness for change prior to the intervention, and semi-structured interviews with patients and staff after the intervention) and analyzed the data using descriptive statistics and qualitative content analysis.

Results: The combined use of PDSA and NASSS-CAT was helpful in supporting the learning needed to plan and pilot test the HTH intervention in a hospital setting. However, the small-scale pilot projects were not sufficient to fully adapt the HTH intervention to the needs of patients and staff, and the value for the organization did not emerge with clarity. Our evaluation resulted in the assessment that most of the challenges addressed within the 7 dimensions of the NASSS framework were *simple* (value for individuals), or *complicated* (technology, value for the organization, adopter system, organization, embedding, and adaptation over time). The only dimensions assessed as *complex* were the conditions addressed and some elements in the organizational domain. Thus, our analysis indicates a perceived gap between the high value assigned by individuals to the HTH service and the lower capacity of adopters, the organization, and the wider system to effectively integrate these services into routine care.

Conclusion: The combined use of PDSA, NASSS, and CAT effectively supported the development and evaluation of the HTH intervention. Yet, despite extensive efforts, the pilot did not result in adoption of the HTH service. Our analysis suggests that the struggles to advance from pilot projects to full adoption may be explained by the interplay between the complexity of the conditions and the technology, and by the gap between the perceived individual value and the organizational value. For successful adoption, alignment is needed between these dimensions.

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ISQUA2023-ABS-1921

FACILITATORS AND BARRIERS TO ONLINE TREATMENT USAGE INTENTION FOR TAIWANESE PEOPLE WITH AND WITHOUT EXPERIENCE

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Introduction: During the COVID-19 pandemic, more people started experiencing online treatment (OT) in Taiwan. OT Anxiety (ANX) and OT Training Needs (TN) were added to the TPB (Theory of Planned Behavior) model to examine factors affecting Taiwanese people's intention to use OT and the reasons behind them. In other words, the purposes of this study were to explore people's perceived facilitators and barriers to engaging in OT and identify the principal predictors of OT behavioral intention.

Methods: A pilot study with 426 valid participants was conducted to test the quality and efficiency of the self-developed questionnaire through the 7-point Likert scale. The main study was surveyed online from October 26 to November 26 in 2022, with a total of 1506 valid participants (88.10%) remaining after conducting the reverse wording attention check method. The final research instrument included 9 parts: Personal Background Information (14 items), OT Facilitators (6 statements), OT Barriers (8 statements), Behavioral Intention (BI, 6 items), Attitude (ATT, 7 items), Subjective Norm (SN, 6 items), Perceived Behavior Control: IT skills (ITS, 5 items), OT Training Needs (TN, 5 items), and OT Anxiety (ANX, 5 items). BI, ATT, SN, ITS, TN, and ANX could explain between 57.28% and 73.13% of the total variance. The reliability coefficients were between. 87 and. 91. Thus the instrument had good psychometric qualities and validity. Descriptive statistics, the EFA, reliability analysis, contingency table analysis, ANOVA, correlation analysis, and multiple stepwise regression were utilized for data analysis.

Results: The ages of the 1506 valid participants ranged from 11 to 89 years old (M = 38.89, SD = 14.97), 55% identified as female. 90% knew of OT (n = 1356). 55% had OT experience (EXP, n = 825). Most participants showed an acceptance for OT usage (M_{item} = 5.16, SD_{item} = 1.15), with the facilitator being "Unable to attend all doctor visits (n = 636, 42.2%)," and their greatest concern being misdiagnosis (n = 808, 53.7%). Comparing the effects of online treatment and traditional in-person treatment, people with OT experience gave more positive feedback to OT than inexperienced people. For participants with both OT experience and positive feedback to OT, the facilitating factors were infection prevention

and saving medical treatment time. Technological and power stability issues were their greatest concern. Participants who were female, had higher education, were employed, and were married showed significantly higher intention to engage in OT. There was a moderate correlation between ATT, SN, ITS, TN, ANX, and BI, respectively. The best predictors of OT intention were SN (β = .32), TN (β =.32), ITS (β =.21), ATT (β =.17), ANX (β = –.13), EXP (β =.07), and Female (β =.04), which all accounted for 63% of the total variance.

Conclusion: People with OT experience gave positive evaluations for OT, demonstrating the high quality of Taiwanese medical care and the potential for the expansion of OT by the government. As the pandemic was still widely spread in Taiwan, sharing OT experience, mass media promotion, technological and power stability, recording accurate vital signs training courses, and decreasing OT anxiety could facilitate OT usage in Taiwan. Moreover, to prevent the risk of misdiagnosis via OT, patients should be encouraged to ask as many questions as needed. Lastly, the framework of TPB provided a good foundation to understand people's intention to engage in OT.

Disclosure of interest: None declared.

Universal Health Coverage and Equity

ISQUA2023-ABS-1928

HEALTH EQUITY FOR IMMIGRANTS IN JAPAN: AN ANALYSIS OF MICRODATA ON STILLBIRTHS FROM PRE- AND POST-COVID

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Introduction: Immigrant populations often face multifaceted barriers to equitable access to health care. Japan is a country with universal health coverage that is increasingly competing for immigrants to in response to one of the lowest fertility rates in the world. Ongoing monitoring and evaluation of reproductive health outcomes, like stillbirth, among immigrant women in Japan is critical to identify potential root causes of disparities in Japan's healthcare system.

Methods: We analyzed all of the anonymized microdata from stillbirth death certificates collected by the Japanese Ministry of Health, Labour, and Welfare (MHLW) during a pre-specified pre-COVID period (2018-2019) and post-COVID (2020-2021) period. We developed a multivariable logistic regression model to compare the occurrence of stillbirth in pre- and post-COVID study periods, and further investigated how such changes differ between Japanese populations and immigrant population living in Japan. Predictor variables included in the model were maternal age, weeks of gestation, employment status as well as socio-economic variables describing the municipality in which the mother was living. All data analyses were conducted in R version 4.2.2.

Results: In total, 74,244 records of stillbirths were included. When the stillbirth microdata was compared with aggregate statistics published by the MHLW, stillbirths exclusively among immigrant women were underreported by an average of 29.5% during the overall study period. The overall stillbirth rate in Japan during the pre-COVID study period was 22.0 per 1,000 births, and decreased to 20.2 during the post-COVID study period. During the pre-COVID period, the stillbirth rate for Japanese was 21.5 per 1,000 births, while foreign nationals was 37.5 per 1,000 births (51.3% difference, $p<0.05$). In the post-COVID period, this disparity widened to 20.1 and 39.0 stillbirths per 1,000 births for Japanese and foreign nationals, respectively (62.9% difference, $p<0.05$). In the logistic regression, employment status [AOR = 2.31, 95%CI: 1.78-2.96], median age of the municipality of residence [AOR = 0.81, 95%CI: 0.73-0.90], annual deaths in the municipality [AOR = 1.90, 95%CI: 1.06-2.10] and the number of single mother households [AOR = 0.99, 95%CI: 0.66-1.25] were each

significant predictors ($p<0.01$) of the stillbirth among immigrant mothers.

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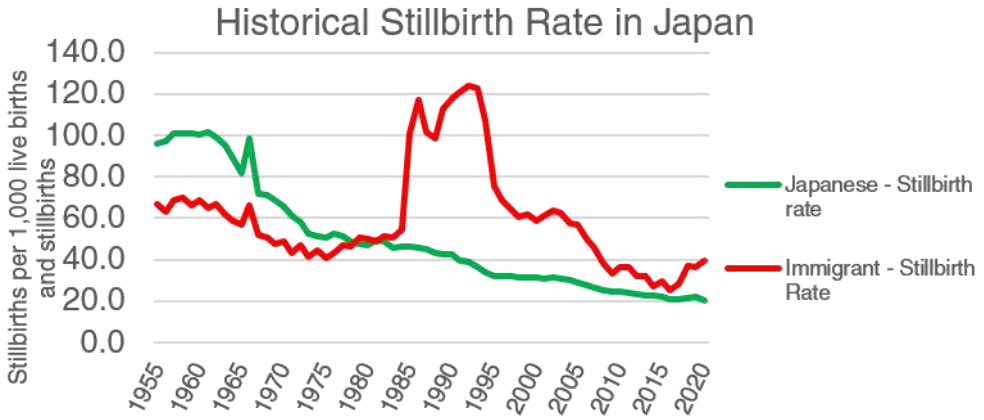

Conclusion: Immigrant communities in Japan have higher rates of stillbirth than their Japanese counterparts, and the disparity has been exacerbated by the COVID-19 pandemic. The social determinants of health, like municipal socioeconomic environment, may help identify immigrant communities at high-risk for poor health outcomes. However, these efforts must be supported by timely and accurate statistics reported by the government. Increasing the provision of easily-accessible and equitable pre-natal care and other reproductive health care for all residents regardless of immigration status is critical for Japan's goal for sustainable population development.

Disclosure of interest: None declared.

ISQUA2023-ABS-1941

THEIR BIRTHS MATTER: IMPROVEMENT INITIATIVE FOR SAFE EFFICIENT REDUCTION OF NULLIPAROUS TERM SINGLETON VERTEX CESAREAN BIRTHS

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Introduction: Although cesarean section (CS) delivery sometimes is an essential and life-saving surgery, it puts both the mothers and babies at risk of health problems. As well it is a costly & risky procedure.

Worldwide CS rates have risen from 7% in 1990 to 21% in 2022 [1]. Several factors contributed to this increase, such as fear of the pregnant woman, lack of medical training in vaginal delivery, and labor complications.

The CS delivery rate in NTSV measures the proportion of live babies born at or beyond 37.0 weeks gestation to women in their first pregnancy that are singleton (no twins or beyond) and in the vertex presentation (no breech or transverse positions) via cesarean birth [2].

Preventing the first unnecessary CS is critical as 90% of women who undergo a CS will have CS with subsequent births; conversely, 90% of women who give birth vaginally will continue to have successful vaginal births [3]. In 2008, WHO estimated that 6.20 million unnecessary CS were performed, costing 2.32 billion US dollars [4]. We aimed to study the impact of improvement interventions on decreasing NTSV cesarean delivery rate in the context of the risks and benefits of vaginal delivery compared to cesarean delivery.

Methods: In September 2021, the median NTSV Cesarean delivery rate at Al-Hada Armed Forces Hospital reached 48%, which was remarkably higher than the Ministry of Defense Health Services (MODHS) benchmark of 26.8%. Therefore, implementing improvement interventions to reduce unnecessary NTSV CS was an urgent need and a high priority. The project extended for nine months, and the Plan-Do-Study-Act was our quality improvement methodology. Time-serious pre- & post-analytical technique was used with a run chart to analyze the data & identify the impact of improvement interventions. Our improvement interventions targeted the hospital system, healthcare providers & pregnant women through standardizing clinical practice guidelines, focused education, and training, structured mandatory second opinion for cesarean section indication, antenatal childbirth preparation classes for pregnant women and one of the successful interventions

implemented was the recognition of good performers, sharing of blinded physician-level cesarean delivery rates for NTSV births. In addition, we provided all physicians with a biannual letter with personal and departmental rates for NTSV cesarean delivery. There is no Ethical consideration in the study.

Results: Monthly, we collected data about the delivery mode, the maternal medical condition and outcomes, and the neonatal outcomes. To monitor our progress, we compared the NTSV Cesarean section delivery rate of the 12 months preceding the interventions with the 12 subsequent months. The median NTSV Cesarean section delivery rate declined from 48% to 25% over one year; this decline was associated with an estimated cost-saving of 3,805,650 SAR.

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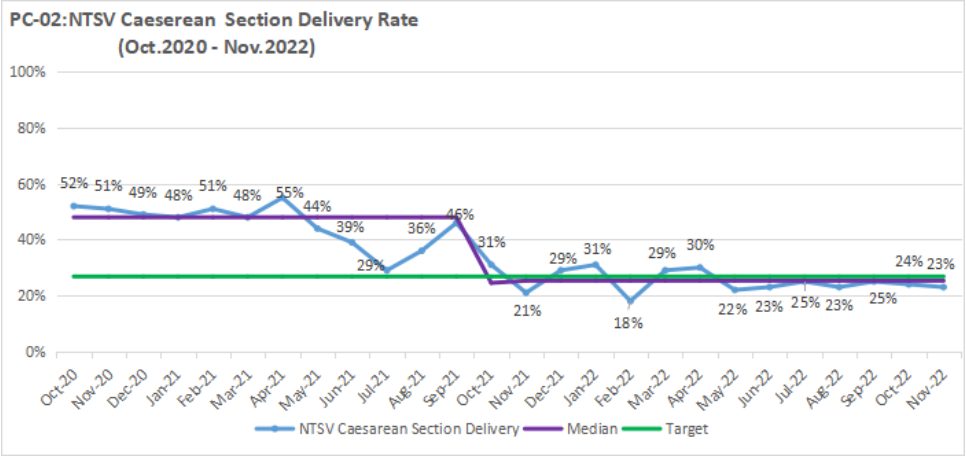

Conclusion: In conclusion, the quality improvement initiative reduced the NTSV cesarean delivery rate without increasing incidence of fetal or maternal complications.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-1949

CAMBODIA'S JOURNEY TO ACHIEVING ISQUA ACCREDITATION OF THE CAMBODIAN HOSPITAL ACCREDITATION STANDARDS (CHAS)

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Introduction: Establishing a national accreditation system was a major strategy of the 2017 Cambodian National Policy on Quality and Safety in Health. In response, the USAID funded, FHI 360-led Enhancing Healthcare Activity (EQHA) developed a concept note to establish a Cambodian national healthcare accreditation system under the leadership of the Secretary of State and Chair of the Quality Improvement Working Group (QIWG). One of the recommendations was to develop the Cambodian Healthcare Accreditation Standards (CHAS).

Methods: The CHAS was planned, developed, and evaluated through a rigorous national consultative process, incorporating views from the Ministry of Health (MOH), non-governmental organizations, regulatory agencies, professional groups, and international experts. It also considered ISQua principles related to patient safety, continuous quality improvement, and person-centered care.

A Hospital Accreditation Standards Development Workshop was held in November 2019, during which participants agreed on:

- Fifteen steps to guide the standards development process
- A framework that included a definition of quality
- Fifteen subject areas to categorize the standards
- A system for weighing and scoring standards
- The appointment of technical working groups to develop the standards, and
- A standards development timeline.

The first draft of the CHAS was produced in February 2020 and reviewed by two international healthcare standards and accreditation experts if they met ISQua principles and were evidence-based.

Twenty-three public and private hospitals of varying sizes and locations field tested the standards from February-April 2020. Data and feedback were collected, analyzed, and changes made as needed. A final version of the CHAS was submitted to the MOH for

endorsement and then recommended to be submitted to ISQua for accreditation.

Results: The MOH, with EQHA support, submitted the ISQua Self-Assessment Tool along with supporting evidence in January 2021.

Following the survey and factual review, the CHAS received accreditation status for four years (June 2021-June 2025), the first international recognition of the Cambodian national healthcare accreditation system, and has been approved by the MOH in June 2022.

Having ISQua accreditation means that Cambodia is prioritizing quality improvement and patient safety (QI&PS) within the country's healthcare services as per ISQua's mission "to inspire and drive improvement in health, and the safety and quality of healthcare worldwide." It also helps assuring that the MOH's CHAS meets international best practice requirements and plays a major role in upholding professionalism and promoting public trust. With ISQua recognition, the CHAS can also serve as a model for other countries in the region that are developing their accreditation standards.

Conclusion: The development of accreditation standards could be the first step countries take toward an accreditation system, and, as the Cambodian experience demonstrates, it is not necessary to establish an accreditation body before developing accreditation standards.

Cambodia's experience also suggests that to obtain ISQua accreditation, the standards must be planned, developed, and evaluated through a rigorous national consultative process, incorporating various stakeholders' views. It further suggests the importance of aligning with ISQua principles.

Countries wishing to obtain ISQua accreditation of their standards should consider developing them in a participatory way and according to ISQua principles from the very beginning of the development process.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1950

COMPARING RATES OF ADVERSE EVENTS DETECTED IN INCIDENT REPORTING AND THE GLOBAL TRIGGER TOOL: A SYSTEMATIC REVIEW

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Introduction:

Problem description: Incident reporting systems are advocated internationally for capturing learning from unsafe healthcare delivery. The information they collect on the frequency of harm to patients (adverse events) is generally of poor quality, and some incident types (e.g., diagnostic errors) are under-reported. Other methods of collecting patient safety information using medical record review, such as the Global Trigger Tool, have been developed.

Objectives: The aim of this study was to undertake a systematic review of rates of adverse events using the Global Trigger Tool compared with adverse event rates detected by incident reporting systems.

Methods: The review was conducted in adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. Studies published in English, which collected adverse event data using the Global Trigger Tool and incident reporting systems, were included.

Ethics: Not applicable as study was a systematic review with peer reviewed publications as the source.

Results: In total, 13 studies met the inclusion criteria. All studies were undertaken in hospitals and were published between 2006 and 2021. The studies were conducted in six countries with eight (62%) in the USA. Studies reviewed 22,501 medical records using the Global Trigger Tool across 106 institutions finding 7,087 adverse events.

The percentage of adverse events detected using the Global Trigger Tool that were also detected in corresponding incident reporting systems ranged from 0 to 37.4% with an

average of 7.4% (SD 9.4; median 4, IQR 5.6). Eleven of the thirteen studies found less than 10% of the adverse events detected using the Global Trigger Tool were also found in corresponding incident reporting systems.

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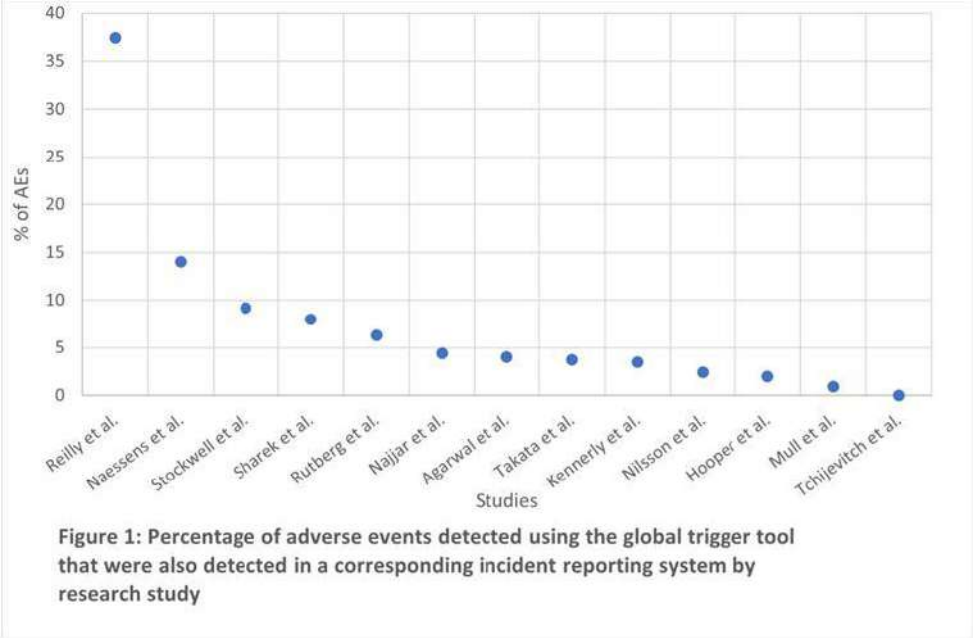

Figure 1: Percentage of adverse events detected using the global trigger tool that were also detected in a corresponding incident reporting system by research study

Conclusion: This review is the first to undertake a standalone systematic review to answer a recurring question in the quality and safety field: comparing rates of AEs using the GTT with AEs detected via IRS.

The greater than ten-fold gap between the adverse event detection rates of the Global Trigger Tool and incident reporting systems is strong evidence that the rate of adverse events collected in incident reporting systems in hospitals should not be used to measure or as a proxy for the level of safety of a hospital.

The primary implication for policy and practice is to delineate the purpose of incident reporting systems, other data sources, and methods of measurement for patient safety. Departments responsible for patient safety in health systems should explicitly state in policy that use of incident reporting systems, from the perspective of patient safety improvement, should be to analyse contributing and contextual factors to develop preventive and corrective strategies. Policies and the practice of quantifying different incident types in safety and quality committees, and executive and board reports, should be strongly qualified with the limitations of incident reporting systems of under-reporting adverse events.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1953

BUILDING RESEARCH CAPACITY IN HEALTH PROFESSIONALS FOR IMPROVING THE QUALITY OF CARE

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Introduction: Building research capacity is a critical strategic component of healthcare workforce development, helping to ensure the quality and currency of evidence-based health care. An important goal of research capacity development is the generation and application of new knowledge to improve health services. The Festival of Ideas is an Australian, Tasmanian intervention and is delivered in partnership between the Tasmanian Health Service and the University of Tasmania. The Program commenced in 2018 starting with a focus on Allied Health professionals, but has grown into a multidisciplinary Program. It includes strategic components such as practical organisational support protected time for research, research competency development via experiential learning, research partnership development and regular peer-support. Participants undertake a clinically inspired and owned research project, under the guidance of an academic mentor. Most projects involve health service improvement interventions and evaluations. This presentation reports on the preliminary evaluation of the Program.

Methods: A mixed-methods realist evaluation was used to test Context, Mechanism, Outcome hypothesis informed by the literature on determinants of Allied Health research performance and an intervention logic model. Questionnaires and focus groups were used at intervention commencement, 6 month and 18 month follow-up timepoints. A focus group amongst Allied Health managers was conducted 18 months after the intervention commenced. Progress and research products (project plans, ethics submissions, data sets, publications) have been used to assist the evaluation. The data collection methods were designed to assess process, impact and outcome measures.

Results: The first cohort participants carried out 10 research projects with 6 projects successfully completed. Participants had a varied demographic profile (80% female, 70% less than 45 years, practice experience ranging from 2.5-25 years (mean 14 years) and distributed across 5 Allied Health professions (Occupational Therapy, Dietetics, Podiatry, Physiotherapy, Social Work). All have presented their findings at a variety of forums.

Management and peer support proved to be crucial in project progression. The outcomes of participants projects demonstrate the benefits of practice-based research embedded as core health business. Many reported outcomes included increased organisational efficiency, staff satisfaction, improved patient satisfaction and hospital avoidance.

Conclusion: Organisational investment in health service research in partnership with a university contributes to building capacity for evidence based care providing better patient and organisational outcomes. The combination of sustained manager and peer support, partnerships with academics can build a research culture that drives quality of care.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-1955

IMPACT OF THE COVID-19 PANDEMIC ON HEALTH CARE DELIVERY AND THE NEED TO CO-DESIGN WITH THE CLINICAL CARE TEAM

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Introduction: The Accreditation Council for Graduate Medical Education (ACGME) accredits all postgraduate medical education programs for physicians in the US. The ACGME's Clinical Learning Environment Review (CLER) Program conducts periodic site visits to the hospitals and other clinical sites that serve as clinical learning environments (CLEs) for more than 150,000 resident physicians. Between October 2020-April 2022, the CLER Program conducted a special assessment to understand the impact of the COVID-19 pandemic on CLEs. Several key themes emerged speaking to opportunities for optimizing patient care and physician training as CLEs look to the future, including engaging clinical care team members to innovate and problem solve changes in health care delivery.

Methods: For the special assessment, the CLER Program conducted remote site visits to a stratified random sample of 287 CLEs. The site visits included group interviews with (1) executive leaders, (2) patient safety/quality leaders, (3) resident physicians, and (4) program directors. All visits were conducted using a structured questionnaire that included closed- and open-ended questions. Resident and program director responses to closed-ended questions were aggregated as percentages for each CLE and presented as median and interquartile range (IQR). Analysis of the findings also included a series of group discussions with CLER site visitors to gain an in-depth understanding of the key findings and discern common themes. This qualitative approach to analysis was inductive in that the findings and themes emerged from the content of the responses.

Results: In many CLEs, there were changes in patient care processes (eg., increased ambulatory-based procedural care, enhanced home-based services) resulting from the pandemic that led to both efficiencies and deficiencies in delivering patient care. These changes were anticipated to continuously evolve.

Across CLEs, a median (IQR) of 75.5% (62.5%-87.5%) of residents and 100% (75.0%-100%) of program directors reported changes in patient care processes at their clinical site that represented sustained improvements in health care due to the pandemic. Examples of these changes included increased use of remote technology to facilitate care coordination

with family members and the clinical care team, expanded use of remote home monitoring, and use of telemedicine to replace in-person follow-up appointments for patients who have transportation issues or reside in remote locations.

A median (IQR) of 51.0% (38.5%-66.7%) of residents and 57.9% (40.0%-100%) of program directors also reported challenges in patient care processes at their clinical site that will persist for the next few years due to the pandemic. Challenges included managing the influx of patients presenting with more advanced diseases due to delaying or avoiding medical care during the pandemic, limited access to video-enabled technology that prevents patients from receiving care using telemedicine, and staffing shortages leading to delays in patient throughput that affected the quality of care and exacerbated by new and temporary staff unfamiliar with organizational protocols.

Conclusion: These findings present opportunities to enhance, improve, and test various ways to deliver care by co-designing with clinical care team members, including resident physicians, given their position on the front lines. Purposeful engagement of clinical care team members can involve examining new and existing care models to determine what is working and what could be improved to innovate, problem solve, and optimize patient care and learning.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-1961

ARE TRAINED FAMILY PLANNING SERVICE PROVIDERS COMPETENT? IMPROVING CAPACITY BUILDING MECHANISMS TO ENSURE THE QUALITY OF CARE IN FAMILY PLANNING

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Introduction: Family planning (FP) service provider's competence is critical to delivering quality FP counselling and services. Hence, the need to continuously build their capacity until they become proficient in FP service provision. However, in many parts of the Philippines, most capacity building activities end with the training itself. In 2019, USAID ReachHealth Project found that only 302 of 1,969 FP-trained primary care providers in 12 localities in Luzon, the country's biggest island, have undergone a post-training evaluation. To address this gap, local governments, conducted diagnostic workshops (DW), a structured and efficient process of assessing, reinforcing, and certifying the competence of nurses and midwives in FP service delivery.

Methods: The DW for FP gathers 15 to 25 individuals to undergo knowledge assessment through written tests, and skills assessment through objective structured clinical examination (OSCE). It assesses providers knowledge and skills on health assessment, counselling, and provision of commodity-based contraceptives and natural FP methods using standard checklists and scoring system. It allows program managers and trainers to objectively identify providers' weaknesses and address them purposefully. USAID ReachHealth used statistical methods to retrospectively analyze the results of DWs conducted in seven cities and provinces from 2019 to 2022, identify the common weaknesses among FP-trained providers, and determine the concepts and skills that must be emphasized or reinforced during trainings and succeeding coaching activities. The analysis was also aimed at informing the strengthening of FP capacity building interventions of the Philippine Department of Health.

Results: Results of twenty-one diagnostic workshops attended by 371 health professionals were reviewed. Fifty-three percent of the assessed FP providers were found competent and endorsed for certification while 47% either had to be coached or retrained. While most of the evaluated providers had strong interpersonal skills, they needed additional knowledge and skills in addressing missed contraceptive pills, providing information on lactational amenorrhea method, helping clients transition from one contraceptive method to another,

and providing structured counselling based on the client's health needs and reproductive intention. These aspects also needed reinforcement in the country's basic FP courses.

The DW did not only ensure that trained FP providers have adequate capacity to deliver quality FP services but also helped enhance the country's competency-based training in FP, as well as the FP course for community health workers.

Conclusion: Not all trained providers are competent in FP service delivery. Hence, continuous capacity building that specifically targets their weaknesses, is necessary. The DW is an effective and efficient way to assess and improve the knowledge and skills of FP providers. It is also a viable approach to strengthening FP training activities.

However, the intervention should be linked with continuous coaching and mentoring, for it to not just be a skills assessment but also a purposive capacity building intervention that addresses the service delivery weaknesses of FP providers. Moreover, local governments and FP program managers should be capacitated in using the results of the diagnostics in strengthening FP programming, especially the aspects that directly affect how health professionals provide FP services (e.g., availability tools and job aids, health facility conditions, conduct of coaching and mentoring, etc.)

Disclosure of interest: None declared.

ISQUA2023-ABS-1971

COMPREHENSIVE MEASUREMENT OF BURDEN OF DISEASE DUE TO ADVERSE EVENTS: A NEW ATTEMPT LINKED TO PATIENT SAFETY INCIDENT INQUIRY

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Introduction: A methodology for how to comprehensively and reasonably measure the burden of disease due to patient safety has not been clearly established. In this study, a new and systematic method of measuring the disease burden due to patient safety was attempted by utilizing the results of medical record review, which is a representative method of identifying the current state of patient safety and commonly used as the gold standard.

Methods: Using the characteristics of preventable adverse events identified in Patient Safety Incidents Inquiry (PSII) conducted to accurately monitor the level of patient safety in Korea, the resulting disability-adjusted life years (DALY) and economic costs were estimated. DALY was calculated as the sum of the YLD calculated for patients who suffered more than permanent disability due to preventable adverse events and the YLL calculated for patients who died due to preventable adverse events. The economic cost of preventable adverse events was calculated using the main diagnostic codes of patients who suffered preventable adverse events identified as prolonged hospitalization in PSII and the average medical cost information by disease category and age group.

Results: Estimates of DALYs due to preventable adverse events were 1,114.4 DALYs per 100,000 populations for the minimum standard and 1,658.5 DALYs per 100,000 populations for the maximum standard. Compared to the results of the 2015 Korea Burden of Disease, the ranking of DALY due to preventable adverse events was 6th for the minimum standard and 3rd for the maximum standard. The annual medical cost in 2016 due to adverse events was estimated to be approximately KRW 870 billion (approximately 704 million US dollar). Medical costs due to preventable adverse events were calculated to be approximately KRW 150 billion (approximately 120 million US dollar) as a minimum standard and approximately KRW 300 billion (approximately 240 million US dollar) as a maximum standard.

Conclusion: If a more standard method of systematically calculating the disease burden due to patient safety proposed in this study is used, it will be possible to compare the size of the patient safety problem with those of other diseases. The results of this study indicate that we still need to pay more attention to the issue of patient safety.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1975

A TAXONOMY OF SAFETY INCIDENT REPORTING IN CARE HOMES

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Introduction: Significant effort has been made to develop robust safety incident reporting systems and for these systems to be implemented in acute healthcare settings. Far less is known about safety incident reporting in care home settings (also known as long-term care), which tend to place a different emphasis on risk management. Care homes exist in a different but interlinked regulatory and fiscal context to healthcare settings with large numbers of providers of varying sizes and service user profiles. Exploratory work identified that implementation of incident reporting systems is variable both between and within providers with implications for organisational learning. This study aimed to better understand current implementation of incident reporting systems in care homes by developing a taxonomy of incident reporting systems and processes.

Methods: The taxonomy was developed following an established process for taxonomy development [1] using a conceptual-to-empirical pathway. Data for the taxonomy were obtained from three sources: structured interviews, a systematic review of literature, and a review of care home incident reporting policies obtained from interview participants and desk-based internet searches. Each of the data sources formed individual sequential iterations of the taxonomy until subjective and objective ending conditions were met.

Results: Structured interviews (N=75) took place with care home management including registered managers, owners, directors and nurses, recruited across all regions of England. The systematic review of literature (N=81) included 71 papers describing types of safety incidents in care homes, 63 papers reporting process and systems for error identification, and 33 papers examining barriers and facilitators to incident reporting. The policy review utilised 26 policies relevant to incident reporting procedures used in the care home sector. The final iteration of the taxonomy contained four meta characteristics; *care home context*, *design of incident reporting system*, *process of reporting incidents*, and *indicative core content of reports*; and thirteen characteristics. *Care home context* offers characteristics of *type of care*, *case mix*, *size of organisation* and *number of beds per home*. *Design of incident reporting system* contains characteristics of *system* and *points of entry*. *Process of reporting incidents* generated characteristics of *responsible for reporting*, *incident report pathway* and *feedback/outcomes. Indicative core content of reports* offers characteristics of *resident*

demographics, *type of incident reported*, *description of incident* and *actions taken*. Subthemes flow from characteristics, for example, 'type of care' leads onto *residential*, *nursing* and *mixed*; 'feedback/outcomes' offers a choice of *written feedback*, *verbal feedback* and *no feedback*.

Conclusion: The developed taxonomy has the potential to contribute towards improving organisational learning as well as informing future research in the care home setting, which is aided by being flexible, adaptable and expandable as incident reporting processes and technology advance. For instance the taxonomy can be used by care home providers, commissioners and regulators to examine and map existing incident reporting systems both within and between providers to better understand the risk management environment. The taxonomy can be used in research studies on care home safety incident reporting to inform sampling procedures and data analysis.

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Disclosure of interest: None declared.

ISQUA2023-ABS-1993

ADDRESSING THE AFTERMATH OF THE COVID-19 PANDEMIC: A QUALITY IMPROVEMENT COLLABORATIVE TO OPTIMIZE THE USE OF ANTIBIOTICS IN ARGENTINE INTENSIVE CARE UNITS

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Introduction: Antibiotic resistance is a rapidly worsening problem worldwide. Antibiotic Stewardship Programs (ASPs) have been developed for optimizing the treatment of infections, to reduce infection-related morbidity and mortality, to limit the appearance of multidrug-resistant organisms (MDROs), and to reduce unnecessary antimicrobial use. Our goal was to implement a multi-faceted intervention including a range of antimicrobial stewardship strategies to reduce the overuse of antibiotics and increase the prescription of narrow-spectrum agents in Intensive Care Units (ICUs).

Methods: Quality Improvement Collaborative (QIC) with an uncontrolled interrupted time series design, preceded by a formative phase. Nine ICUs from Argentina were enrolled, beginning the project in March 2022 with a pre-intervention period (PP) of 16 weeks and an intervention period (IP) of 22 weeks to date (with the aim of completing 32 weeks of this phase as planned). We deployed the intervention through learning sessions and periods of action using plan-do-study-act cycles. ASP consisted of audit and feedback about the use of antibiotics, facility-specific treatment guidelines or clinical pathways, infection-based interventions focused on improving diagnostic accuracy, tailoring of therapy to culture results and optimizing the duration of treatment (antibiotic timeout), pharmacy-based Interventions and education.

Results: We collected data from 357 patients in PP and 362 in IP. This preliminary analysis shows that patients in the IP presented higher rates of severity factors and negative clinical outcomes: higher APACHE-II score (17(12-21) vs 15(11-20)), SOFA score (6(4-8) vs 5(3-8)), renal failure (41.2% vs 33.1%), septic shock (40.3% vs 33.9%), and mortality (34% vs 26.3%). So far, trends seem to evidence that the implementation is being effective in the optimization of the use of antibiotics, with less defined daily dose (DDD) of antibiotics per 1000 in-patient days in the IP (1127(CI_{95}:1110-1143) vs 1239(CI_{95}:1216-1261) in the PP, $p<0.001$), and less antibiotics days of therapy (DOT) per 1000 occupied bed-days in an ICU in the IP (1099(CI_{95}:1087-1110) vs 1190(CI_{95}:1168-1211) in the PP, $p<0.001$. Compliance with de-escalation (proportion of empirical therapy changed to pathogen-directed therapy as soon as culture results are available) improved from 39% to 64% ($p=0.001$). Rates of hospital

acquired infections (HAIs) caused by multi drug resistant bacteria (MDR) (ventilator-associated pneumonia –VAP-, central line-associated bloodstream infections –CLABSI-, catheter-associated urinary tract infection –CAUTI-, and C. difficile infection does not present before admission) don´t seem to have changed significantly through this study period (Figure 1).

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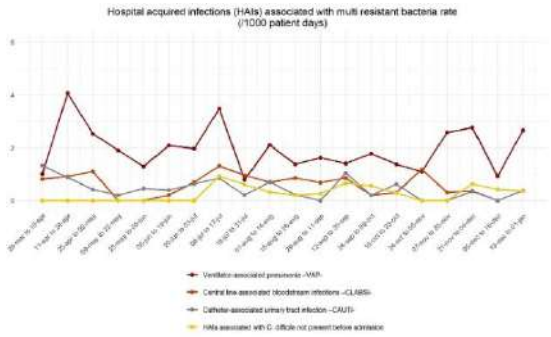

Conclusion: Preliminary results from a QIC implementing ASP showed less antibiotic use (DDD and DOT), and better compliance with de-escalation. Although, we couldn't observe lower rates of HAIs associated with MDR bacteria during the study period.

Disclosure of interest: E. Garcia Elorrio Grant / Research support from: Pfizer Co, V. Rodriguez Grant / Research support from: Pfizer Co, F. Jorro- Baron: None declared, C. Loudet Grant / Research support from: Pfizer Co, W. Cornistein Grant / Research support from: Pfizer Co.

ISQUA2023-ABS-1994

IMPROVING ANTIBIOTICS USE IN PEDIATRIC HOSPITALS IN ARGENTINA: A FEASIBILITY STUDY

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Introduction: Antimicrobials are the most prescribed medicine in pediatrics. It has been demonstrated that between 20 to 50% of these prescriptions are potentially unnecessary or inappropriate, and that many children still receive broad-spectrum antibiotics for viral infections or antibiotic courses that are significantly longer than needed. Antibiotic Stewardship Programs (ASP) have been developed for optimizing the treatment of infections.

Our aim was to test the feasibility of a multifaceted intervention to enhance the quality of antibiotics prescription by reducing its overuse and increasing the use of narrow-spectrum agents, composed of a range of antimicrobial stewardship strategies in LMIC pediatric hospitals

Methods: We conducted a Quality improvement (QI initiative) in six wards of two pediatric hospitals from Argentine, preceded by a formative phase, before-and after study design, 12 weeks of pre-intervention period (PP) and 24 weeks of intervention period (IP). We deployed the intervention through learning sessions and periods of actions, using plan-do-study-act cycles. ASP consisted in audit and feedback of antibiotics, facility-specific treatment guidelines or clinical pathway, infection-based interventions focused on improving diagnostic accuracy, tailoring of therapy to culture results and optimizing the duration of treatment (antibiotic timeout), pharmacy-based Interventions and education.

Results: We collected 217 patients in PP and 557 in IP. Patients in IP were younger (13(3-41) vs 24 (8-66) months) and more from intensive care unit (45.1% vs 34.6%). After the intervention was an increase in using of Access group antibiotics (41.2% vs 32.4%, p=0.024) and in antibiotics days of therapy (DOT) per 100 occupied bed-days (947(928-966) vs 772(716-828), p<0.001). We observed better compliance with guidelines use 65.9% PP to 75.5% (p=0.007), and no change in compliance with de-escalation (proportion of empirical therapy changed to pathogen-directed therapy as soon as culture results became available) 31.9% PP vs 26.3% (p=0.118). We had a very low rate of hospital acquired infections (HAIs) associated with multi resistant bacteria rate (ventilator-associated pneumonia, central line-associated bloodstream infections, catheter-associated urinary tract infections) through

both periods.

Conclusion: Preliminary results from a QI initiative implementing ASP in pediatric hospitals showed more Access group antibiotics use, more DOT, and better compliance with guidelines use. We observed very low rates of HAIs associated with multi resistant bacteria.

Disclosure of interest: E. Garcia Elorrio Grant / Research support from: Pfizer Co, V. Rodriguez Grant / Research support from: Pfizer Co, F. Jorro- Baron Grant / Research support from: Pfizer Co, A. Falaschi: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-1998

CO-ASSESSING THE QUALITY OF CANCER SERVICES THROUGH USING A COMMUNITY BASED PARTICIPATORY INQUIRY WITH LESBIAN, GAY, BISEXUAL (LGB) CANCER SURVIVORS

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Introduction: This participatory inquiry was based on stages of Heron and Reason's cooperative inquiry framework (1997), and emphasised doing research with people rather than on people, whilst aligning with the principles of person-centred research [1, 2]. All participants were actively involved in the decisions and processes related to the research. They were defined as co-researchers and explored their experiences of cancer care pathways, assessed the support provided, and developed a set of guidelines of best practice for cancer services and LGB people.

Methods: Participants were recruited on the basis they had experienced cancer treatment within the past five years and identified as LGB. They were recruited through purposeful sampling via LGB community organisations and word of mouth. The researcher worked with participants to co-create the methods of exploring how cancer treatment had impacted on their personhood and what mattered most to them. To support the level of depth required for the reflective process, identity maps were created. Participants were supported through methods such as art, drawing, timelines, sculpture, photography, artefacts, and collage as a means of exploration. These were used to facilitate reflection to establish their thoughts, perceptions and insights into their past experiences of care. Transcripts and extracts were shared with participants to invite further contributions. Participants were invited to participate in analysis by commenting on themes and any guidance formulated. Drawing on the themes and empirical evidence, participants outlined ideas for best practice guidelines, policy development and were approached individually to contribute to formulation of a practitioner guide. Once agreed this was shared with key stakeholders for additional feedback.

Results: Nine participants, aged 45-68, who had experienced different cancers were recruited. Their accounts revealed a broad range of issues that both corroborate and build on existing evidence. Themes highlighted expectations and experiences of both assumptions and prejudice in healthcare interactions. These experiences, along with misinterpretation of relationships with significant others, led to feelings of discomfort and reserve about self-expression. Points in care pathways where misunderstandings are more likely to occur were

identified and positive experiences used to collaboratively develop a practitioner guide aimed at improving the healthcare journey. Fifty-three individuals who had become known during the course of the participatory inquiry were approached to see if they would be willing to provide feedback as part of a stakeholder group on the final practice recommendations.

Conclusion: This research supported participants to have their voice and concerns heard and acted upon. LGB persons were found to have distinct care experiences and needs related to cancer across a variety of areas. The main findings of this research provide an evidence base for this assertion, and were used to develop a national practitioner guide with the participants and key stakeholders. The guide was aimed at raising awareness of the needs of LGB persons affected by cancer and improving the care experience. This work succeed in its aims and ensured relevance to a local community of LGB people affected by cancer through co-design.

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Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2018

DEVELOPING THE AGED CARE WORKFORCE THROUGH BESPOKE UNIVERSITY EDUCATION: INTRODUCTION

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Introduction: Australia's Aged Care Workforce Strategy, released in 2018, was developed in collaboration with industry and community representational bodies. A key imperative identified was workforce education to improve residents and client outcomes, and quality of care. This strategic direction recognised that higher education could play a key role in the development of current and future competencies and skills within the Aged Care industry. It covers current job roles, skills, capabilities, competencies, training, and skill needs linking it to higher education. Furthermore, additional support for on-the-job and non-formal learning is encouraged.

In response to this imperative a collaboration between Australian Aged Care provider, OneCare, and the University of Tasmania's School of Nursing developed a series of interactive masterclasses based on existing gaps in complex care, palliative care, leadership and Quality Improvement. This presentation reports on the findings of the Complex Care masterclass. Nursing staff (n=20) from 5 Tasmanian Residential Aged Care Facilities (RACF) were involved in the education.

Methods: A scenario-based pedagogy using the University of Tasmania Simulation Lab was undertaken. Post-scenario debriefing was provided for participants to engage in dialogue, self-reflection, and feedback that support and enhance knowledge transfer. A post-masterclass survey was designed based on the Kirkpatrick Model of four levels of training evaluation to determine the impact of the education provided.

Results: With a 100% response rate all participants agreed that the education provided was relevant and that they could apply their learning to their work. 85% of the participants agreed that the Masterclass provided them with new knowledge and skills. All participants agreed that working through the scenarios in the simulation lab increased their skills in recognising sepsis and 70 % of participants in increasing their skills in wound management.

Conclusion: The evaluation demonstrates that the educational approach taken contributed to participants learning. The scenario-based simulation program allowed learners to relate

to their experience and to apply new theory and skills directly to their practice environments. Caution needs to be taken with the findings, as at this stage transfer of learning within the RACFs has not been assessed. It has become apparent that universities can play a role in developing the Aged Care workforce, benefiting residents, clients and Aged Care Facilities.

Disclosure of interest: None declared.

ISQUA2023-ABS-2019

IMPORTANCE OF NON-MEASURABLE METHODS OF NURSING ASSESSMENT OF INFANTS AND CHILDREN TO MONITOR FOR CLINICAL DETERIORATION

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Introduction: Nurses provide comprehensive, safe, high-quality care to prevent or minimise harm, assist in treatment and recovery of illness or injury. Nursing involves physiological assessment, requiring a range of clinical skills, knowledge, and understanding of individual patient needs. Despite universal recognition of physical assessment influencing patient outcomes, defining nursing assessment continues to present challenges.

Nursing assessment in paediatrics involves layers of complexity requiring flexibility to adapt care according to chronological age and development stages. Age-specific vital sign parameters, compensatory mechanisms, nuanced behavioural and developmental patterns and parental influence, all inform the paediatric patients' clinical picture.

Evidence from Root Cause Analysis and the international literature demonstrate that vital signs are not always performed and recorded competently to ensure the best clinical outcomes for the infants and children concerned. Findings from adult studies demonstrated that the physical assessment skill set regularly used by nurses/midwives in daily practice has progressively grown smaller over time. It has been postulated that the narrowing of the set of core skills limits the ability of nurses to monitor patient health and to act in timely and appropriate manner.

A review of local data from clinical governance unit between January-July 2020, reported that 41% (n=437) of deteriorating patient incidents were related to incomplete monitoring or observations, and 18% (n=193) were related to a failure to recognize deterioration

Despite embedded safety mechanisms, such as Paediatric Early Warning System (PEWS) which assist clinicians in recognising when vital signs are outside of the normal physiological range, children continue to deteriorate, with those with chronic/complex conditions more likely to be undetected. This study sought answers about why paediatric patients deteriorate within specialised health services. Ethics approval was obtained.

Methods: A scoping review supplemented a mixed-methods study involving observations

and medical record reviews undertaken across two Australian tertiary children's hospitals. Data required quantitative and qualitative analysis.

Results: Over 550 patient medical records were reviewed plus an additional 50 observed episodes of patient assessments (patients aged 1 month – 17 years). Themed observational data were examined for potential barriers to physical observation and vital signs when compared with mandated local policy. Findings provided a unique insight into the scenarios and paediatric patient observation, vital sign and physical assessment, and will inform changes to nursing practice and education.

Conclusion:

- Paediatric nurses describe the process of detecting deterioration as encompassing patient assessment and observation, responding to assessment findings, and a gut feeling based on intuition gained through experience
- Intuition and clinical judgement are subjective, non-measurable methods of assessment
- Nurses use intuition and clinical judgement in conjunction with objective methods (such as PEWS) when undertaking patient assessments
- Nurses' intuition and clinical judgement are not valued as highly as objective assessment data
- Intuition and clinical judgement lack clinical language
- How nurses use intuition is not well understood
- Attention should be given to nurses' perceptions of how both clinical judgement and PEWS should be seen as essential in assessment of patient condition.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-2032

IS EXPERIENCE-BASED CO-DESIGN KEEPING ITS PROMISE? A STATE-OF-THE-ART LITERATURE REVIEW OF HOW EXPERIENCE IS REPRESENTED IN PUBLISHED EMPIRICAL STUDIES

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Introduction: Experience-based co-design (EBCD) aims to reform healthcare service delivery through improving the experience of consumers and users of the service. Accurately representing their perspectives ensures improvements that they value most are prioritised for codesign. Using a state-of-the-art literature review, we synthesised the evolving scope and nature of methods to gather experiential knowledge reported in the EBCD literature.

Methods: A comprehensive systematic electronic search of four databases was conducted from inception to December 2022. Data were extracted using a structured data extraction tool. Thematic synthesis was undertaken to identify the scope and nature of the literature, justification for using EBCD methodology, collection, representation of experience in practice, and methodological conclusions including facilitators and challenges.

Results: The steps of non-participant observations of the user/provider interface, user interviews, provider interviews, and associated data analysis in the first stage of EBCD musters deep experiential knowledge but it is also resource intensive and contributes to a lengthy improvement approach. Methods are evolving to promote inclusivity of diverse user groups and move more rapidly to codesign. However, omitted steps in the methodology undermined fulfilment of core principles of the EBCD approach which may diminish its value as an accepted form of codesign.

Conclusion: Exploring human experience in dynamic health environments can be complex. Modification of methods may be necessary to promote inclusion, to overcome limited participation, to move to codesign more rapidly, or to adapt to different contexts. Drawing from reviewed articles, we make pragmatic suggestions for project teams undertaking this form of inquiry-led codesign.

ISQUA2023-ABS-2038

CANCER PATIENT DIAGNOSIS EXPERIENCE AND CARE QUALITY

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Introduction: Patient experience is an important measure of care quality. Cancer Patient Experience Surveys (CPESs) have been routinely conducted in England since 2010. Such information can identify aspects of care that are important in determining patient experience and can therefore help to prioritise areas for improvement. Diagnosis-related experiences are known to be important to cancer patients. This study aims to explore the relationship between diagnostis-related experiences and overall care rating for patients with colorectal cancer in England, in 2018.

Methods: The English CPES is conducted annually from a sample of cancer patients receiving inpatient or outpatient cancer services; patient-level responses are freely publicly available for the 2018 sample. Analysis was restricted to patients with a primary diagnosis of colorectal cancer (CRC) who had received a diagnosic procedure in the preceding 12 months and who had not begun treatment more than 12 months previously. To reduce patient heterogeneity, those diagnosed by screening were excluded. The primary analysis explored patient responses to six diagnosis-related questions: number of pre-referral GP visits; adequacy of pre-test information; understood test results; informed could bring family to cancer revelation; understood cancer diagnosis; and received relevant written information. Standard CPES scoring of patients' categorical survey responses was used to classify responses as positive, negative or uninformative. Overall care rating was reported on a 10-point scale; as responses are skewed this was dichotomised with scores of 0-7 deemed negative, in line with previous CPES analyses. Multivariable logistic regression was used to assess the impact of negative diagnostic experiences on negative overall care rating, adjusted for confounding by agegroup and sex. Diagnostic experiences were included as predictors if statistically significant at $p<0.01$.

Results: The 2018 English CPES received 73,817 responses, including 7,646 from CRC patients, 4,069 of whom were eligible for analysis. Younger age-goups and females were more likely to report negative experiences and care ratings. All six negative diagnostic experiences were predictive of negative overall rating, in multivariable analysis, and the model had strong predictive capability (area under the ROC curve=0.77; 95% CI: 0.75-0.79). Compared to those with positive experiences, patients with negative diagnostic experiences

had a higher likelihood of having a negative overall rating; the lowest adjusted odds ratio was 1.64 (95% CI: 1.26, 2.14) for those who did not undertand the explanation of their diagnosis (19.3% of patients), and the highest was 3.5 (95% CI: 2.38, 5.14) for those who did not have sufficient information about their test beforehand (4.1%).

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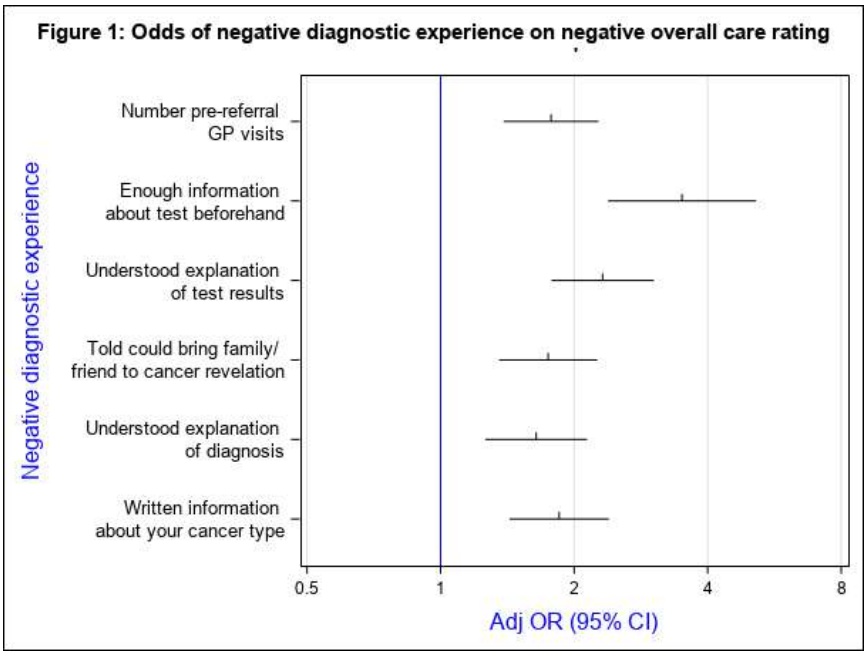

Conclusion: Diagnosis-related experiences are known to be important to cancer patients. Negative experiences to all six of the examined diagnostic question were found to be predictive of negative overall care ratings in multivariable analysis, adjusted for age-group and sex. This implies that service providers could choose to target any of these areas, from delays in initial referral through explanation of test results and provision of information, to attempt to improve service quality. Ideally, interventions would be formally assessed in trials, to determine if they result in reductions in the proportion reporting negative diagnostic experiences and the proportion reporting lower overall care ratings. Routine patient experience surveys provide valuable information for cancer health services; other clinical areas should consider implementing similar surveys.

Disclosure of interest: None declared.

ISQUA2023-ABS-2043

STEMI CODE – A QUALITY IMPROVEMENT PROJECT TO IMPROVE CARE IN ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION PATIENTS

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Introduction: Timely reperfusion of the infarct-related coronary artery is the key step in managing STEMI. From literature, it is evident that decreasing the door to balloon time has been significantly associated with decreased mortality. We aim to improve the door-to-balloon time using a physician-activated ‘‘STEMI Code’’ protocol [1].

Methods: The project was conducted at a quaternary care centre from April 2021 to January 2022. Door-to-balloon time is defined as the time from which the patient reaches the emergency department till the point of first intracoronary balloon inflation [2]. STEMI code will be activated by the emergency physician with a single coded phone dialling, once STEMI is identified. This will alert the cardiology duty specialist, the interventional cardiologist on call, catheterization laboratory technicians and nurses, CICU nursing team leader and emergency department manager simultaneously via a computer recorded voice call to their mobile phones. The primary objective is to improve the door to balloon time in STEMI patients by avoiding delay in alerting the individual team members of the STEMI primary angioplasty team.

Results: Baseline audit was conducted among 34 patients before implementation of the STEMI code. The mean D2B time duration was 72.70 ± 21.05 minutes with a range of 45 to 126 minutes. After implementing the STEMI code, data was collected from 40 patients. The D2B time ranged between 40 to 85 minutes with a mean D2B time duration of 63.41 ± 11.76 minutes. The project has shown that, with the implementation of ‘‘STEMI CODE’’, the median door to balloon (D2B) time dropped from 72.7 minutes to 63.41 minutes. Moreover, the upper range of D2B time decreased from 126minutes to 85 minutes.

Conclusion: Implementation of ‘‘STEMI CODE’’ has decreased the door to balloon times in acute ST elevation myocardial infarction. This will in turn help in improving the clinical outcome in these patients by achieving earlier revascularisation.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2062

THE IMPORTANCE AND SIGNIFICANCE OF AN ISQUA ACCREDITED NATIONAL HOSPITAL ACCREDITATION SYSTEM FOR CHINA AND BEYOND

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Introduction: The Healthcare System of China provides comprehensive health and hospital care services to a population of 1.4 billion. To drive improvements in healthcare quality and safety, China launched a nationwide "China National 3A Hospital Accreditation System (CN3A)" in 1989 to accredit hospitals with best facilities and quality. The System comprises of comprehensive evidenced-based accreditation standards, criteria and elements; over the past 30 years, it achieved remarkable successes in positive patient outcomes. However, the System has not yet attained international recognition. The Shenzhen Hospital Accreditation Research Center (SHARC) was established as an independent third-party hospital accreditation organization in 2020 with the mission to internationalize the CN3A System. SHARC has refined the original CN3A System with addition of clauses to meet international requirements following the ISQua External Evaluation Association's (IEEA's) principles and standards.

Methods: To achieve this goal, SHARC has adopted the following approaches and methodologies:

1. Set up an expert committee, comprising of ISQua, ACHS and CN3A experts to lead the development process.
2. Design the Standards Development Plan underpinned by the IEEA Guidelines and Principles, including
    - Extensive research on recommendations and standards of national and international professional organizations, particularly the Standards of other renowned Accreditation Organizations;
    - Studying evidence-based medicine, internationally recognized guidelines, and practical experience of other countries;
    - Summarizing the previous accreditation experience in China;
    - Learning from the experience at the University of Hong Kong-Shenzhen Hospital in attaining double accreditation by CN3A and ACHS.
3. Develop the Surveyor Training Programme in compliance with IEEA requirements, by integrating international concepts and practices with previous policies and practices in China.

Results:

1. The “International Hospital Quality Accreditation Standards (2021 Version) (IHQAS)” thus developed was assessed by IEEA experts and passed with a high scoring rate of 97%, proving that our Standards are fully Relevant, Understandable, Measurable, Beneficial, and Achievable. Our IHQAS was officially accredited by IEEA in in February 2022.
2. The IEEA accredited IHQAS has been endorsed by China National and the Shenzhen Municipal Health Commission for accreditation of Class 3 hospitals in China, including Hong Kong and Macau SAR.
3. Training Programmes for Founding Surveyors were conducted from October 2022 to January 2023. A total of 45 experienced CN3A surveyors (with an average of 12.82 years of survey experience) and 18 ACHS/IEEA surveyors were trained to use IHQAS.

Conclusion: SHARC has successfully developed the IEEA-accredited IHQAS by integrating the CN3A in China (with its unique characteristics, culture, practice and experiences), together with other international accreditation standards. This is a historic milestone in the internationalization of the hospital accreditation system in China. This is especially important for enhancing healthcare quality and safety in China, as hospitals certified by the IEEA accredited IHQAS hospital accreditation system prove that they can fully comply with international standards. In addition, SHARC has built up a top leading surveyor workforce (comprising of national and international experts) to ensure hospital accreditation quality. The success of the SHARC in attaining national and international recognition of Hospital Accreditation Programme, will be an encouraging stimulation to other developing countries.

Disclosure of interest: None declared.

ISQUA2023-ABS-2063

EVALUATING INAPPROPRIATE MEDICATION USE FOR OLDER DEMENTIA PATIENTS AND ITS IMPACTS ON THE MEDICAL CARE QUALITY AND UTILIZATIONS

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Introduction: Inappropriate medication use for dementia patients may cause worse medical outcomes and consume more medical care utilizations. The American Geriatrics Society proposed in 2013 and 2014 Choosing Wisely (CW) campaign suggested that prescribing antipsychotics as the first choice to treat behavioral and psychological symptoms of dementia patients may cause adverse effects. This leads to a critical research question of what are the situations and influences of inappropriate medication use on dementia patients in Taiwan. Because limited study exists in Taiwan, there is a great need to explore this issue in detail for improving patient care quality.

Methods: Patients with *International Classification of Disease, 9th Revision, Clinical Modification* (ICD-9-CM) codes 290, 291, 294, 331, and *10th Revision, Clinical Modification* (ICD-10-CM) codes F01, F02, F03, G30 were identified as dementia patients in the study. The research objects were patients with age over 65 years old who were newly diagnosed with dementia and were grouped as the case group or control group based on whether to use antipsychotics as a first choice or not. We analyzed the dataset collected retrospectively from a medical center in southern Taiwan from January 1, 2014, to December 31, 2021. We used the antipsychotics indicator to observe the use trend over the years and conducted descriptive and inferential statistics to examine what are the clinical cares for older dementia patients in this medical center compared to CW suggestions. Statistical analyses included the Multivariate logistic regression for the adverse outcome, the Negative binomial regression for the medical care utilizations, and the Multiple linear regression models for the natural logarithms of medical expenditures. This study received IRB approval from the Kaohsiung Veterans General Hospital, Taiwan (KSVGH22-CT8-14).

Results: From 2018 to 2021, the percentage of newly diagnosed elderly dementia patients who received antipsychotics as their first choice significantly increased by 11% over time in this medical center. Multivariate logistic regression revealed that the case group had worse medical care outcomes such as hospital readmission within 30 days ($p < 0.01$) than the control group. Negative binomial regressions showed that the case group had more frequency of hospitalization ($p < 0.01$), outpatient visits ($p < 0.01$), and a longer length of the

hospital day ($p < 0.01$) than the control group from 2014 to 2021. Multiple linear regression models revealed that the case group consumed more total medication expenditures ($p < 0.01$) than the control group.

Conclusion: Enhancing clinical medication cares for older dementia patients may improve care outcomes and reduce the heavy care burdens in the studied medical center. Choosing Wisely campaign may provide an appropriate practice guideline to meliorate care and avoid potential risks in caring for older dementia patients, improving patient safety significantly.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2068

TRANSFORMING CHRONIC KIDNEY DISEASE CARE THROUGH MULTIDISCIPLINARY, MULTI-ORGANISATION COLLABORATIVE QUALITY IMPROVEMENT RESEARCH TO IMPROVE PATIENT CARE

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Introduction: The global burden of Chronic Kidney Disease (CKD) is rapidly increasing, and identifying and managing CKD is of great public health concern. CKD is common but requires complex multisystem involvement to treat effectively and minimize the progression to end-stage disease and the risk of cardiovascular complications. A lack of early symptoms often leads to late diagnosis and end-stage kidney disease and resulting complications have severe adverse consequences on the patients' quality of life and healthcare resource implications. CKD disproportionally affects ethnic minorities and the widening of health inequalities.

Proactive early identification and shared management of CKD in the community can reduce disease progression requiring specialised care (renal replacement therapy and transplantation). Renal disease commissioning and provision in the NHS is currently fragmented and historically concentrated on secondary and specialised areas of care. Moving care upstream is central to improved outcomes for patients.

This work aims to integrate primary and secondary care to facilitate streamlined strategies for secondary care advice and intervention and improve patient activation through educational strategies.

Methods: Evidence shows a multi-dimension approach is required for the successful transformation of a complex system. Our methods utilise multi-agency research partnerships to transform CKD care by focusing on the IHI quadruple aim; improving population health, prioritising the patient experience, improving staff experience and reducing the per capita cost of care for CKD. We created multi-agency partnerships between academia, public health, clinical networks, industry, primary and secondary care clinicians and patients in co-designing integrated CKD care across the primary and secondary care sectors. A mixed-methods quality improvement four-step action research approach was used:

- Generating data and insights
- Identifying current problems, barriers and gaps

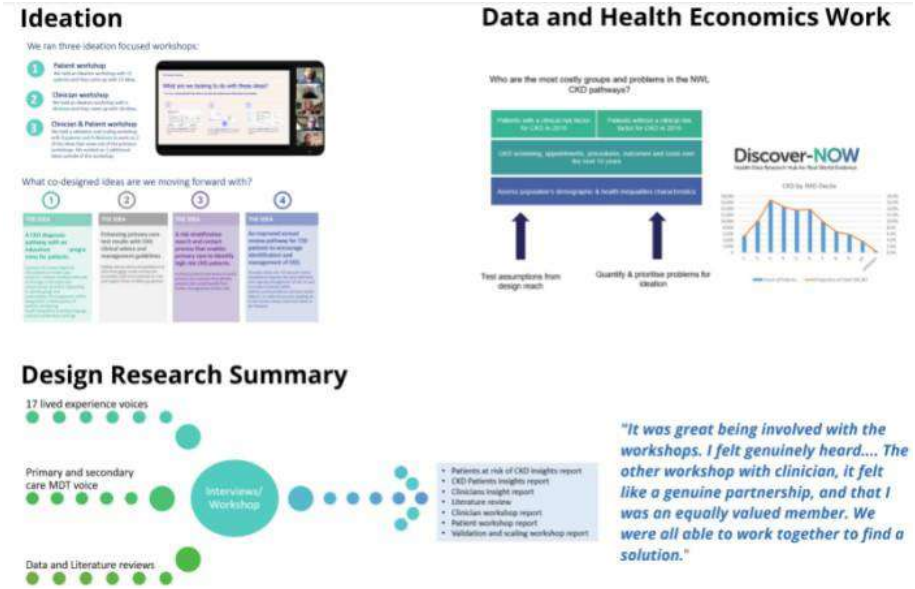
- Co-producing ideas of change
- Testing ideas and scaling in primary care

This is triangulated with patient perspectives, clinical consensus and quantitative health economic analysis of primary and secondary linked whole population data to develop improved care pathways for the 2.4 million population in North West London (NWL) including over 200 ethnic groups.

Results: This project aims to deliver the following by Q2 2023:

- Semi-structured patient interviews (at risk of, and diagnosed with CKD)
- Co-design workshops spanning 4 months with over 40 patients & clinicians to identify gaps, idea solutions and validations
- Population health analysis from a linked primary and secondary care database
- Pilot testing of four ideas of change across NWL primary care networks, and interim analysis prior to sector-wide upscaling

Image:



Conclusion: This project has harnessed the benefits of a multi-agency approach partnership to solve complex 'wicked healthcare problems'. Industry partners contributed knowledge of agile project management whilst academia provided public health and health economics expertise and created a credible and open environment for patients to influence the development of services. Healthcare professionals provided expert clinical consensus alongside real insights into health system pressures.

As healthcare systems worldwide grapple with resource pressures, similar diverse partnerships across organisations with different areas of expertise to co-produce solutions may expedite novel innovations to improve current healthcare services, enhancing population health whilst reducing inequalities.

Disclosure of interest: None declared.

ISQUA2023-ABS-2076

EFFECTIVENESS OF FIDELITY-ENHANCED RESUSCITATION TRAINING USING SIMULATION DEBRIEFING TECHNIQUE

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Introduction: All healthcare providers in the hospital must immediately perform advanced resuscitation as soon as they find a patient in cardiac arrest before the advanced resuscitation team arrives. However, even if trained, it is difficult to properly adhere to the protocol, and difficult to apply materials they learned during training. The American Heart Association has emphasized teamwork and leadership as an important concept in the educational program, as well as simulation debriefing technique that provides opportunities for self-reflective learning. Fidelity is an important factor for a successful simulation debriefing training that creates a realistic environment which increases the immersion of participants. The purpose of this study is to develop and apply an advanced life support training program with enhanced fidelity based on actual cases using simulation debriefing technique, and to identify the effectiveness of this program.

Methods: The simulation program was developed based on the ADDIE (analysis, design, development, implementation, evaluation) model. Actual cases of in-hospital cardiac arrests within the last 3 years were reviewed and revised as scenarios to fit for the purpose of this program. The workplace was photographed using the 360-degree camera to project the surrounding setting for realism enhancement. The education surrounding was set exactly like the participants' actual workplace. Team performance and teamwork was assessed for each team. After each team participated in the first scenario, an in-depth focus debriefing was implemented. And then similar case with the same range of difficulty was ran to assess the team's improvement after the debriefing session. Cardiac arrest cases that occurred in the participants' department six months before the training, and cases that occurred after the training were compared for survival rates. A self-assessment survey was taken at least 3 months after the training session to assess retainment of their competency. The study protocol was reviewed and approved by the institutional review boards of the hospital.

Results: Total of 103 healthcare providers (95 nurses, 8 physicians) from 17 departments participated. Average team performance and teamwork assessment (out of 100 points) for before-and-after debriefing were 65.6±2.3 to 89.6±1.1 and 54.2±1.0 to 86.4±1.6, respectively ($p<.001$). When cases were compared before-and-after the training, all the

quality indicators for cardiac arrest did not change, but the return of spontaneous circulation rate, and 24-hour survival rate increased significantly from 58% to 74%, and 35% to 52%, respectively. Self-assessment competency for advanced cardiac life support remained at an average of 83.0±1.2 (out of 100 points).

Conclusion: By creating a similar environment to the actual case of cardiac arrest that occurred in the department and the workplace, the conceptual, physical, and psychological fidelity was enhanced. This made the participants to get deeply immersed in simulation training, and in-depth focus debriefing was induced. This improved the performance of hospital healthcare providers' advanced life support and teamwork, as well as the survival rate of cardiac arrest patients.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2080

COMMUNITY HOSPITALS OF THE FUTURE: OPPORTUNITIES AND LIMITATIONS

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Introduction: Medical training through specialization and even sub-specialization has contributed significantly to clinical excellence in treating single dominant acute conditions. However, the needs of complex patients go beyond single diseases and there is a need to identify a group of generalists who are able to deliver cost effective, holistic care to patients with multiple co-morbidities and multi-faceted needs. The skill sets and philosophy of care of these generalists will be most relevant for hospital in-patients who no longer require subspecialized care, but whose unresolved issues still require attention. Community Hospitals (CHs) are a critical part of Singapore's shift towards a community-centric care model as the population ages. Community Hospitals of the Future ("CHoF") represents a series of emerging conversations around approaches to reimagine and redesign care delivery in CH setting in response to changing care needs arising from population shifts. This environmental scan aims to understand how CHs would have to shift in terms of (i) care delivery and resourcing, (ii) information flow, and (iii) financing for CHoF to conceptualize and meet the changing care needs in Singapore.

Methods: Qualitative interviews with CH stakeholders recruited by snowball sampling were conducted to understand the barriers and opportunities of current CHs. Semi-structured interviews were conducted with 10 senior management and management level staff from 6 Community Hospitals in Singapore. Thematic analysis was conducted to inductively elicit themes from the transcripts gathered.

Results: CHs were described as an intermediary between tertiary care and community care, and current efforts to integrate care between CHs and tertiary care were identified. Challenges identified that CHs face included the diverse CH landscape, inefficient use of resources, fragmentation of care, financing regulations, and limitations in manpower and resources. Future opportunities for CHs were also suggested, such as a changing patient profile, increase in resources to CHs to support its expanded scope, the expertise and training needed to provide the additional services needed, shared ownership of patient care, and accompanying shifts in the healthcare ecosystem.

Conclusion: With an ageing population and increasing multi-morbidity, this environmental

scan gathers insights from CH stakeholders about the role that CHs can play in Singapore's healthcare system. Future work includes the conceptualization of CHoF, and exploring other factors required for a successful implementation.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2084

VALUE-DRIVEN GENERALIST CARE PERFORMANCE FRAMEWORK FOR PEOPLE WITH MULTIMORBIDITY

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Introduction: Given the shift towards value-based healthcare and the increasing recognition of generalist care, enacting value-based healthcare for generalist care is critical. This work aims to shed light on how to conduct performance management of generalist care to facilitate value-based care, with a focus on medical care of hospitalised patients.

Methods: A scoping review of published literature was conducted. 30 publications which were relevant to performance management of generalist medical inpatient care were included in the review. The performance measures used across the studies were analysed and other qualitative findings were also obtained.

Results: We report an overall lack of research on performance management methods for generalist inpatient care. Relevant performance measures found include both outcome and process-of-care measures and both clinical and reported measures, with clinical outcome measures the most frequently reported. Length of stay, readmission rates and mortality were the most frequently reported. The insights from the papers emphasise the relevance of process-of-care measures for performance management, the advantages and disadvantages of types of measures and provide suggestions relevant for performance management of generalist inpatient care.

Conclusion: The findings of this scoping review outline a variety of performance measures valuable for generalist inpatient care including clinical outcome measures, reported outcome measures and process-of-care measures. The findings also suggest directions for implementation of such performance management, including emphasis on physician level performance management and the importance of documentation training. Further research for selecting and operationalising the measures for specific contexts and developing a comprehensive performance management system involving these measures will be important for achieving value-based healthcare for generalist inpatient care.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2085

NEW ACCREDITATION SYSTEM FOR HEALTH INSTITUTIONS IN FRANCE: A SENSE PERCEIVED BY PROFESSIONALS THAT REVIVES THE DYNAMICS OF THEIR APPROPRIATION OF THE STANDARD

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Introduction: The 5th version of accreditation of health institutions implemented by the HAS in mid-2021 aims to better meet the current challenges of quality and safety of care, with a desire to make the approach more accessible to professionals and to support patient engagement. It is based on the analysis of the result for the patient, with regard to the practices implemented by the care teams, in a managerial framework supporting collective work and quality and safety approaches.

The feedback from the first visits showed a good reception of the system by the actors in the field.

Methods: This new version has been co-constructed with healthcare professionals and patient representatives, in the sense of a shared commitment of patients and caregivers for the continuous development of the quality of care in hospital.

- Evaluation methods:

They are based more on field observations according to five variations: patient tracer (patient-caregivers in charge of the patient), tracer path (all clinical, medico-technical, logistics, ... contributing to the management of the patient), targeted tracer (drug, adverse event, ...) said system and observations.

- Strengthening the community of surveyors:

To develop the number of evaluations with the patient-tracer and the tracer path, the direct approach with field professionals and more generally the more medical orientation of the evaluations, the community of surveyors, doctors and caregivers has been strengthened. To consider the reduced medical availability in French health facilities, a new surveyor's profile has been created: the "patient-tracer-centered doctor" (MPT), occasionally reinforcing the visiting teams for the realization of "patient-tracers", with a reduced commitment of 1 to 2 days per visit instead of 3 to 5 days for other surveyors.

- Satisfaction with this new system:

The HAS commissioned an independent company to conduct a satisfaction study. The

objective is to have a quantitative study of the perceptions on satisfaction of the hospitals targets as well as the surveyors.

Results: At the end of 2022, 783 visits had been carried out, totalling 42,983 evaluations. The decisions are divided into: 23% accreditation with mention “high quality of care”, 60% accreditation, 16% accreditation under conditions (obligation of a new visit within 1 year) and 2% non- accreditation.

The community of surveyors, which previously numbered 460, is now composed of 801, including 166 coordinators, and is divided into 44% doctors (including 40% MPT) and 66% caregivers and managers.

The satisfaction study conducted among 487 hospitals (1,400 respondents) and 390 surveyors. This made it possible to measure the satisfaction rate:

- For hospitals: 7.4/10 (of which 61% with a satisfaction of 8 to 10) +1 point / to the previous iteration
- For surveyors (not previously interviewed) of 8.3.

Conclusion: This new version of accreditation of health institutions carrying a shift from process to results, support for teamwork and patient engagement as determinants of practice improvement is well received by professionals because it is more rooted in the reality of daily practices, more pragmatic and allows the direct expression of actors in the field, lead to the meaning of the approach being more widely shared within the teams. This approach helps to support the dynamic of quality development or even to give it momentum following the disorientation generated by the COVID 19 pandemic.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-2096

PATIENT EXPERIENCE EVALUATION IN TIMES OF COPRODUCTION - HOSPITAL GARCIA DE ORTA, PORTUGAL

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Introduction: This paper aims to address the impressions of the impact on the perception and evaluation of healthcare from the perspective of those who receive it, by linking the experience of the Hospital Garcia de Orta, Portugal, with the aspects of its user satisfaction, and by analysing the literature. First, a methodological analysis was made of the influence of the concept of customer experience management, promoted by contemporary marketing, on what has traditionally been called patient experience in the health sector. Then, a parallel has been drawn between the logic and profile of the consumer of goods and services and the consumer/user of healthcare services, where the concept has been adopted, but differently, and the methodology to be applied has been defined. Finally, the paper aims to contribute to the debate on the applicability of the approach in the continuous improvement of health services by stimulating reflection on the conceptual aspects that coexist between satisfaction and the patient experience pathway.

Methods: 50 specific questionnaires were used to move from research processes on patient satisfaction to a qualitative and quantitative analysis of the experience within the Complementary diagnostic and therapeutic centres (MCDTs), based on the following dimensions of analysis

1. Experience of scheduling tests
2. Experience of reception at the Hospital Garcia de Orta
3. Access and physical routing experience
4. Experience with the facilities of the service
5. Experience from beginning to end of the examination
6. Experience with the professionals
7. Perception and non-perception in the course of care
8. How would you feel better in the service?

The scoring methodology took into account all responses that contributed to a co-producing improvement process within this specific clinical service of the Hospital Garcia de Orta.

Results: A more comprehensive evaluation methodology based on patients' touch points with the service was achieved by moving from satisfaction evaluation to experience evaluation, focusing on patients' needs and expectations. With patients as co-producers, the service was able to identify opportunities for improvement in its processes for providing support and carrying out complementary examinations. Through this methodology, the service has established better proximity mechanisms and loyalty to its users.

Conclusion: The conclusion was that incorporating patients' experiences into service delivery is crucial in identifying how to improve working methods within the Complementary diagnostic and therapeutic services (MCDTs).

Given that the same experience can have different meanings and effects, and that experience is by nature unique, personal and holistic, the results showed personalised perception and individual evaluation by respondents.

The evaluation of the experience, influenced by factors such as space, time, involvement and personal satisfaction, creates value for the patient from a personalised interaction.

The majority of respondents found the survey process clear and helpful. They also said that listening to and responding to their needs and expectations can help them feel better about using those services.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2097

NEW SYSTEM FOR THE ACCREDITATION OF HEALTH ESTABLISHMENTS IN FRANCE: A QUALITATIVE AND QUANTITATIVE ASSESSMENT

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Introduction: The 5th version of the accreditation of hospitals & clinics implemented by the High Authority for Health (HAS) in 2021 aims to better meet the current challenges of quality and safety of care, with a desire to make the approach more accessible to professionals and to support the commitment of the patient. It is based on the analysis of the result for the patient, with regard to the practices implemented by the care teams, in a managerial framework supporting collective work and quality and safety approaches.

Methods: The accreditation framework is structured according to different 3 levels: 3 chapters, 15 objectives, 131 criteria. Each criterion is broken down into evaluation elements according to five methods of investigation: patient tracer (patient-caregivers in charge of the patient), tracer path (all clinical, medico-technical, logistics, ... contributing to the management of the patient), targeted tracer (drug, adverse event, ...) said system and observations.

These investigations are carried out by a team of surveyors, independent and trained by HAS. During the audit, they respond to the evaluation elements in 5 options (Yes, No, Not applicable, and inappropriate response).

The analysis of scores (from 0 to 100), done by aggregating the answers from the evaluation element to the chapter, makes it possible to write detailed summaries for each chapter. Surveyors have access to graphs as they are evaluated.

These results and summaries are discussed in the certification committee in order to give a level of quality: certified with distinction, certified, conditionally certified, not certified.

Results: Nearly 600 accreditation decisions were given with this new system: 23% certified with honors, 60% certified, 16% conditionally certified and 2% non-certified. This new certification system has made it possible to aggregate 6000 patient tracer grids, 2800 tracer paths, 6000 targeted tracers and 6700 System Audit Systems, i.e. nearly 2 million evaluation elements.

The quantitative analysis according to the level of decision allows initial conclusions and to identify areas for strong improvements for institutions that are not certified: the teams evaluate their practice, teamwork is promoted and the dynamics of quality development.

Conclusion: This system allows the quantitative and qualitative monitoring of quality in care facilities during accreditation visits.

The graphical tools and the multiplication of evaluations allow a better appropriation of the results by surveyors and professionals but also to make a global analysis of the establishment more homogeneous. The repetition of evaluations for the same element by several surveyors also reduces the risk of dependent response.

As part of the continuous improvement of the system, the precise analysis of the responses allows:

- To measure whether surveyors have atypical answers and to offer targeted training,
- To control the application of the reference system during the visit and to propose changes (quality of answers, inappropriate use of the answer not applicable).

The basis of the results constituted makes it possible to give the supervisory authorities an observatory of maturity levels.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2102

QAI TRANSITION CARE ACCREDITATION PROGRAMME

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Introduction: Healthcare is rapidly changing and evolving. Healthcare delivery models have changed with the advent of digital technology and changing needs of patients. With more knowledge gained in hospital settings and understanding the needs of patients, new care delivery models have emerged such as care transition from hospital to transition care centres before moving to home i.e out of hospital care. In many cases, patient needs specific care and support after discharge from hospital which may not be appropriately deliver at home and also patient does not need to stay in hospital. Therefore, it is important that such centres are equipped with necessary care delivery systems, processes and resources to provide safe and quality care. Hence, need felt by such providers to have accreditation standards.

For the first time in India, QAI has developed accreditation standards for transition care centres. Standards are developed by a group of technical experts in transition care in a manner which could easily be understood by transition care centres to adapt and implement.

Methods: Developing accreditation program for transition catre centres involved: development of accreditation standards using principles of standard development by ISQua External Evaluation Association (ISQuaEEA)

1. development of various policies and procedures to operate accreditation programme
2. development and conduct of assessor training programme
3. development and conduct of training programmes to develop internal auditors/implementers.

All the above four activities require different resources and efforts at different levels. It required constitution of a technical committee of experts, defining qualifying requirements for assessors, training content and methodology etc.

Results: QAI could develop accreditation standards based on the principles of ISQuaEEA and following RUMBA philosophy that standards should be Reasonable, Understandable, Measurable, Beneficial and Achievable. Standards were developed through consultative

process in which standards were first developed by a Technical Committee, a group of select experts and then put for stakeholder consultation by putting on websites of QAI, and disseminating information directly through emails. Comments received were discussed by the Technical Committee and standards were finalised.

These standards are comprised of 9 chapters, 79 standards and 296 criteria, and covers entire governance and operational structure and care continuum. These chapters are Governance and Leadership (GAL), Human Resources Management (HRM), Facility and Risk Management (FRM), Information Management System (IMS), Continual Quality Improvement (CQI), Patient Assessment and Care (PAC), Patient Rights and Education (PRE), Medication Prescription and Safety (MPS) and Hygiene and Infection Control (HIC).

Conclusion: In a complex environment of health care delivery system, it is important that patient receive safe and quality care in entire care continuam. There may be circumstances because of varied reasons that the patient don't move to his home but to a transition care centre. From the feedback received from the users and interaction with stakeholders, it can be concluded that this specific accreditation programme:

1. would help in standardisation of transition care services
2. would help in ensuring quality and patient safety in transition care centres
3. would facilitate availability of hospital beds to more needy patients
4. opportunity for better recovery and care than home under skilled professionals.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2107

THE IMPACT OF THE FOLLOW-UP OF METHODOLOGY BRAZILIAN ACCREDITATION MANUAL

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Introduction: Brazilian Accreditation Manual's methodology is based on the following components: structure, process and results and their interaction. The Quality Dimensions guide the survey development of health care organizations through the standards and requirements defined. The main goal of this study is to discuss the impact of the follow-up by Brazilian Accreditation Manual.

Methods: The Project of review of Brazilian Accreditation Manual happened in 15 months. To start the project ONA selected information that were registered in the database of ONA Integrare system, satisfaction research answered by the Health Organizations and also consider ISQua's references and recommendations. The Nominal Group Technique methodology was applied to support the general agreeement. Around 150 professionals from different areas participated in the review. This group of professionals was distributed between Executive Committee, Work Groups and Survey Test. The Executive Committee, at the strategic level, was composed of representatives of ONA and Accredited Accreditation Institutions (IACs) with the focus of validating the main guidelines of the manual. At the tactical level, each working group was led by a coordinator who had the function of promoting interaction. The deliveries of each of these groups comprised: the review of the concepts, requirements, quality dimensions, management fundamentals, guidelines and evidence suggestions for each requirement that provided the development of self-assessment and the definition of core requirements established as essential for each subsection. The SBA considers that the health organization is a complex system, in which the structures, processes and results of the organization are interconnected in such a way that the functioning of a component interferes in the complete set and in the result. In the survey process and in the logic of the SBA, one sector or process is not surveyed in isolation. ONA's Accreditation is a systemic assessment method that seeks, through previously defined standards and requirements, to promote the quality and safety of care in the Health Sector.

Results: There were around 62 health organizations accredited by Brazilian Accreditation Manual in the version 2022, considering the year 2022. These certifications are distributed by geographic regions of the country as follow: Southeast 65%, Northeast 16%, Midwest 8%

and South 11%. By level: Level 3 (Excellence) – 35%, Level 2 (Full) - 26% and Level 1 (Accredited) - 31%. by type of organization: Hospitals 45%, Ambulatory 21%, Oncological Services 10%, Ophthalmology 6%, Laboratories 5%, and other Services with less than 3.0%.

Conclusion: Through the Brazilian Accreditation Manual, health organizations attain public recognition and provide, based on certain standards, the quality of the services provided. Conducted on a voluntary and reserved basis, ONA's Accreditation does not have a supervisory character and is a continuing education program for organizations, periodically reviewed to encourage continuous improvement.

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Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2114

A DESIGN THINKING APPROACH TO TRANSFORM THE EXPERIENCE OF TRANSITION AMONG SENIOR ADULTS AT THE TIME OF NURSING HOME ADMISSION

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Introduction: Ageing is recognised as one of the greatest global public health challenges, especially with the increasing demands to cope with age-related health conditions in many nations. A central tenet of national health and social care policy in Singapore is to ensure that services support senior adults (SA) in achieving their personal well-being, enabling them to age gracefully and with dignity.

With the need to explore the transition of SA into nursing homes (NH), many studies have sought to understand this phenomenon from various perspectives and contexts in recent years. It is well established that a person-centred care approach is essential to ensure a successful transition into an NH. Although new service models are innovated, there is still a pertinent need to ensure that the navigation of services remains simple and streamlined.

From literature, design thinking (DT) can address the unacceptably huge gap between the services that healthcare providers aim to deliver and the actual service that is delivered. In relation to the 'wicked problem' that persist, the application of DT is plausible to develop a user-centric care model in facilitating the transition of SA into NH in Singapore.

The aim of this study is to integrate principles of DT and design tools with the occupational therapy practice to develop an empathetic care model that better transition SA into NH in Singapore.

Methods: A qualitative approach was used to conduct the research in two phases.

Phenomenological research design was used in Phase 1 of the study. It consisted of a 3 x 8-hours, in-depth observations of 10 newly admitted SA in an NH environment and a semi-structured interview with them to understand their lived experience of transition into an NH.

Focus group discussions (FGD) was used in Phase 2 of the study to cocreate a care model that can facilitate the transition of SA into NH in Singapore. 7 care staff providing care to the

SA from Phase 1 of the same study and 7 occupational therapists practising in NH were invited to participate in the FGD.

All qualitative data transcribed were analysed through thematic analysis to uncover common lived experiences and attitudes of the SA during a transition into an NH by taking into consideration the point of view of key stakeholders.

Results: The analysis resulted in the creation of 4 distinct personas to represent the current lived experience of SA transitioning into NH in Singapore. 4 main phases were also mapped to describe what the SA needed to know at each phase of their journey into an NH. From the thematic analysis, it was found that the barriers of transition arise from the preparation phase, continues to escalate and ripple further into the adjustment phase.

Themes that hinders a transition includes (1) emotions of the SA, (2) support provided during the move, and (3) knowledge on personal belongings after the move into the NH. Elements of a plausible care model were cocreated with the care team in an NH to imagine a better experience for SA transitioning into NH.

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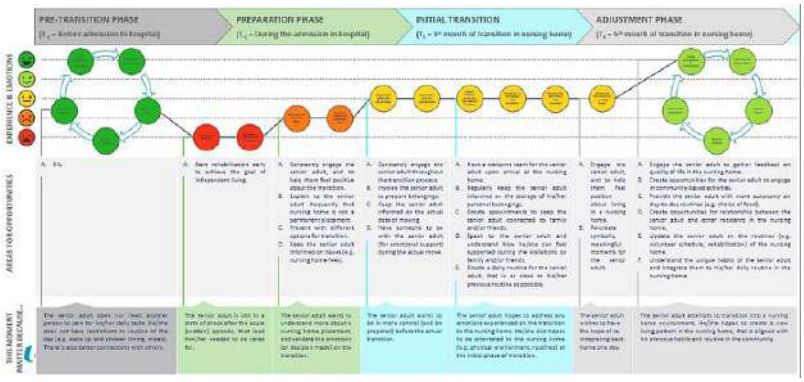

Conclusion: The study showed that the transition of SA from their everyday lives in the community into the role of a resident in an NH is a lengthy and complex journey. To date, this study is the first of its kind, in applying principles of DT to improve the multifaceted journey experienced by SA transitioning into NH in Singapore. Elements of the DT process embedded in a new care model would be able to address challenges in a variety of domains related to the resident's experience.

Disclosure of interest: None declared.

ISQUA2023-ABS-2119

DEVELOPING BENCHMARKING INDICATORS FOR AUSTRALIAN VIRTUAL EMERGENCY DEPARTMENTS

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Introduction: Benchmarking is a systematic process in which current practice and care are compared to, and amended to attain, best practice and care. We have developed an Australian peer partner collaborative to benchmark outcomes in virtual emergency departments (EDs), in which interaction between patients and the emergency multidisciplinary team occurs remotely using any form of communication or information technologies. This paper reports the formation of the collaborative and the first three steps of benchmarking: select the object, identify partners, collect and organise data [1].

Methods: We used stakeholder interviews to describe the model of care being used at four participating sites, and a literature review, to develop a set of 23 candidate benchmarking indicators that were then refined using a two stage Delphi study. The first stage of the Delphi study used a survey to assess the feasibility and importance of the indicators, the existence of synonyms and to draft definitions. These results were then fed back to participants in a second stage and further refined during discussion and written review of a revised list of indicators and definitions.

Results: There was substantial variation between the four virtual ED models of care, for example, in terms of whether they offered a patient portal, the scope and size of the service, patient populations, and the extent of use of telehealth. In the Delphi study, two new indicators were added and eight were withdrawn due to lack of importance and/or feasibility. Definitions for the remaining 17 indicators were refined and collection of preliminary data to permit comparison between peers has commenced. Of 17 indicators mapped to the six AHRQ Domains of Quality [2], three each mapped to efficient, effective, safe, and timely care; and two indicators each mapped to equitable and patient centred care (Figure 1). One indicator (staff satisfaction) did not map to a domain.

Image:

Figure 1 Mapping of 16 proposed benchmark indicators to ARHQ Domains of Quality [2] (note staff experience was unmapped)

Conclusion: There is enthusiasm for a national benchmarking collaborative across four Australian virtual ED services and States. Through the use of a Delphi study, we have identified a set of 17 indicators and definitions to permit the commencement of benchmarking activities.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2121

THE PDPQ EDUCATORS NETWORK: A REMOTE-BASED MODEL FOR ENHANCING NEW PHYSICIAN INVOLVEMENT IN PATIENT SAFETY AND QUALITY IMPROVEMENT

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Introduction: The Accreditation Council for Graduate Medical Education (ACGME) oversees approximately 12,700 postgraduate training programs for over 150,000 US physicians. Formative assessments of the clinical learning environments of these programs noted they vary in their approach to addressing quality improvement and patient safety (QIPS) and the degree to which they engage residents and fellows in these areas [1]. Recognizing gaps in faculty capacity and support, in 2018, the ACGME joined with the Organization of Program Director Associations (OPDA) and Project ECHO® of the University of New Mexico Health Sciences to develop a national learning network of postgraduate medical educators seeking to optimize educational programming in QIPS utilizing a model that would minimize financial burden while promoting sustainability and spread [2].

Methods: From 2018-2020, a core team of individuals from the three partnering organizations designed and pilot tested an initiative called the Program Directors' Patient Safety and Quality (PDPQ) Educators Network. Seven program director organizations applied to the initial call for participation. Of these, three specialties (emergency medicine, internal medicine, neurological surgery) were selected for the initial pilot, collectively recruiting a total of 13 teams of educators. The network has two components:

- A structured 6-month series of weekly video conference sessions to introduce concepts key to improving education in quality and safety in the areas of: a) stakeholder engagement, b) longitudinal learning, c) faculty support, and d) learner assessment and program evaluation.
- A separate series of regular sessions supported by the relevant specialty association or society to maintain the community of participants who complete the first component, providing opportunity to problem solve on an ongoing basis.

Results: During the initial pilot, nearly all participants were retained from start to finish. Subsequently, interest in PDPQ continues to grow. Since 2020, eight specialties have been added, including: family medicine, obstetrics/gynecology, psychiatry, pediatrics, urology, physical medicine and rehabilitation, pathology, and anesthesiology--with over 100 residency programs now participating in the initiative. Participants note the network not

only fosters learning--it also provides a form of respite and a chance to connect with and derive support from colleagues.

Conclusion: The pilot test of the PDPQ Educators Network successfully demonstrated an approach to building a peer-based network utilizing the ECHO model that combines distance learning with a means for building and sustaining community that is effective and minimizes financial burden. While this initiative focuses on support for educators of postgraduate medical education, it provides a model that could be replicated across professions, across the spectrum of educational training, and across various topics within QIPS.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2129

WHY DO AGED CARE CONSUMERS NOT RECEIVE SAFE AND EFFECTIVE CARE? A WORLD'S FIRST ANALYSIS OF ACCREDITATION REPORTS

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Introduction: *Problem description:* Numerous enquiries and reports have highlighted that aged care consumers can suffer serious incidents resulting in preventable harm [1]. In Australia, the Aged Care Quality and Safety Commission (ACQSC) undertakes accreditation of residential aged care facilities (RACFs) to assess them against the Aged Care Quality Standards. These comprise eight standards and 42 sub-standards. From these assessments, the ACQSC generates confidential narrative Site Audit Reports which contain the RACF's performance assessment.

The mostly frequently not met sub-standards are from Standard 3 – Personal and Clinical Care [2]. Standard 3's Consumer Outcome Statement relates to the domains of safety and effectiveness: "*I get personal care, clinical care, or both personal care and clinical care, that is safe and right for me"*. Nearly one-half of RACFs are not meeting two of the seven Standard 3 sub-standards:

- (3)(a) Safe and effective personal and clinical care and
- (3)(b) High impact or high prevalence risks managed effectively.

However, the reasons why RACFs fail Standard 3, and the associated patient safety risks to consumers outlined in the Site Audit Reports, have never been systematically assessed.

Objectives: The objective was to identify the types of patient safety risks that relate to Personal and Clinical Care Standards not being met during accreditation. This is a world's-first analysis of accreditation reports to analyse safety and effectiveness issues within health or aged care.

Methods: Site Audit Reports with at least one not met Standard 3 were randomly sampled. The researchers developed an analytical framework and database to code the reports. A field called Clinical Issue, inductively developed from the data, was added to the framework to describe what the incident related to. Two experienced aged care nurses manually reviewed the Site Audit Reports and extracted incidents and the resulting data was

descriptively analysed. Kappa scores were 0.744 indicating substantial agreement.

Ethics: The ethics application approved by the Macquarie University Human Research Ethics Committee (no. 10576).

Results: Site Audit Reports from 65 organisations were analysed and 2,268 incidents identified. There were 34 clinical issues identified (Figure 1). The six most frequent clinical issues were infection control, wound management (see Box 1), chemical restraint, medication management, behaviour management and pain management, all which comprised between 6 and 10% of incidents. Together, these six clinical issues comprised 46% of all incidents with the other 28 comprising 54% of incidents.

Box 1. Incident example

'(Consumer's) wound is to be attended to daily. During [month] the wound was not attended on the following dates: 1, 2, 6, 8, 12, 13, 15, 16, 18, 19, 21, 22, 24, 25, 28 and 29.'

Image:

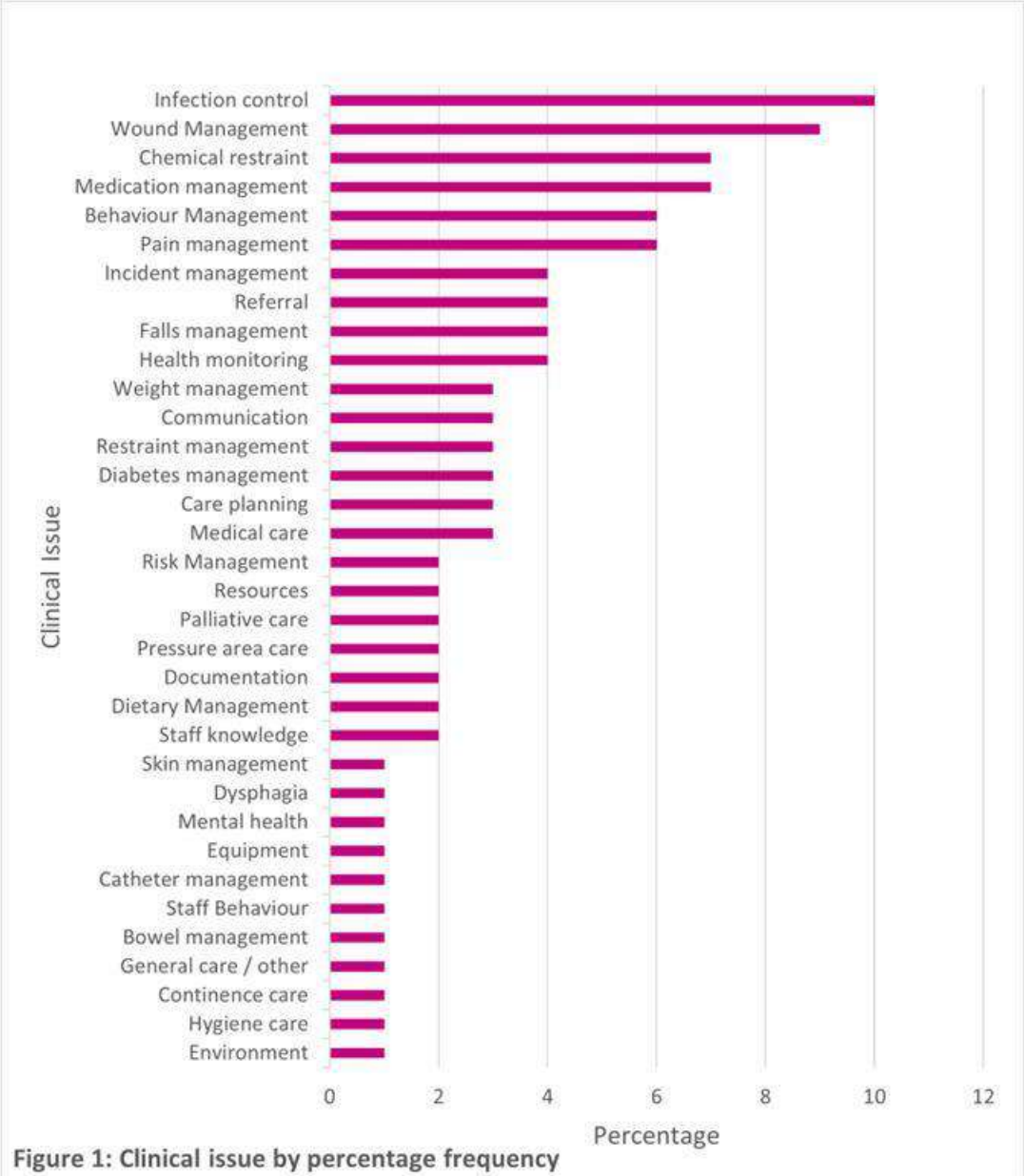

Figure 1: Clinical issue by percentage frequency

Conclusion: One of the main findings of this analysis is the "long tail" phenomenon with large numbers of low frequency clinical issues occurring. This long tail provides a challenge to facilities to achieve high quality of care for their consumers as targeting each individual issue requires significant resources.

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Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-2133

HOW VALUE-DRIVEN CARE (VDC) IN SINGAPORE SUSTAINS COST OF CARE WITHOUT COMPROMISING ITS QUALITY?

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Introduction: Against the backdrop of an ageing population and unsustainable increase in healthcare expenditure, MOH Singapore has made the provision of good quality care in a cost sustainable manner a key objective within Singapore's health care system. In 2017, Singapore embarked on a national VDC program to benchmark clinical outcomes and cost of care for 17 common surgical and medical conditions across all public healthcare institutions (PHIs, i.e. acute hospitals within the public healthcare sector). This initiative is expected to inculcate a culture of value-conscious care among all PHIs. In this presentation, Singapore would like to share its journeys in the VDC development, implementation, and evaluation from 2017 to 2020.

Methods: (1) MOH worked together with the PHIs to identify 17 high impact conditions of interest, and set up VDC workgroups for each to agree on the clinical outcomes and cost buckets indicators suitable for benchmarking. (2) MOH generated data for the agreed indicators from its internal databases, which allowed monitoring and benchmarking of both clinical and cost performance at both provider- and clinician-level. (3) To drive value improvement, MOH feedbacked the benchmarked performance to the PHIs, who then worked with their individual clinicians to identify potential opportunities for improvement and put in place improvement plans. (4) MOH engaged the 17 VDC workgroups annually. "Best-in-class" performers were invited to share on their best practices to enable systemwide adoption and scaling. VDC dashboards were recently introduced to enable self-monitoring and analysis. MOH is in the process of automating the data and dashboard generation process.

Results: Compared to pre-VDC period (i.e. 2014-2016), the implementation of VDC programme since 2017 has had incremental positive impact on clinical quality improvement while slowing down the increase in cost. Between 2017-2020, a total of 733 returns to operating theatre were prevented, and 11,542 bed days were saved due to reductions in 30-day readmissions, 30-day complications, and Length-of-Stay (LOS). On a composite basis (i.e. Clinical Quality Index (CQI)), this translated to 2020 clinical quality being 5% better than projected if VDC were not implemented. Meanwhile, the overall year-on-year cost increase since 2017 (ranging from 1% to 3.6% y-o-y) was lower than during the pre-VDC period

(ranging from 4.6% to 11.8% y-o-y). In 2020, average cost was 9.5% lower than projected.

Conclusion: Since 2017, value conscious culture has been embedded in our public hospitals, with private hospitals in Singapore also recently stepping up to look beyond quality to value. Greater collaboration could be seen among public hospitals and thus care delivery and pathways were more aligned. Clinicians are more informed on the clinical outcomes and cost, and hence value, associated with the care they deliver. More patients would be benefiting from improvement in quality of care at optimal cost. VDC will continue to play an important role in Singapore's Value-Based Healthcare initiatives including the new programme on population's health, to drive preventive care and deliver quality care, sustainably.

Disclosure of interest: None declared.

ISQUA2023-ABS-2135

WHAT IS THE LEVEL OF EVIDENCE-BASED CARE DELIVERED TO RESIDENTS OF AGED CARE FACILITIES?

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Introduction: Problem description: Globally, the aged population is growing rapidly and this is projected to continue. People living in aged care facilities are the frailest of this cohort, with a high prevalence of chronic conditions and complex co-morbidities which affect their quality of life. Therefore, there is a need to determine the extent that care is delivered to people in aged care that is in line with evidence ('appropriate care').

Objectives: We will present the results of the Australian CareTrack Aged study, the first systems-level study in the world of evidence-based care delivered to residents in not-for-profit aged care facilities.

Methods: Sixteen conditions amendable to estimating evidence-based care at population level were identified from prevalence data and clinical practice guidelines (CPGs) relevant to aged care facilities, for example, Cognitive impairment, End of life care, and Medication management [1]. CPGs were identified by a systematic search of peer-reviewed literature and international CPG repositories. Candidate recommendations were extracted from CPGs, converted to a standardised indicator format, and duplicates were merged. National experts for each condition reviewed and rated the indicators via a Delphi process. For the 16 conditions, 236 evidence-based care indicators were ratified [2].

We then undertook a multi-stage stratified sample and manual medical record review by trained aged care nurses to assess adherence with the evidence-based care indicators for care delivered to residents in 2021 [1].

Ethics: The study has been approved by Macquarie University's Human Research Ethics Committee (5201800386).

Results: Care was evaluated for 300 residents who had 69,454 encounters of care in 25 facilities assessed for indicator eligibility, with 27,585 of these assessed for adherence and included in analysis. Weighted to address oversampling of recent admission and deaths, and stratified by organisation type, adherence to evidence-based care indicators was estimated

at 52.9% (95% CO: 47.5, 58.2) ranging from a high of 81.8% (95% CI: 75.0, 87.4) for Bladder and Bowel to a low of 11.7% (95% CI: 9, 33.4) for Depression (Figure 1). At facility level, adherence ranged from 33.4% (95% CI: 23.6, 44.9) to 66.4% (95% CI: 62.4, 70.3).

Individual indicator estimates were also calculated. Examples include:

- Residents on admission had an evaluation of their immunisation status (33.4%; 95% CI: 16.0, 54.9)
- Residents who have unplanned weight loss or being at risk of weight loss, were weighed more than once a month (21.1%; 95% CI: 11.1, 34.6)
- Residents with behaviours and psychological symptoms of dementia had a care plan that incorporated a range of non-pharmacological approaches (97.7%; 95% CI: 92.8, 99.6).

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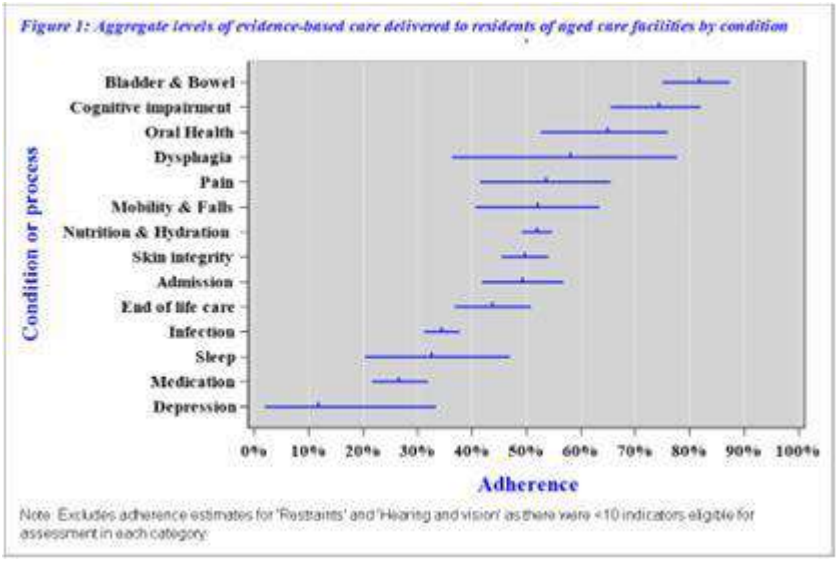

Conclusion: The CareTrack Aged study results provide the basis for empirically driven priorities for improvement at a systems level which can be set by governments and peak bodies to address improving the level of appropriate care for commonly occurring clinical processes and conditions in aged care. Care systems will be unaffordable unless funds are diverted to more appropriate care with reduced adverse events, more efficient use of limited resources, and towards care which optimises opportunities for health, safety, and social participation.

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1. Hibbert, et al. *BMJ Open* 2019:e030988.
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Disclosure of interest: None declared.

ISQUA2023-ABS-2141

CAN ALGORITHMS AUTOMATICALLY EXTRACT QUALITY INDICATOR (QI) ASSESSMENTS FROM RESIDENT RECORDS IN AGED CARE FACILITIES?

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Introduction: *Problem description:* Measuring quality of care, represented by quality indicators (QIs) is a key imperative for healthcare systems globally, including for residents of aged care. To do this at scale and efficiently, algorithms can be used to automatically extract QIs from care records. However, algorithms rely on data being collected in structured fields, rather than free-text fields. If information in care records is documented in free-text data fields, QI extraction relies on manual record reviews which is time-consuming and costly.

Objectives: To analyse the proportion of QIs that are documented in residents' care records in free-text or structured fields. This is a sub-study of the Australian CareTrack Aged study, which is the first systems-level study in the world of evidence-based care delivered to residents in aged care facilities.

Methods: The CareTrack Aged study developed 236 QIs which represent evidence-based care for residents of aged care facilities [1] across 16 conditions, including Cognitive impairment, End of life care, Falls and mobility, and Medication management. The QIs were developed by systematic searches of peer-reviewed literature and review by national experts (researchers and clinicians) via a Delphi process [2]. Trained aged care nurses undertook manual care record reviews to identify the data field types used (structured, free-text, hybrid i.e., combined free-text and structured) to determine eligibility and adherence with evidence-based QIs for care delivered to residents in 2021 [1].

Ethics: The study has been approved by the Human Research Ethics Committees at Macquarie University (5201800386) and Monash Health (RES-19-0000-566L).

Results: Data field type was extracted from 6 electronic care record systems across assessments of QI eligibility (n=8343) and compliance (n= 4935) for 114 residents in 40 facilities. Most frequently, QI eligibility relied on free-text fields (44% of assessments, n=3642) and QI adherence on a hybrid of free-text and structured fields (60%, n=2950) (Figure 1). Using only structured data, 17% (n=1425) of QI eligibility assessments were

possible, and 5% for adherence (n=251). None of the 236 QIs were assessable for eligibility and adherence using only structured data.

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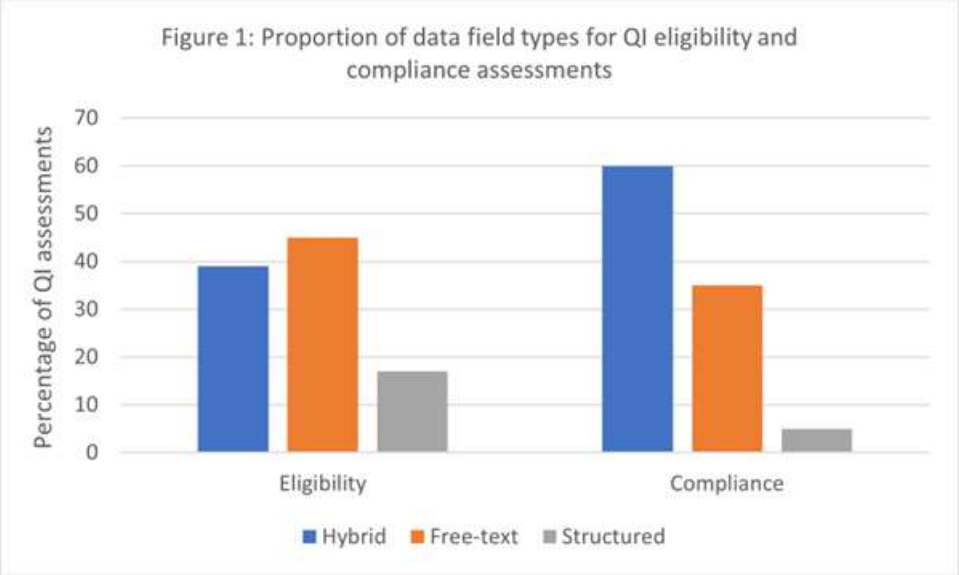

Conclusion: To date, little basic research has focused on the exact prevalence of data field types as information sources in electronic medical records. In this study, QI assessments of aged care residents' records relied mostly on free-text and hybrid data fields, meaning traditional QI extraction algorithms would not be currently usable at scale. These findings can be used by aged care researchers and accreditors to inform their current data extraction approaches, and provide a basis for the future design of QIs and care record systems to leverage structured data fields and automation. In the future, blending of traditional automation approaches with emerging technologies that leverage artificial intelligence will be necessary to process all information within the medical record for secondary use. In this way, complete, scalable, and replicable care quality assessments can be made possible for benchmarking purposes.

References

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2. Hibbert, et al. *IJQHC* 2022:mzac033.

Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-2155

OPTIMISING THE QUALITY OF CLINICAL DATA AND DOCUMENTATION IN AN AUSTRALIAN AGED CARE AND DISABILITY HEALTH SERVICE TO IMPROVE CARE DELIVERY AND CLINICAL OUTCOMES: THE IMPORTANCE OF USER INVOLVEMENT

G. Tshering[1,*], L. Troeung[1], R. Walton[1], A. Martini[1]

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Introduction: Quality clinical documentation and data is central to delivering safe and effective healthcare. Accurate clinical documentation reduces medical errors and enables *high quality person-centred care* which considers each client's unique medical and psychosocial background and needs. The OPTIMISE study is an internal initiative which aims to optimise the quality of clinical data and documentation in a large community-based Australian aged care and disability health service to improve care delivery and clinical outcomes. This presentation outlines user involvement methods employed within the OPTIMISE study and highlights the importance of user involvement in organisational quality improvement.

Methods: Pre-post optimisation study using an integrated Agile Lean Six Sigma DMAIC (*Define, Measure, Analyse, Improve and Control*) framework, undertaken at Brightwater Care Group in Perth, Australia. Users were involved in each stage to: i) assess the quality of baseline quality of clinical data, ii) identify root causes of data quality issues, and iii) generate optimisation solutions. In Stage 1 (Define), key users of clinical information systems across aged care, disability and corporate management business areas were identified using a stakeholder register and participated in a Delphi consensus method to identify critical to quality (CTQ) metrics for assessing the quality of clinical data. User-identified CTQ metrics were then directly used in Stage 2 (Measure) to measure baseline data quality across services. In Stage 3 (Analyse), baseline data quality findings were presented back to users via qualitative user consultations and users were invited to share their views on possible root causes of data quality issues based on their experience of working with clinical information systems. A purposive sample of users across aged care services, disability services, and corporate management, participated in the user consultations to provide whole-of-organisation insight into existing processes, strengths and gaps. Finally, in Stage 4 (Improve), focus group sessions will be conducted to generate user-driven optimisation solutions.

Results: In Stage 1 (Define), n=68 users participated in the Delphi method and identified six CTQ metrics of high-quality data: *1) Completeness, 2) Currentness, 3) Accuracy/Clarity, 4*

Compliance, and 5 Usability, which were used to assess baseline data quality across services. In Stage 3 (Analyse), n=135 users participated in user consultations and identified 8 root causes of data quality issues *1) Staff-related challenges, 2) Education and training, 3) Operational guidelines and procedures, 4) Organisational practice and culture, 5) Technological infrastructure challenges, 6) Systems configurations*, *7) External barriers and 8) Systems design limitations*. Stage 4 (Improve) will take place in March-April 2023 and user-driven solutions will be updated at the presentation.

Conclusion: User involvement is a central component of each stage in the OPTIMISE study to acknowledge the voice of customer and firsthand experiences of those who are directly involved in the process of interest. User participation in quality improvement promotes shared decision-making and ensures that changes are directly aligned with user needs, which can increase compliance with process changes, ensure improvements are sustained, and increase user satisfaction.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2157

EFFECTIVENESS OF NURSE-LED CLINICS FOR PATIENTS WITH CORONARY HEART DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: Coronary heart disease is a primary cause of cardiovascular disease and a critical public health concern. Nurse-led clinics can potentially contribute in providing effective secondary prevention in patients with coronary heart disease.

Objective: This review aimed to determine the effectiveness of nurse-led clinics for managing patients with coronary heart disease compared to usual care by doctors or non-nurses.

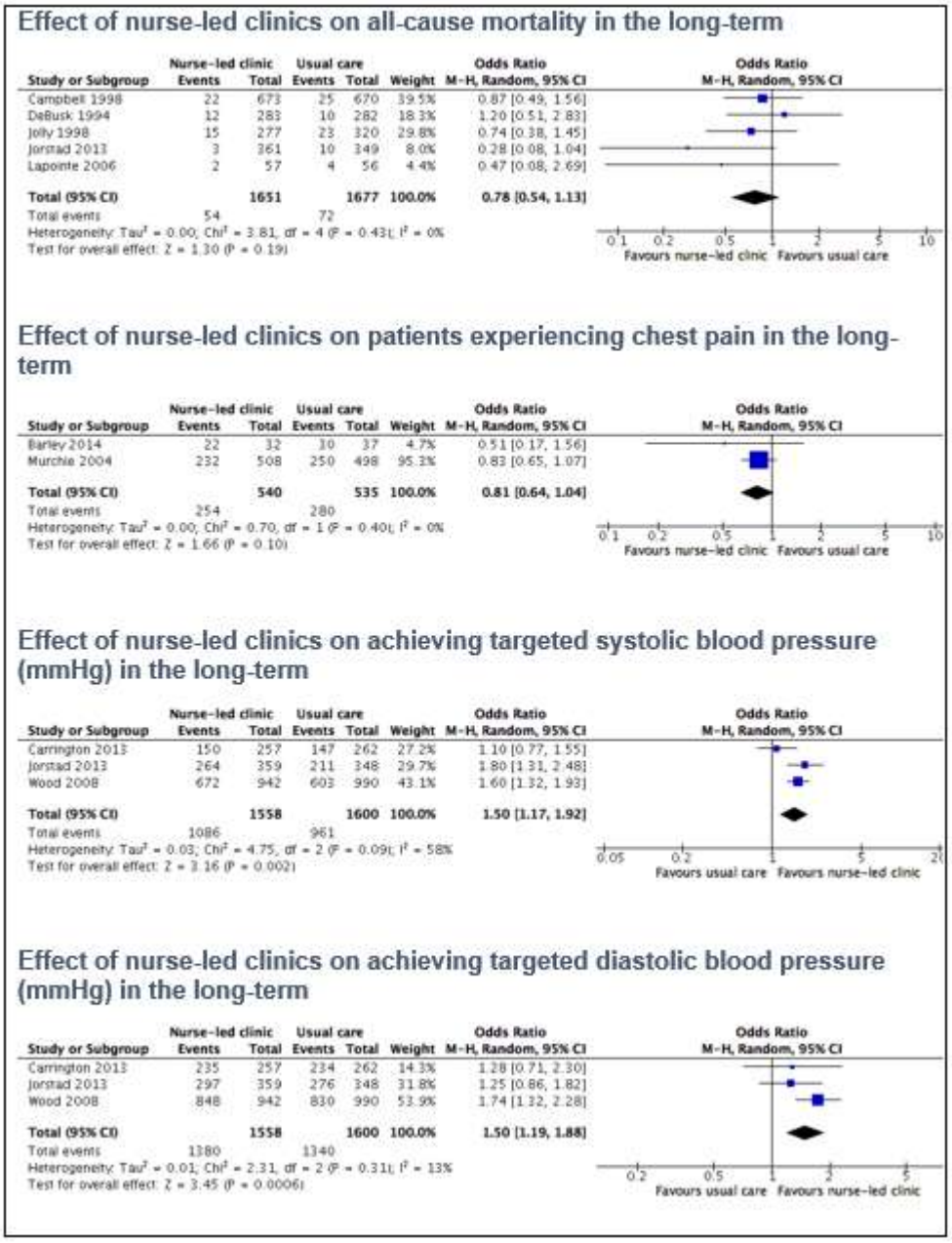
Methods: Randomised controlled trials examining patients aged 18 years and above with coronary heart disease were included in the review. Studies of other cardiac conditions like heart failure were excluded. The intervention was care provided for patients with coronary heart disease in nurse-led clinics, which are staffed and coordinated primarily by registered nurses, delivering education, assessment, treatment and monitoring, and consultation. Outcomes were clinical (mortality, exacerbations of chest pain, and cardiac risk factors) and behavioural (self-management, health status (such as depression and anxiety) and quality of life). A search of PubMed, CINAHL, PsycINFO, EMBASE was carried out twice, most recently in February 2022. Methodological quality assessment was conducted using Joanna Briggs Institute tools. Data extraction and meta-analysis calculating mean differences (continuous data) and odds ratios (dichotomous data) and 95% confidence intervals were undertaken using Revman. Grading of Recommendations Assessment, Development and Evaluation (GRADE) was used to assess the quality of evidence.

Results: Twenty-nine studies published between 2002 and 2022 were included. Nurse-led clinics may slightly reduce all-cause mortality in comparison to usual care at 12 months follow-up (odds ratio (OR) of 0.78; 95% confidence interval (CI), 0.54-1.13, P=0.19, 5 studies 3328 participants) and slightly reduce symptoms of chest pain (OR 0.81; 95% CI, 0.64-1.04;

P=0.10, 2 studies, 1075 participants) (Figure 1). Risk factors improved significantly in nurse-led clinics (achieving systolic blood pressure target OR=1.50, 95% CI, 1.17-1.92; achieving diastolic blood pressure target OR=1.50, 95% CI, 1.19-1.88, 2 studies, 3158 participants). Effects of nurse-led clinics on behavioural outcomes were mixed, for example smoking cessation (OR=1.30, 95% CI, 0.84-2.01, 2 studies, 2586 participants) and maintaining physical activity (OR=2.33, 95% CI, 1.07-5.05, 2 studies, 3796 participants) suggested a positive effect. However, results suggested little or no difference in long-term medication compliance, for example, ACE inhibitors (OR=1.08, 95% CI, 0.75-1.56, three studies 3158 participants) or statins (OR 1.33; 95% CI, 0.82-2.15; 6 studies, 5617 participants). Additionally, there may be a slightly higher odds of experiencing depression and anxiety in nurse-led clinics (OR=1.27, 95% CI, 0.93, 1.72, 5 studies, 2326 participants).

Image:

Figure 1 Forest plots of the clinical outcomes analysed in this study



Conclusion: The evidence suggests a favourable effect of nurse-led clinics on mortality, chest pain, and some cardiac risk factors, while transformations in health behaviours, compliance to medications and health-related quality of life were less evident. Nevertheless, nurse-led clinics should be considered for delivering care to patients with coronary heart disease and establishing specialised healthcare services in the community.

Registration: Protocol registered in PROSPERO (CRD42020205270).

Disclosure of interest: None declared.

ISQUA2023-ABS-2160

IMPROVING PATIENT SAFETY THROUGH LEARNING FROM SUCCESSES AND FAILURES: QUALITATIVE SURVEYS AND INTERVIEWS WITH INTERNATIONAL EXPERTS

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Introduction: *Problem description:* Patient harm is a leading cause of global disease burden with considerable morbidity, mortality and economic impacts for individuals, their families and wider society. A large body of evidence exists for strategies to improve safety and reduce harm. However, it is not currently clear which patient safety issues are being addressed globally, and which factors are the most (or least) important contributors to improvements in patient safety; this has important cost and resourcing implications.

Objectives: To sample international patient safety experts to: (1) identify the nature and range of patient safety issues being addressed globally, and (2) explore their perspectives on aspects of patient safety governance that provide value or are not effective in improving outcomes for patients.

Methods: English-speaking Fellows and Experts of the International Society for Quality in Healthcare (ISQua) were invited to participate in a web-based survey and in-depth semi-structured interview discussing their experience in implementing an intervention to improve patient safety. Data collection focused on understanding the elements of patient safety governance that influence outcomes. Demographic survey data were analysed descriptively. Qualitative data were analysed thematically using an inductive approach and mapped deductively to the System-Theoretic Accident Model and Processes (STAMP). Findings are presented as themes and a patient safety governance model.

Ethics: The study has been approved by the University of South Australia Human Research Ethics Committee (203467).

Results: Twenty-seven experts (59% female) participated. Most hailed from Africa (n=6, 22%), and Australasia or the Middle East (n=5, 19% each). The majority were employed in hospital settings (n=23, 85%), and in blended professional role(s) across healthcare improvement (89%), accreditation (76%), organisational operations (64%) and policy (60%).

Four themes for improved patient safety governance were identified: (1) 'safety culture' in healthcare organisations, (2) 'policies and procedures' to investigate, implement, and demonstrate impact from patient safety initiatives, (3) 'supporting staff' to upskill and share learnings, and (4) 'patient engagement, experiences, and expectations'. Commonly reported barriers to patient safety governance (n=72 cultural and human factors, n=52 multi-level, n=40 hospital management) were also facilitators (n=108 cultural, n=46 hospital management, n=26 government), and collectively described as a "system" (Figure 1).

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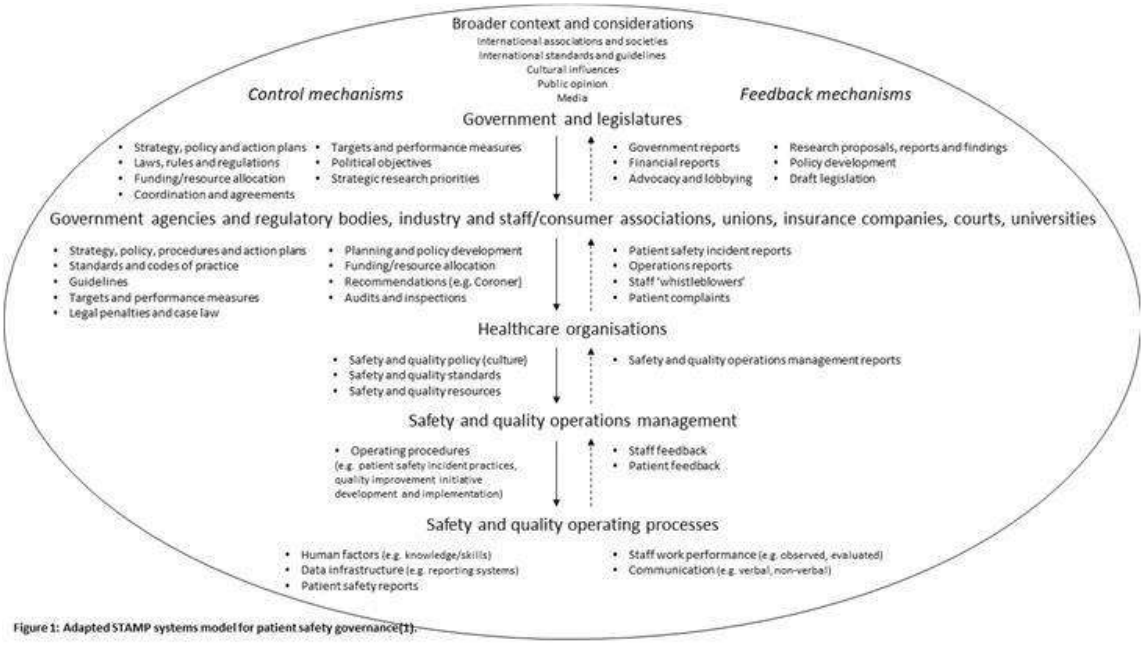

Figure 1: Adapted STAMP systems model for patient safety governance(1).

Conclusion: For sustainable patient safety governance, experts highlighted the importance of safety culture in healthcare organisations, national patient safety policies and regulatory standards, continuing education for staff, and meaningful patient engagement approaches. The proposed 'patient safety governance model' provides policymakers and researchers with a framework to develop data-driven patient safety policy.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2162

THE IMPACT OF THE IMPLEMENTATION OF THE CLINICAL PHARMACY AS A TOOL IN THE LARGE-SCALE PREVENTION OF ADVERSE EVENTS RELATED TO THE SAFE USE OF HIGH-ALERT MEDICATIONS

C. C. Martins De Oliveira[1,*], I. Burkart Okidoi[1], M. A. Silva dos Santos[1], G. do Carmo Silva Martins[2]

[1]Healthcare Quality Board, [2]Corporate Clinical Phamaceutical, Hapvida NotreDame Intermédica, Fortaleza, Brazil

Introduction: With a vertical health system, HAPVIDA NotreDame Intermédica did not have a standardized tool to cover the 87 units throughout Brazil, each unit had its own method in a non-systematized way, when the internal evaluation process started *through Qualitotal (health* quality improvement program) very similar to an accreditation program where it seeks to achieve each standard of patient safety, related to the six international goals, in this case the standard related to clinical pharmacy. During the evaluation, the standard "Guarantees the use of clinical pharmacy as a *therapeutic* support tool" was evidenced, which has mandatory requirements such as *technical validation of medical prescriptions, drug reconciliation, drug-nutrient relationship and drug-drug relationship.* These were for a while the gap in ensuring safe pharmaceutical care in a standardized manner. Thus, it was necessary to create a large-scale systematized tool for the entire HAPVIDA NotreDame Intermédica health system, identifying gaps and performing the necessary pharmaceutical interventions to avoid adverse events.

Methods: During the development of the computerized system for clinical pharmacy tied to medical prescriptions, a work environment was instituted in the Qualitotal standard, a cross-checking of information was created in all medical prescriptions in intensive care units, applying the right nine of the safe use of medicines such as: right patient, right drug, right infusion route, right-term medication, certain dose, record in the right medical records, mechanism of action, right drug presentation and right response, in addition to the use of antimicrobials, drug reconciliation, interactions between drugs and nutrients consumed by the patient, thus, the clinical pharmacist receives the alarms made by the system of these crossings and performs the interventions with the team of prescribing physicians.

Results: After the first seven months of the implanted clinical pharmacy (May 2022 to November 2022) 23,972 medical prescriptions were analyzed, of which 23,972 were analyzed, 2,606 required pharmaceutical interventions: 772 (29.62%) drug-drug interactions, 312 (11.97%) Inclusion or suspension of medications, 312 (11.97%) interaction via nasoenteral tube, 304 (11.67%) medication spree, 199 (7.64%) therapeutic duplicity, 159

(6.10%) allergy, 150 (5.76%) dosage adjustment, 134 (5.14%) dosage 110 (4.22%), dilution, 85 (3.26%) drug-nutrient interaction, 69 (2.65%) drug infusion time.

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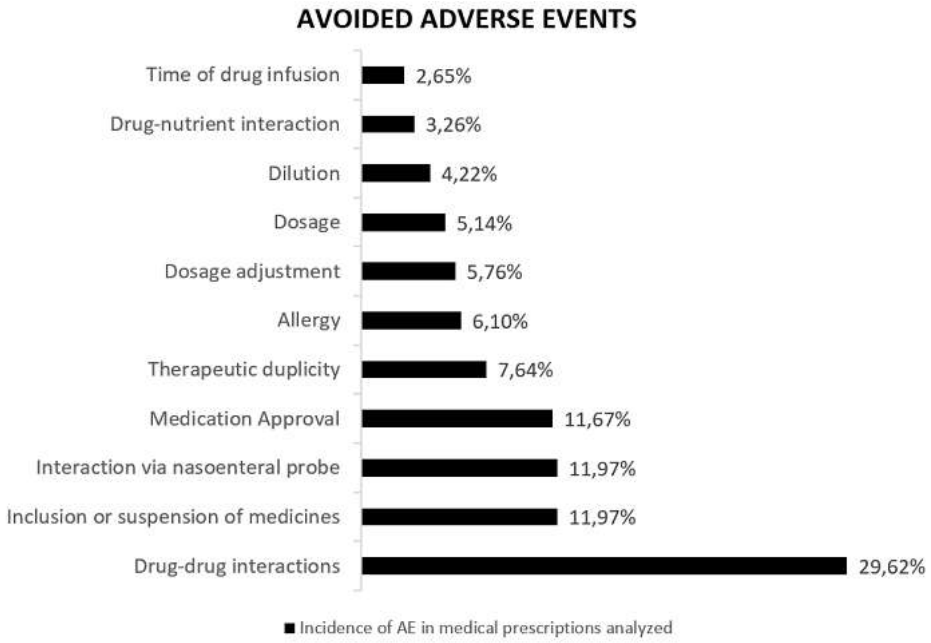

Conclusion: In view of the results of the pharmaceutical interventions performed, it was observed that the highest incidence of possible adverse events related to the use of high-Alert Medications are drug-pharmaceutical interactions and the incidence of 6.10% of drugs prescribed even the patient reporting drug allergy, this also shows a need for training of prescribing physicians, all of which reinforces the need for a technical validation that will guide them to alerts, thus avoiding unnecessary harm to the patient. Also, the results presented show how the clinical pharmacy has become a great ally in the prevention of adverse events and also as a barrier to reduce the gap in the existing safe use of medications, being necessary for the transformation of the patient's safe culture and improve the safety of high-alert medications.

Disclosure of interest: None declared.

ISQUA2023-ABS-2190

LEARNING HEALTH SYSTEMS IN PRIMARY CARE: IDENTIFYING BARRIERS AND ENABLERS TO IMPLEMENTATION AND EVALUATION

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Introduction: Learning health systems have been gaining traction over the past decade [1]. A learning health system (LHS) is one where science, informatics, incentives and culture align to create continuous improvement and innovation [2]. Rapid innovations in big data, machine learning and artificial intelligence (AI) continue to create the opportunity for accelerated learning, and expectations that healthcare systems can make the LHS a reality. Primary care, including general practice, is a common first point of contact with the healthcare system and is thus an opportune setting to develop a LHS [3]. While many existing LHSs have been described in the literature, there are few with a focus on primary care [3, 4]. In a previous study, we identified the elements of the LHS that were realised within a university-based general practice [4]. Here, we build on that study and identify key barriers and enablers to successful implementation and evaluation of an LHS in this primary care setting.

Methods: MQ Health General Practice operates across two sites and is a department of MQ Health, a university-owned not-for-profit health enterprise. Interviews were conducted with practice staff, including clinical and administrative staff. Interviews were transcribed and thematically analysed using a framework approach to identify barriers and enablers to implementation of an LHS.

Results: Thirty-two (91%) practice staff were interviewed, which were comprised of general practitioners, nurses, administrative staff, and a psychologist. Exemplar barriers to the successful implementation of an LHS model included: the potential for misaligned goals between implementers (practice staff) and researchers; the need for top-down cultural change within the organisation; and a limited tolerance of disruption due to the structural rigidity of healthcare settings. Exemplar enablers included the general practice's affiliation with a university, which gave rise to a willingness of staff to participate in research activities and quality improvement; strong leadership engagement; the shared goal of implementers and researchers to reorient the health system towards community-based care; and the co-designed methodology that ensured mutual input from the implementers and researchers at all stages of the study.

Conclusion: Although the idea of an LHS has been gaining traction in recent years, challenges remain for its implementation and evaluation. This study presents key barriers and enablers to initiating and sustaining LHS concepts in primary care, that can be applied to future, successful primary care LHSs. We will discuss the implications with the ISQua audience, and consider how to apply lessons learnt to other health systems, whether in low-, middle- or high-resource settings.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2195

IMPLEMENTATION OF AN OUTPATIENT FINANCING PACKAGE AND INTEGRATED PRIMARY CARE SERVICE UNDER UHC IN ILOILO PROVINCE, PHILIPPINES: CHALLENGES AND LESSONS LEARNED FROM THE FIELD

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Introduction: The implementation of Universal Health Care across countries often varies based on the current context and challenges present. In the Philippines, coming from a highly devolved and decentralized health care system, the passing of the UHC law in February 2019 was a milestone in improving health access for all and promoting primary care as the foundation of the health care system. It introduced key themes such as integration and patient centered care. The law covered a wide array of health sector reforms across governance, service delivery, health promotions, information systems and most notably, financing. The introduction of the national health's insurance outpatient primary care financing package (KONSULTA) which involved annual capitation payments, was considered an important shift towards the support to primary care. Despite the potential value of the package, local implementation was seen to be slow among the primary care facilities. This study looks to determine the gaps and challenges in accreditation, registration, and profiling of patients to determine a viable and efficient implementation process. The study also seeks to provide a model for integrating health services within the processes of KONSULTA in order to guide future registration and profiling activities. These efforts are expected to provide on the ground experience and highlight the value of KONSULTA.

Methods: This on-going study began in September 2022 with the conduct of focus group discussions among key stakeholders to review relevant policies, processes, and experience on KONSULTA. After agreements were made, medical consultants were trained and deployed across local government units (LGUs) to support and document activities related to KONSULTA. Weekly reports were submitted, and regular meetings were held to track progress. Results as of January 2023 were categorized into different program indicators, comparisons of achievements were made between the engaged LGUs and qualitative results on gaps and challenges were summarized at different levels of implementation.

Results: The study led to 41,966 patients having completed registration and first patient

encounter, 7 LGUs becoming accredited, 10,085 patients receiving COVID-19 vaccinations, and up to 684 acceptors of family planning methods. For accreditation, LGUs with consultants saw a 35% increase in accredited facilities versus the 9% increase in the LGUs without consultants. Success factors identified include immediate guidance regulating bodies, support from LGUs and previous experiences gathered by the technical teams, among others. For integrated delivery, COVID-19 vaccination was availed by an average of 20% of patients who underwent registration, whereas family planning services were availed by up to 12% of patients registered. For registration, local experience showed that mass registration was difficult for patients to access and expensive for LGUs to conduct, therefore registration was shifted to rotating barangay based format.

Conclusion: The on-going study was able to highlight the issues experienced in the implementation of KONSULTA across its processes and provide an example for implementation. This is expected to provide guidance to other LGUs and support revenue generation for primary care services moving forward, with capitation payments expected within 2nd quarter of 2023. The study was also able to present a model of integrated service delivery in this setting, highlighting clear processes for replication.

Disclosure of interest: None declared.

ISQUA2023-ABS-2197

LIFE AND DEATH: THE FUNCTION OF ALLIANCE OF REGIONAL CHEST PAIN CENTER IN SIGNIFICANTLY REDUCING PRE-OPERATION TREATMENT TIME AND IMPROVING THE CLINICAL OUTCOME OF PATIENTS WITH STANFORD A DISSECTION

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Introduction: The incidence of Stanford A dissection has been reported increasingly in younger patients with high mortality in China. After sudden onset of dissection, the risk of rupture of aorta increases by about 1% per hour. Hence, “Time is life” aptly describes the importance and plight for this type of patients. Therefore, reducing the time from onset of aortic dissection to emergency surgery and properly managing patient’s organ malperfusion are most effective in reducing mortality and improving clinical outcome for such patients. We have implemented this Clinical Effectiveness Improvement Project to improve the management of Stanford A dissection patients by analyzing our patient data, drawing Ishikawa diagram and continually embarking on the Plan-Do-Check-Act (PDCA) cycle (Figure 1a).

Methods: Started in HKU-SZH Chest Pain Center as the hub, we aim to reduce the pre-operation treatment time of Stanford A dissection and significantly improve clinical outcome by:

1. Forming an Internet Alliance Platform with other regional specialist cardiovascular centers in different Shenzhen districts that are capable of diagnosing aortic dissection (Figure 1b) to enhance inter-hospital cooperation and transfer of Stanford A dissection patients;
2. Providing regular training to at least one cardiologist in each alliance platform hospital to improve their ability to timely diagnose aortic dissection;
3. Constructing a network system connecting all platform hospitals for case registration, data upload, real-time remote consultation and remote critical case discussion;
4. Establishing a Green Channel for timely multidisciplinary consultation and expeditious transfer of patients from diagnosis to emergency treatment for patients with acute and critical status and organ malperfusion upon admission;
5. Improving multi-disciplinary emergency practice, team cooperation and communication with patients in the process of obtaining informed consent.

Conducting clinical research on epidemiology, etiology and functional medicine to

improve quality and standard of care for Stanford A dissection patients.

Results: From 1 January 2022 to 30 June 2022:

1. The average time from HKUSZH Emergency Department (ED) to operating theatre was reduced by 24.4% to 62 minutes (Figure 1c);
2. The onset of dissection patients to diagnosis in local hospital and referral to the HKUSZH ED was shortened to under 4 hours;
3. The average time from triaging patients on entering ED to preoperative preparation and Operating Theatre was shortened to under 1 hour;
4. The activation time of Operating Theatre was reduced by 33.3% from 30 to 20 minutes (Figure 1d);
5. The time taken for patients to sign informed consent for emergency operation was reduced by 50% from 20 to 10 minutes (Figure 1e).

The mortality, preoperative and postoperative complication rates of Stanford A dissection patients was reduced to 5% (Figure 1f).

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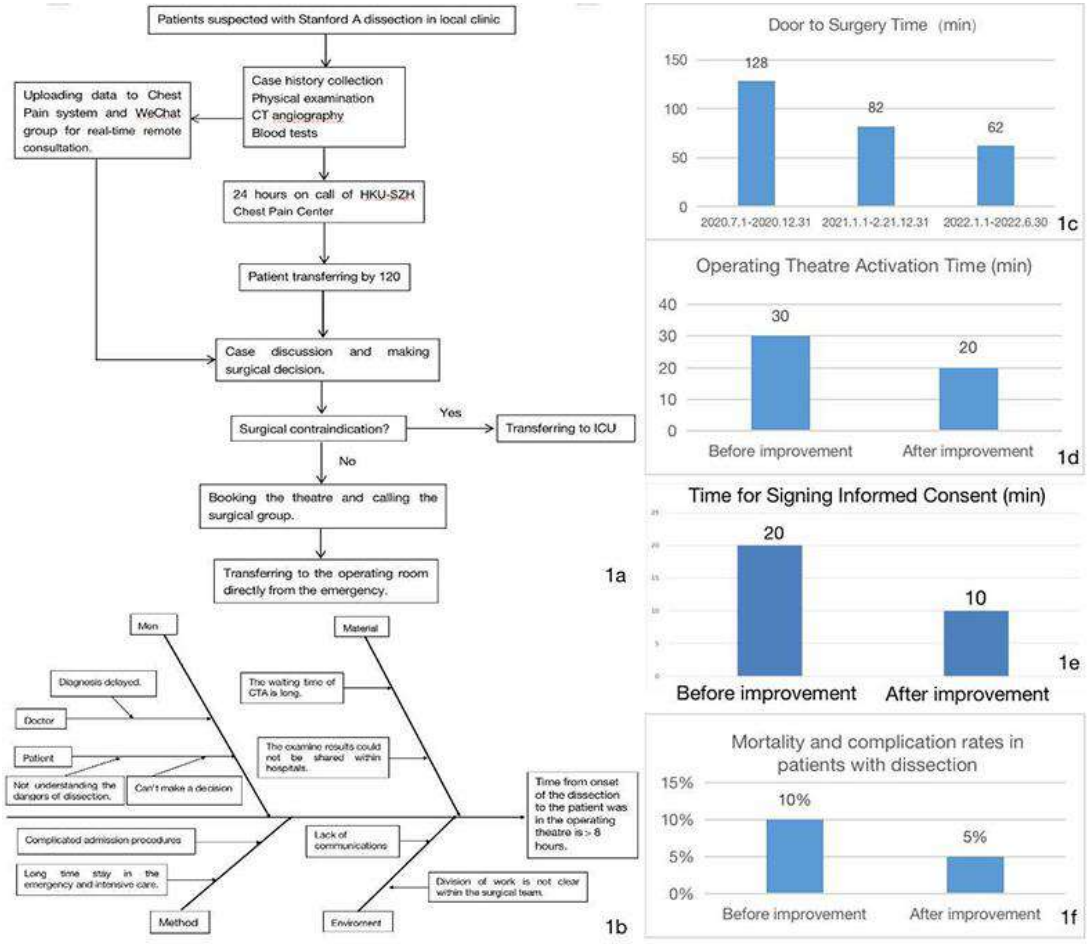

Conclusion: Time is the essence for treatment of Stanford A dissection patients as a delay could mean life and death. As evidenced by the above results, this is an exemplary clinical effectiveness improvement project which has significantly improved the qualify, standard

and outcomes of care for aortic dissection patients in Shenzhen and nearby districts by enabling their disease to be diagnosed, evaluated and treated within a much shorter time, thereby significantly reducing their morbidity and mortality, and complication rates.

Disclosure of interest: None declared.

ISQUA2023-ABS-2200

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) IN PRETERM & TERM NEONATES

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Introduction: CPAP been shown rapidly improve vitals signs, gas exchange, work of breathing and decrease the need for endotracheal intubation particularly for preterm neonates with Respiratory Distress Syndrome (RDS) as well as the risk of mortality and Bronchopulmonary Displasia.

Study from Malawi showed early implementation of CPAP therapy led by Nurses could decrease Neonatal Mortality.

Methods: Present study conducted at NICU KPJ Ipoh January 2019 to December 2021. Data obtained for in house newborn neonates and referral cases from other health center in Perak, which required CPAP therapy for clinically diagnosed with RDS.

Data Analysis: CPAP successful when: Saturation > 85%, PaO_2 of 60-80 mmHg, $paCO_2$ of 35 to 45 mmHg and pH of 7.3 to 7.4 with FiO <0.6. Neonates has no respiratory distress. CPAP failure is defined as PO_2 < 50 mmHg or PCO_2 > 60 mmHg with FiO_2 > 0.6 and pH < 7.25.

Results:

- 2019 - Among 27 neonates required CPAP, 24 improved with success rate of 89%. (From 89%, - 10 neonates (37%) required minimal O_2 support, 14 neonates (52%) wean to room air) whereas 3 neonates (11%) failed & requiring higher mode of ventilation.
- 2020 - Among 31 neonates required CPAP, 30 improved with success rate of 97%. From (97%,-6 neonates (19%) required minimal O_2 support), 24 neonates (78%) wean to room air) whereas 1 neonates (3%) failed requiring higher mode of ventilation.
- 2021 - All 39 neonates (100%) successfully wean off from CPAP. From 100%- 4 neonates (10%) required minimal O_2 support, whereas 35 neonates (90%) wean to room air.

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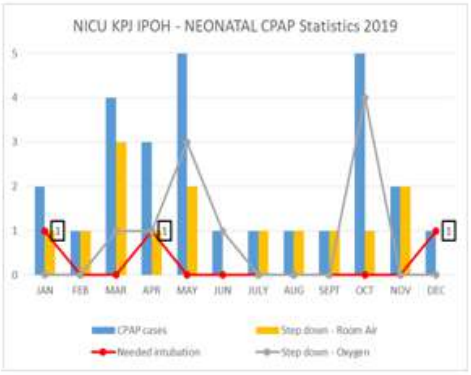

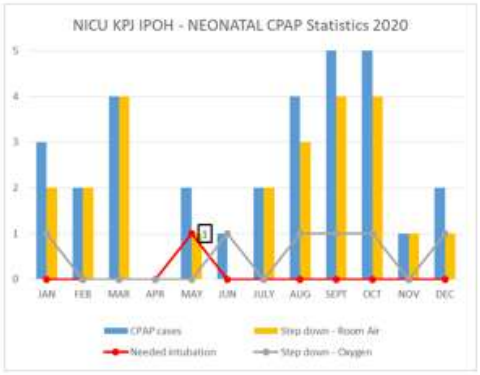

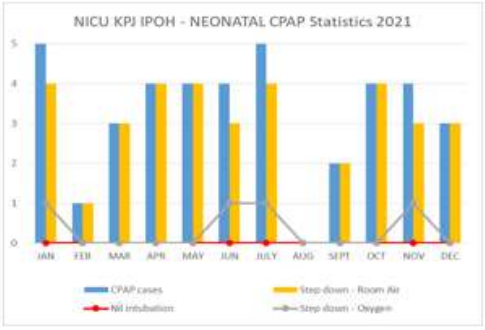

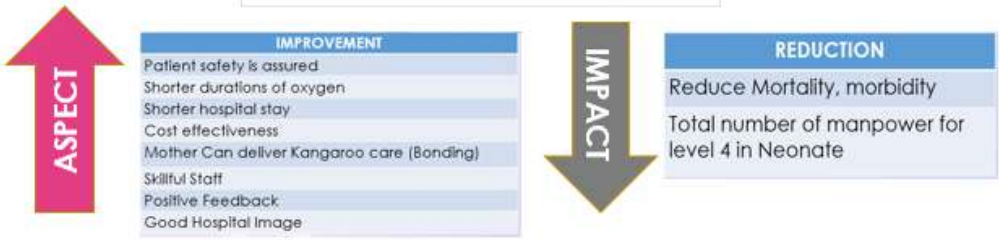

Conclusion: CPAP has become a standard of care for all Preterm Neonates with Respiratory Distress-Evidence from high quality studies suggest significant survival advantage in Preterm Neonates with Severe RDS and managed with CPAP compared with only oxygen therapy. Nasal CPAP found to be effective in low birth weight preterm neonates with RDS and is safe, inexpensive and effective means of respiratory support.

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Disclosure of interest: I. S. L. Zaine Consultant for: None.

Integrated Care

ISQUA2023-ABS-2202

ENHANCEMENT OF NATIONAL QUALITY ASSESSMENT PROGRAM CONSIDERING MULTI-MORBIDITY IN THE PATIENTS WITH HYPERTENSION AND DIABETES

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Introduction: With the increased prevalence of chronic diseases and aging populations, the modern generation generally suffers from multiple chronic conditions simultaneously, regardless of the types of diseases. Health Insurance Review and Assessment Service (HIRA) has been implementing a quality assessment program since 2010 to improve the quality of medical care and reduce the risk of cardio-cerebrovascular diseases, and it also covers hypertension and diabetes. Hypertension and diabetes, in particular, are concordant conditions that share the same pathophysiological process and risk factors, and if managed effectively in primary care, unnecessary hospitalization can be reduced. This study aims to propose measures for enhancing quality assessment program and redesigning relevant compensation systems considering multi-morbid patients with hypertension and diabetes in order to lay the groundwork for integrated primary care evaluation.

Methods: Using Claims and quality assessment program data from 2019 to 2020, the current situation is analyzed from the perspective of patients and institutions. Implications were derived and a evaluation index draft was listed through literature review. For the final selection of the evaluation index, a Delpi survey was conducted. Lastly, an evaluation model was designed considering patients with multi-morbidity with both hypertension and diabetes, and the final model is presented based on expert advice.

Results: In 2020, 21.8% of hypertensive patients and 61.6% of diabetic patients were patients with complex diseases with both hypertension and diabetes. Most of them used the same clinic for each disease, and in this case, the continuity of prescription and treatment were better. In other hand, the ratio of patients with excellent adequacy evaluation indicator values was high in institutions that treated both blood pressure and diabetes. Therefore, it is decided to set up a system in which hypertension and diabetes patients can receive continuous and comprehensive treatment and management in the same clinic. The final 12 evaluation indicators were selected by classifying them into common indicators applicable to all patients and specific indicators that need to be applied according to the characteristics of the diseases. A step-by-step detailed method for calculating the overall score was proposed, and the compensation system was designed so as not to significantly change from the existing evaluation results for the stable settlement

of the system. In addition, it suggested mid-to long-term improvement directions in various ways, such as introduction of outcome indicators, data collection system, and incentives.

Conclusion: The results of this study may be used as the base data for further research on quality assessment improvement. Further research should be conducted to develop a method that reduces clinical burdens on data submission other than the claim data and to adjust the assessment results based on each medical institution by reflecting the patients' characteristics.

Disclosure of interest: None declared.

ISQUA2023-ABS-2207

THE ROLE CASE MANAGER AND ITS IMPLEMENTATION IN SUPPORTING IMPLEMENTATION PATIENT CENTERED CARE (PCC) IN PKU MUHAMMADIYAH HOSPITAL YOGYAKARTA

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Introduction: The patient service paradigm is now patient-focused services (*Patient Centered Care*). Patients and families need accurate information and Caregivers Professional (PPA) work in an integrated manner in providing services to patients. A serious problem arises the number of interdisciplinary conflicts of care providers, plus the weak quality control and cost control for hospitals. *Case Manager* is an important and comprehensive intervention in order to improve quality, cost control, patient safety, integrated care, continuity of service and patient satisfaction. The role of *Case Manager is* very important and very complex as part of implementing patient-focused services, playing a role in helping to improve interprofessional collaboration and other health care teams.

Methods: Research type Qualitative with approach Phenomenology with Main Case Manager Informants and service and support Supervisors with a total of 30 Informants, data obtained through in-depth interviews and *Focus Group Discussion (FGD).*

Results: The role of Case Manager and its implementation has been suitable to support the implementation of Patient Centered Care at PKU Muhammadiyah Hospital in Yogyakarta, with the appointment of 2 Case Managers, namely doctors and nurses through a Letter of Directors' Decree. The role that Case Manager plays in supporting PCC is coordination, communication, supervision, prevention, and planning of patient care. This role has not been optimally done yet, because it is constrained by multi-barrier barriers, ethical legal and uneven socialization.

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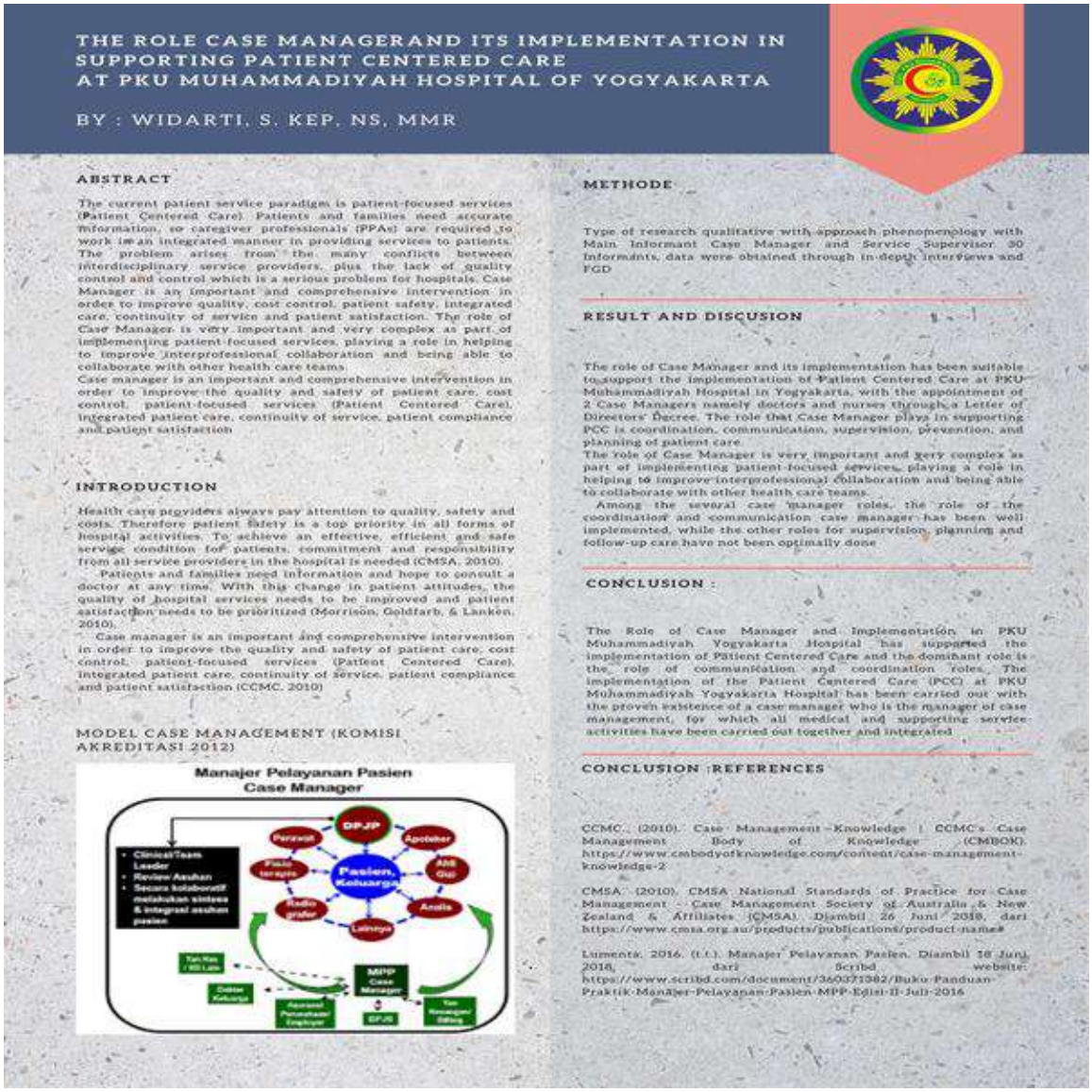

Conclusion: The Role of *Case Manager* and Implementation in PKU Muhammadiyah Yogyakarta Hospital has supported the implementation of *Patient Centered Care* and the dominant role is the role of communication and coordination roles.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2215

PATIENT AND FAMILY ENGAGEMENT IN PATIENT SAFETY IN PRIMARY CARE: A SCOPING REVIEW

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Introduction: Patient and family engagement is a high priority for improving in patient safety in primary care [1]. We aimed to identify and synthesize the scope of available research about tools, interventions and quality improvement initiatives which aim at improving patient safety in the primary care setting through patient and family engagement.

Methods: We designed a scoping review protocol following Joanna Briggs Institute and PRISMA guidelines [2, 3]. We used specifically tailored electronic algorithms with a combination of controlled vocabulary and search terms in MEDLINE, EMBASE, and the Cochrane Library. Eligible studies were evidence syntheses in English that reported the development, implementation or impact of relevant interventions, tools, or quality improvement initiatives. References were screened with Ryyan. We extracted study data regarding publication, aims, study population, methodology, scope, level of engagement.

Results: Out of initial 1,115 references, 26 syntheses were included. Most of them (76%) consisted of systematic literature reviews, and 70% were published from 2016 onwards. Five reviews focused on primary care whereas the rest were not setting-specific. Most frequently researched topics included medication management across transitions of care, medication side effects, and detection errors. Only a minority of reviews focused on specific ways of involving patients, such as individual information-sharing sessions for proactively involving patients in symptom monitoring and understanding their medications; or on different approaches to encouraging patients to ask questions.

Conclusion: A body of research supports best evidence for improving patient safety in the primary care setting by supporting patient and family engagement in everyday clinical practice.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2223

IMPLEMENTATION OF VENTILATOR-ASSOCIATED EVENTS (VAE) BUNDLE CHECKLIST TO DECREASE VENTILATOR-ASSOCIATED PNEUMONIA, AMONG VENTILATED PATIENTS IN ICU KPJ AMPANG PUTERI SPECIALIST HOSPITAL

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Introduction: Ventilator-associated event (VAE) is identified as any event that occur during ventilation including a decline in respiratory status following a period of stability or improvement on the ventilator, signs of infection or inflammation, and laboratory findings of respiratory infection. Ventilator-associated pneumonia (VAP) is recognized as the final complication that arises from ventilation, which should be avoided by thorough adherence to VAE monitoring. Any VAE can come with its share of problems such as prolonged intubation, prolonged length of stay in ICU, increased morbidity and mortality, and increased cost. Thus, early recognition is vital to reduce VAE complications. In 2001, the Institute for Healthcare Improvement (IHI) began developing and testing a concept of enhancing teamwork and communication in multidisciplinary teams in order to improve the clinical care provided to patients. This initiative led to the creation of "bundles" of care. Ventilator-associated event (VAE) checklist bundle is a new surveillance paradigm for monitoring complications in mechanically ventilated patients in intensive care units (ICUs). This VAE bundle checklist aims to decrease ventilator-associated pneumonia—implications of ventilator-associated events by early recognition of any Ventilator-Associated Conditions (VAC), Infection-related Ventilator-Associated Complications (IVAC), or Possible Ventilator-associated pneumonia (PVAP).

Methods: A pilot study research design was used and data were collected from January to December 2022. VAE occurrences were monitored with various inclusion and exclusion criteria. The monitoring will involve a multi-step process. Every patient admitted into the ICU and ventilated will be monitored with the VAE bundle checklist daily with guidance of the VAE Surveillance Algorithm. The monitoring includes used of VAE Worksheet data collection form. This will provide early recognition of any VAC, IVAC, or PVAP and early treatment of VAP when diagnosed.

Results: Prior to the implementation of the bundle checklist, there were a total of 16 cases of VAE and 3 VAP cases recorded in 2020. Pilot study began in January 2021 and witnessed 8 cases of VAE and 1 VAP case. As of December 2022, there were 5 VAE cases and 0 VAP case recorded. The results signify that adherence to the bundles allows for early detection and

treatment of patients. The decrease in VAE cases can be seen each year due to nurses' compliance towards VAE bundles.

Conclusion: VAE bundles checklist is much recommended to identify early detection/recognition of implications of ventilator-associated events. High adherence to VAE bundles and monitoring resulted in good clinical outcomes that improved the VAE rates and its interventions towards the end of 2022, especially during the COVID-19 pandemic/situation. Following the implementation of the VAE checklist, ICU took more steps forward in reducing the VAE which may lead to VAP cases. Special module on VAE was created to provide continuous education and awareness among staff nurses. The preceptor-preceptee relationship also was established focusing on VAE prevention.

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Disclosure of interest: None declared.

Universal Health Coverage and Equity

ISQUA2023-ABS-2224

TRENDS AND SOCIOECONOMIC DISPARITIES IN ACUTE CARE MORTALITY FROM 2008 TO 2019 IN SOUTH KOREA

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Introduction: 30-day mortality after hospital admission is an important key indicator for assessing health outcome, a core value of the national health care system. Even if the overall health care quality improves at the national level, patients, depending on their socioeconomic status, may continue to experience quality disparities. This study was conducted with two purposes. The first purpose was to examine the trend of 30-day mortality after hospital admission over the last 12 years and the second one to identify any differential trend by socioeconomic status for those with AMI and Stroke.

Methods: We used National Health Insurance (NHI) claims data from 2008 to 2019. The study population was patients urgently admitted to hospitals with acute myocardial infarction and stroke. 30-day mortality after hospital admission for AMI, hemorrhagic stroke and ischemic stroke were standardized by age and sex using the standard population aged 45 years and older in 2008. To analyze trends in 30-day mortality after hospital admission by national level and by socioeconomic status, we conducted a joint point regression to estimate an annual percent change (APC) and an average annual percent change (APPC) of 12 years.

Results: The AAPC of 30-day mortality after hospital admission for AMI was -2.6% (95% CI -7.8% to 3.0%). This suggested a statistically significant decrease during the past 5 years from 2008 to 2013. However, no significant change was found after 2013. 30-day mortality after hospital admission for hemorrhagic stroke and ischemic stroke decreased over the 12 years, which were statistically significant. The AAPCs of 30-day mortality after hospital admission for hemorrhagic stroke and ischemic stroke were −1.3% (95% CI −1.8% to −0.9%) and −3.3% (95% CI −4.0% to −2.6%), respectively. Among patients with hemorrhagic stroke, those with high income status presented 1.7% decrease in AAPC (95% CI −2.1% to −1.3% in NHI Group) for 30-day mortality after hospital admission, while those with low income status who were medical aid beneficiaries showed 1.7% increase (95% CI 0.6% to 2.9). These results indicated growing disparity in 30-day mortality after hospital admission for hemorrhagic stroke.

Image:

Table 1. Trends in 30-day mortality after admission to hospital for acute care in Korea, from 2008 to 2019

Variable	Trend1		Trend2		Trend3		AAPC, % (95% CI) (2008-2019)
	APC, % (95% CI)	Years	APC, % (95% CI)	Years	APC, % (95% CI)	Years	
AMI							
National Average Income	-7.25[a] (-13.0 to -1.2)	2008 - 2013	7.4 (-6.8 to 23.8)	2013 - 2017	-9.4 (-31.7 to 20.4)	2017 - 2019	-2.6 (-7.8 to 3.0)
NHI	-5.7 [a] (-9.0 to -2.2)	2008 - 2014	10.9 (-10.5to 37.3)	2014 - 2017	-10.1 (-27.4 to 11.4)	2017 - 2019	-2.3 (-7.2 to 2.9)
MA	-1.3 (-4.7 to 2.3)	2008 - 2019	NA	NA	NA	NA	-1.3 (-4.7 to 2.3)
Hemorrhagic stroke							
National Average Income	-1.3 [a] (-1.8 to -0.9)	2008 - 2019	NA	NA	NA	NA	-1.3 [a] (-1.8 to -0.9)
NHI	-1.7 [a] (-2.1 to -1.3)	2008 - 2019	NA	NA	NA	NA	-1.7 [a] (-2.1 to -1.3)
MA	1.7 [a] (0.6 to 2.9)	2008 - 2019	NA	NA	NA	NA	1.7 [a] (0.6 to 2.9)
Ischemic stroke							
National Average Income	-3.3 [a] (-4.0 to -2.6)	2008 - 2019	NA	NA	NA	NA	-3.3 [a] (-4.0 to -2.6)
NHI	-3.7 [a] (-4.6 to -2.8)	2008 - 2019	NA	NA	NA	NA	-3.7 [a] (-4.6 to -2.8)
MA	-0.1 (-2.6 to 2.5)	2008 - 2019	NA	NA	NA	NA	-0.1 (-2.6 to 2.5)

[a] Significant at $P < .05$.

Conclusion: 30-day mortality after hospital admission for hemorrhagic stroke and ischemic stroke have continuously decreased over the past 12 years that is the lowest rate among OECD countries. On the other hand, 30-day mortality after hospital admission among the different socioeconomic status has increased. 30-day mortality after hospital admission for those with medical aid was greater than twice high for the counterpart in 2019. These results should be considered in evaluating activities for improving quality of acute care, or setting an improvement target at regional or national levels to reduce disparities in quality of acute care.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-2236

COMMUNITY HOSPITAL OF THE FUTURE: DESIGN-THINKING APPROACH TO CARE REDESIGN & WHOLE HEALTH SYSTEM EFFICIENCY

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Introduction: Singapore's public health system experiences demand-sided strain from an ageing population (proportion aged >65 projected to increase from 20% today to 50% in 2050) and multimorbidity (current prevalence of 26–89% depending on definition), exacerbated by the COVID-19 pandemic. Coupled with supply-sided constraints of low acute-beds per capita (2.32 per 1,000 residents) and manpower shortages (projected 1274–2737 beds by 2030), acute hospital (AH) bed occupancy has remained consistently above national planning norms of 85%.

The health system is structured in three clusters, comprising AH, community (sub-acute and rehabilitative) hospitals (CH), specialist medical centres, and polyclinics (primary care). Clusters are the population health managers of 3 regional health systems (RHS) which comprise social care and private healthcare.

CHs are an ideal setting for improving health system throughput. AH–CH transfer rates are 4.6% (target: 12.1%), transfer wait times are 2.9 days (target: 1.6 days), length of stay is 31 days (target sub-acute: 21.5 days, rehabilitation 17.7 days). CH beds are currently also ringfenced for alternative uses such as inpatient palliative care, dialysis, or acute care.

Methods: The Community Hospital of the Future (CHoF) project adopts a 6 step design-thinking approach in which we engaged stakeholders from clusters, RHSes, AHs, CHs, Ministry of Health (MOH) across levels of seniority and job functions to holistically redesign CH care models.

Results: Table 1 shows the planned actions, stakeholders engaged, and outputs of the engagement.

Steps	Actions	Stakeholders	Outputs

Empathize	Environmental Scan	26 CH Senior Management including clinicians, operations, finance executives across 8 of 9 CHs	Pain points, current and future state
	Policy Review	MOH	National CH policies
Define	Theory of Change Development	58 RHS, AH and CH workshop participants	Co-refine Theory of Change/ drivers
Ideate	Workshop	Participants grouped in 12 AH–CH teams	CH care redesign proposals
Prototype	Post-workshop implementation support: grant application	58 RHS, AH and CH participants (in 12 AH–CH teams) Cluster Senior Management MOH Office for Healthcare Transformation (MOHT) MOH Hospital Services Division (HSD)	Selected proposals supported for grant application
Test	Pilot at least 2 care models	Selected AH–CH teams MOHT HSD	Facilitated internal & external conversations Monitoring and evaluation support
Scale	Sandbox	Clusters MOHT HSD Other MOH Divisions	Workshop report Platforms for learning

Analysis of environmental scan and policy review yielded a theory of change (Figure 1). Key themes that emerged included 1) CHs as point-of-entry to AHs, 2) direct admissions from AH emergency department, 3) AH–CH transfers of care, 4) greater role of allied health professionals, 5) managing higher acuity sub-acute patients, 6) reducing long-stayer length of stay, and 7) early supported discharge. We will refine this material with workshop

participants in Mar 2023, prior to the workshop.

The workshop will be held in Mar 2023 and is expected to yield scalable proposals demonstrating improved overall patient flow through AH-CH-home continuum and will be ready for presentation at the conference.

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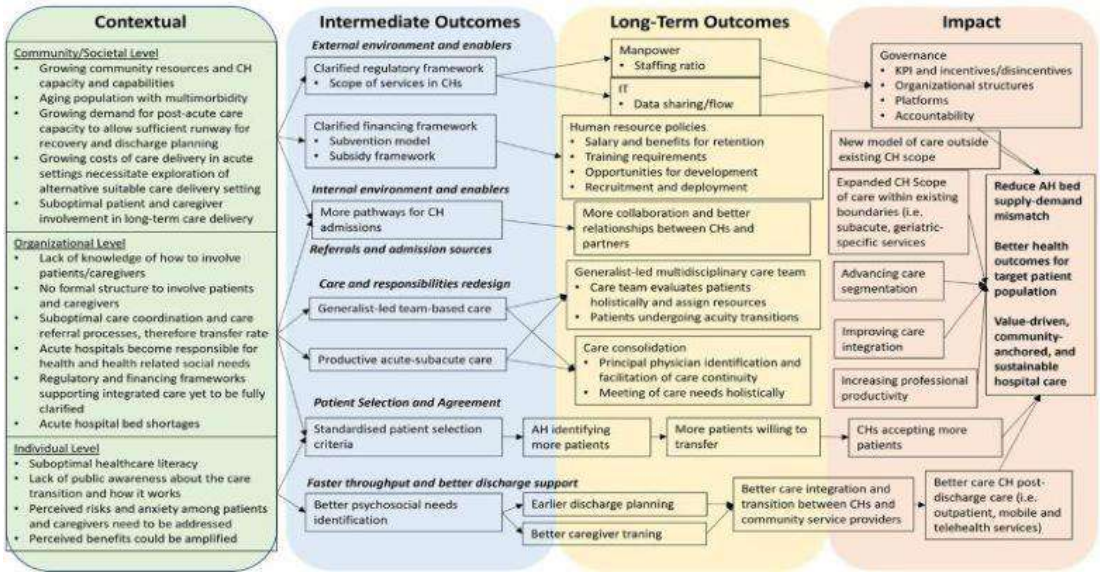

Conclusion: Singapore's health system experiences similar demand- and supply-sided pressures as other developed countries. The CHoF project demonstrates a design-thinking approach to alleviating these stressors, leveraging existing sub-acute and rehabilitation hospitals.

Disclosure of interest: None declared.

ISQUA2023-ABS-2243

IMPROVING PATIENT FLOW IN THE EMERGENCY DEPARTMENT THROUGH EARLY DISCHARGE LOUNGE OPERATION

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Introduction: Overcrowding in emergency department (ED) affects patient safety by delaying treatment of critically ill patients, delaying resuscitation, and increasing mortality. It is important to facilitate the patient flow of emergency care in all three areas of the flow: input, throughput, and output. Output is the most important rate limiting factor, where the bottleneck phenomenon occurs. Once a decision has been made for the patient to be admitted or to be discharged, the process should focus on emptying that bed as earlier as possible. But for various reasons, unnecessary delays contribute to developing the bottleneck for the output process. Therefore, we developed an early discharge lounge in the ED and assessed the effectiveness of the system.

Methods: Team of emergency physicians and emergency nurses developed the discharge lounge matrix. The matrix consisted of system factors, patient factors, and leadership with policy. After evaluating the context matrix, ED and faculty change models were developed with the following factors as outcome of this study: ratio of 30-minute delay bed out time, preparation time for clean bed, patients and faculty satisfaction. A designated room was selected to operate as the discharge lounge. The room was re-designed to make the users feel if they were at a luxurious lounge. Information signage and discharge instruction protocol was organized to fit for the purpose. The electronic dashboard was customized to indicate the patient using the discharge lounge. Patients from the ambulatory and observation units were indicated to utilize the discharge lounge. The study protocol was reviewed and approved by the institutional review boards of the hospital.

Results: Total of 2,045 patients utilized the discharge lounge. Patient satisfaction (out of 100 points) increased from 71.6 to 81.9 points, compared to the previous month without discharge lounge implementation. Faculty and staff satisfaction showed 78.6% and 90% for the emergency physicians and emergency nurses, respectively. Compared to the previous month before the discharge lounge implementation, the ratio of 30-minute delay bed out time dropped from 31.6% to 4.1%. The total boarding time for the patients decreased from an average of 56 minutes to 16.7 minutes. Time for preparation of clean bed dropped from an average of 38 minutes to 11.5 minutes. The overall occupancy rate increased 20%

compared to previous month.

Conclusion: This study demonstrated that implementation of a dedicated discharge lounge in the ED can improve patient flow during overcrowding. Since 95% of patients who used the discharge lounge want to use it again, expanding the operation from the current daytime (11 am~7 pm) to nighttime should be considered. Dedicated personnel, such as a floor manager should monitor any unnecessary delays during the care process and facilitate the flow. To improve the efficiency of discharge lounge operation in the future, leadership needs to create a command system and visualize it as a hospital-wide system.

Disclosure of interest: None declared.

ISQUA2023-ABS-2247

THE EFFECT OF DEVELOPMENT AND IMPLEMENTATION OF CARDIAC ARREST RESPONSE PROTOCOL OUTSIDE THE WARD: THE QUALITY IMPROVEMENT INITIATIVE

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Introduction: Cardiac arrests can occur anywhere in the hospital building. Situations such as cardiac arrest outside the ward are less equipped with emergency medications and supplies than in the ward, and there is a shortage of cardiopulmonary resuscitation (CPR) personnel. Therefore, it is essential to quickly move to a place where proper management can be performed along with training for appropriate first response to the situations. This study aimed to evaluate the effect of implementing cardiac arrest response protocol and mock code simulation on transfer time to the appropriate place and self-efficacy and satisfaction with mock code simulation.

Methods: A quality improvement project was performed at a 1,385-bed university hospital from February 2021 to October 2022. During phase 1, we identified the status of in-hospital cardiac arrests in unconventional locations such as outpatient clinics, a lobby, or a hallway. We analyzed problems of the current response to the cardiac arrest situation. Then we developed appropriate cardiac arrest response protocols. During phase 2, in-situ mock code simulation and debriefing were performed in four locations according to the protocols. During phase 3, some protocol revisions and several additional protocols were produced. And additional mock code simulation and debriefing were performed. The primary outcome was transfer time from CPR call to the emergency room (ER) or intensive care unit (ICU)s. And secondary outcomes were self-efficacy for CPR performance before and after the simulation and satisfaction with the mock code simulation.

Results: A total of thirty-five protocols were developed according to the characteristics of each location. There were 31 cardiac arrest calls before the intervention and 41 calls after the intervention. And 32 mock code simulations were run in sixteen different locations. Mean (SD) transfer time to ER or ICUs was 12.3 (5.5) min after the intervention, whereas it was 16.4 (14.1) min before the intervention (P = 0.11). Sixty-six participants of the mock

code simulation completed the questionnaire. Self-efficacy for CPR performance was significantly improved after the simulation ($P < 0.01$).

Conclusion: Implementing cardiac arrest response protocol and mock code simulation did not lead to a measured improvement in transfer time to ER or ICUs. However, in-situ mock code simulation improved participants' perceived self-efficacy in CPR performance.

Disclosure of interest: None declared.

ISQUA2023-ABS-2252

IMPROVE CARE AND CHARTING, INCREASE INSURANCE CLAIMS A CONTINUOUS QUALITY IMPROVEMENT INITIATIVE IN A LOCAL GOVERNMENT HOSPITAL IN BOHOL, PHILIPPINES

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Introduction: In the Philippines, quality improvement and accreditation by the Philippine Health Insurance Corporation, a government health insurance agency also known as PhilHealth, go hand in hand. The accreditation process complements the quality standards set by the Philippine Department of Health for health facility licensing. To be accredited, public hospitals need to comply with quality and patient safety standards, ensure efficiency of hospital operations, and implement quality improvement mechanisms. Moreover, for cases to qualify for Philhealth payment, hospitals must ensure complete and accurate records of services and compliance to clinical standards.

To secure a license to operate and PhilHealth accreditation, the Garcia Memorial Provincial Hospital (GMPH), a secondary local government hospital in Bohol, Philippines, installed continuous quality improvement (CQI) mechanisms. In a series of problem analysis sessions as part of their CQI initiatives, they have consistently found the high incidence of denied Philhealth claims, questioning the quality of their health services.

Methods: The GMPH used problem analysis and quality improvement tool kits, including root cause analysis and plan-do-study-act cycle, to address the high cases of denied requests for Philhealth payment. In 2020, they found that charting and documentation deficiencies (e.g., incomplete records of assessment and services) were the most common reason for these denials, which also compromise the quality of care and patient safety.

Using the PDSA cycle, they tested and later mainstreamed recalibrations in their documentation processes including (1) standardization of charting; (2) regular audit of charts; and (3) assignment of staff who will review compliance with service protocols, hospital records, including those required for Philhealth claims, and track requests for Philhealth payment. The hospital's CQI team was tasked to lead the implementation of this quality improvement project and institute its sustainability mechanisms. The hospital also capacitated their nurses and other hospital personnel on effective charting.

Results: Denied requests for Philhealth payment reduced from 988 in 2021 to 364 in 2022, following the commencement of the CQI initiative. This led to nearly 30 percent increase in hospital earnings. Charting errors also decreased from an average of 12 per month in 2021 to 3 per month in 2022. Meanwhile, the hospital's nursing staff reported that through the capacity building activities spearheaded by the hospital management, their appreciation of the value of proper documentation not only in securing insurance claims but more importantly in ensuring the quality of care greatly improved.

Conclusion: Accreditation and insurance claim requirements could trigger the implementation of quality improvement initiatives. Hence, it is necessary that insurance agencies effectively execute their quality improvement policies to enjoin healthcare institutions to comply with standards and institute mechanisms to improve their services. Meanwhile, in hospitals, continuous capacity building activities coupled with regular assessments and audits are viable mechanisms in addressing ineffective and deficient practices and institutionalizing new standards, like in charting and other service documentations.

Disclosure of interest: None declared.

ISQUA2023-ABS-2257

EQUITY OF POPULATION-WIDE COLORECTAL CANCER SCREENING PROGRAMME IN HONG KONG

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Introduction: The Hong Kong government initiated its publicly funded pilot colorectal cancer screening programme (CRCSP) in 2016 for residents aged 62-71. Following positive response, the programme was expanded to population-wide to residents aged 50 to 75 years old in 2018. We developed a socio-economic index and examined its association with colorectal cancer screening before and after the implementation of the screening programme.

Methods: To assess the equity of the colorectal cancer screening program, we applied multiple factor analysis onto eight variables from a population-wide cross-sectional survey (n=4,367) to derive a Hong Kong socioeconomic index. Logistic regression was used to examine the association of the socioeconomic index and colorectal screening in three population surveys in 2011-2013 (FAMILY cohort survey), in 2014-2015 (Population Health Survey; PHS) and 2018-2021 (MOV survey). Survey participants were grouped into quintiles for analysis by socioeconomic status with all surveys adjusted for age and sex.

Results: Disparities between socioeconomic groups narrowed after the implementation of the public colorectal cancer screening programme in 2018 (see Figure). Before the launch of the colorectal screening program, the association of having colorectal cancer screening among socioeconomic groups varied from 0.63 (95% CI: 0.31-1.22) to 1.72 (0.97-3.13) in 2011-13, and 0.67 (0.52-0.86) to 1.8 (95% CI: 1.4-2.3) in 2014-15 compared to the lowest socioeconomic quintile. After the screening programme, disparities in participation narrowed with the odds ranging from 0.95 (0.76-1.20) to 1.28 (1.02-1.60) among the socioeconomic quintiles. The derived socioeconomic index consisted of five domains: nuclear family, marital status, education level, housing (private vs public and ownership), and average household income per person.

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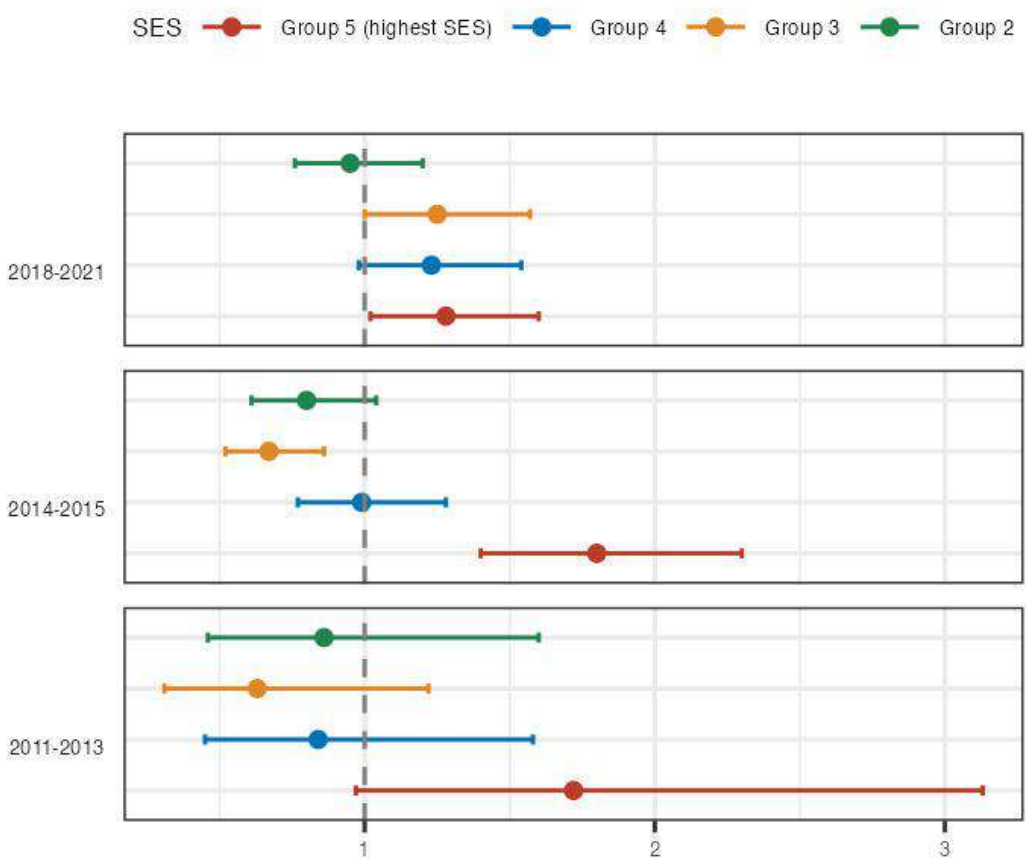

Conclusion: The introduction of a publicly funded population-wide colorectal screening programme narrowed disparities between socioeconomic groups and improved equity of access to health screening.

Disclosure of interest: None declared.

ISQUA2023-ABS-2261

ENSURE SAFER SYSTEMS: SINGAPORE'S PUBLIC HEALTHCARE INSTITUTIONS' ZERO HARM JOURNEY BEYOND ACCREDITATION

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Introduction: Singapore's healthcare system prides itself with delivering world-class services that has translated into health outcomes that are comparable to OECD countries. This comes off the back of a strong tradition of continuous learning and improvement to deliver safe care in the hospital setting. Extensive accreditation experience under the Joint Commission International (JCI) and greater local expertise and capabilities served as a strong impetus to develop a Singapore-specific national quality strategy leveraging on the expertise of the JCI. In 2021, MOH embarked on a five-year collaborative with JCI called the Ensure Safer Systems (ESS) programme designed to support Singapore in the pursuit of sustained high reliability in healthcare services beyond accreditation. This programme aims for the institutionalizing core principles of leadership and safety culture, developing Singapore-focused, contextualized performance standards, training a cadre of institution-based quality leaders, and the provision of ongoing support from JCI and its affiliates.

Methods: The Singapore MOH and 17 partner healthcare institutions have been working with the JCI to achieve five key tasks, namely, developing core infrastructure for ESS oversight and governance; building a change management programme; developing a Singapore-specific performance evaluation system, tools and evaluation process; capability building through targeted training, coaching, and provision of ongoing improvement expertise; and providing an assessment and action planning framework (Oro® 2.0) to understand the position of each healthcare institution on the high reliability journey. Key activities and deliverables for the five-year programme were identified, including involving primary care providers in the high reliability journey.

Results: The ESS programme is currently in its second year of running and benefited immersely from the strong commitment received from the leadership of the various healthcare institutions. Baseline challenges included managing the varying levels of capabilities among the 17 participating institutions, gaining consensus and managing expectations in the contextualised standards without undermining its original intent. To date, the programme has published the contextualised JCI's seventh edition of the Hospital Standards for Singapore; and completed 17 Oro® 2.0 High Reliability Organisational

Assessments, two hospital baseline assessments, 17 roadshows, 15 workshops and trainings, and numerous coaching covering zero harm and safety culture, change management tools and standards. Over 400 staff have been trained to use the Tracers with Accreditation Manager Plus tool, that allows for patient safety and quality data collection, analysis, and visualization, with over 608 user accounts created within nine months. By 2025, contextualised Ambulatory Care Standards and Primary Care Standards will be published. All participating institutions would have completed baseline assessments and regular self-assessments of Oro® 2.0 and standards, with each having a sustainable pool of trained facilitators, surveyors, and change leaders.

Image:

Conclusion: The adoption of internationally recognised standards that is contextualised to the local setting and greater involvement of stakeholders in its development has the potential to foster greater ownership and sustained active participation by Singapore healthcare institutions.

Disclosure of interest: None declared.

ISQUA2023-ABS-2271

INTENTION TO CONTINUE VACCINATION AGAINST COVID-19 IN TAIWAN AND COPING STRATEGIES DISCUSSION

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Introduction: Vaccination could have a substantial impact on reducing COVID-19 vulnerability. As the virus continued to evolve and spread, the present study aimed to figure out which factors could influence Taiwanese people's intention to continue vaccination against COVID-19 and provide the related coping strategies to help manage the pandemic.

Methods: A self-developed online questionnaire was based on the TPB (Theory of Planned Behavior) model. After conducting attention checks and cross-validation (n = 411 and n = 705), the final questionnaire was composed of 8 parts: Personal Background Information (10 items), Vaccination Experience/Preference (5 items), Pandemic Information Attention/Trust (3 items), COVID-19 Knowledge Test (10 items), Behavioral Intention (BI, 4 items), Attitude (ATT, 5 items), Subjective Norm (SN, 4 items), and Perceived Behavior Control (PBC, 4 items). BI, ATT, SN, and PBC, using a 7-point Likert scale, could explain between 65.8% and 75.1% of the total variance. The reliability coefficients were between.86 and.92. The results indicated that the instrument had good validity and reliability. Descriptive statistics, the EFA, reliability analysis, contingency table analysis, ANOVA, correlation analysis, and multiple stepwise regression were utilized for data analysis.

Results: The main study was conducted from September 15 to October 20 in 2022. Out of a total of 705 final participants with ages ranging from 11 to 81 years old (M = 24.71, SD = 10.08), 65% identified as female. 97% had received at least one COVID-19 dose (n = 411). 78% had received a third dose of vaccine (n = 550). 58% reported that they were very attentive to the government announcement (n = 411). 68% expressed trust in the Ministry of Health and Welfare (n = 485). 55% expressed desire to continue vaccination against COVID-19 (n = 388). Those with higher scores on the COVID-19 knowledge test had a higher tendency to be continuously vaccinated. People who were very attentive to the government announcement, trusted in the Ministry of Health and Welfare, and planned to vaccinate the next-generation bivalent vaccine, were more likely to keep up with COVID-19 vaccinations. The best predictors of continue vaccination intention were PBC (β = .32), SN (β = .22), ATT (β = .18), planned to vaccinate the next-generation bivalent vaccine (β =.10), and very attentive to the government announcement (β =.09), which all accounted for 50% of the total

variance. However, about 3% of the final participants had not been vaccinated for COVID-19. Nearly 10% of people refused to be continuously vaccinated, which was related to vaccine preference.

Conclusion: Most Taiwanese people not only regarded vaccination as an effective way to prevent COVID-19 infection, but also trusted the government's epidemic prevention measures. As the virus mutated frequently and the pandemic spread widely in Taiwan, the government's coping strategies were: 1) Government's credibility should be highly valued, and conducting anti-epidemic measures without scientific rigor should be minimized. 2) The government should purchase a sufficient quantity of next-generation bivalent vaccines. 3) The government should consider—the minority's concerns – to purchase BNT Next Generation Bivalent Vaccine ASAP.

Disclosure of interest: None declared.

ISQUA2023-ABS-2273

VALIDATION OF THE RATES OF ADVERSE EVENT INCIDENCE IN ADMINISTRATIVE HEALTHCARE DATA THROUGH PATIENT CHART REVIEW: A SCOPING REVIEW

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Introduction: Patient safety is a key quality issue for health systems and with adverse events (AEs) as main contributors to patient harm, their monitoring and measurement is a major priority. High rates of AEs are of concern to healthcare providers, patients and the general public, and often result in high costs, both human and financial. Administrative healthcare data provides an overview of the patient's encounter with the healthcare system. Diagnoses, procedures and complications are translated into alphanumeric codes by coding specialists using various classification systems. Such administrative datasets in healthcare offer the potential of a standardised approach to AE measurement and monitoring. Nonetheless, concerns remain over the accuracy of AE rates as represented in administrative datasets. Although potentially capable of providing valuable information on AE occurrence, inaccuracies may contribute to poorly informed healthcare decisions relating to patient safety. This has resulted in calls for validation studies to explore the reliability of administrative data with regard to AE rates, and to investigate further their potential to more reliably inform research and health policy.

Objectives: To present an overview of different chart reviewing approaches and tools used to validate rates of AE incidence in administrative datasets.

To collate and map evidence of chart reviewing to measure the reliability of these datasets.

Methods: This review was conducted in line with the Joanna Briggs Institute (JBI) methodological framework for scoping reviews. Databases such as PubMed (MEDLINE), CINAHL and Web of Science were searched for literature. A search for grey literature and of the reference lists of articles selected for inclusion was conducted. Publications were imported into Covidence and screened against the inclusion criteria. Articles that primarily focused on the use of chart reviews to validate AE occurrence in administrative data were included. A data extraction template was developed, and the data was extracted, exported to Microsoft Excel, arranged into a charting table and presented in a tabular and descriptive format. Ethical approval was not required as publicly available data was used to inform this

review.

Results: A total of 18 studies were identified for inclusion in this review. They indicated that there is wide variation in the representation of AE incidence in administrative data. Whilst some studies indicated that these datasets can be reliable sources of information on AE incidence, many studies identified that AE incidence is not accurately represented in administrative datasets when compared with data recorded in patients' clinical charts.

Conclusion: This review highlights the potential for administrative datasets to improve patient safety and healthcare quality by providing valuable data on AE rates that can inform patient care and staff planning decisions. Administrative datasets may also enable routine benchmarking of AE incidence within and across health systems. Accurate measurement and benchmarking, as important quality indicators, can enhance patient safety, improve quality of care and ultimately reduce costs to both patients and healthcare systems.

Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-2286

USING THE SELF-REPORT AUXILIARY SHEET TO IMPROVE THE COMPLETE RATE OF CHEMOTHERAPY SIDE EFFECTS ASSESSMENT

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Introduction: Chemotherapy is the use of drugs to treat cancer. However, the drugs cannot distinguish between normal cells and cancer cells, resulting in the destruction of healthy cells and side effects. The side effects of chemotherapy will not only reduce the quality of life of patients, but also reduce the compliance with treatment. Medical staff can timely give individual interventions against side effects, which can improve the efficacy of treatment. The study aimed to use the self-report auxiliary sheet to improve the complete rate of chemotherapy side effects assessment.

Methods: From August 2021 to November 2021, the total number of chemotherapy patients in this ward is 255. In a cross-sectional survey, **the lower completion rate (78.7%) of** chemotherapy side effects assessment was determined in the ward in a teaching hospital in northern Taiwan in that time. Through the cause and effect analysis and roots cause analysis in the lower completion rate of chemotherapy side effects assessment, the influence factors were that nurses did not follow the standard nursing procedure of chemotherapy side effects assessment. When assessing side effects, nurses need to confirm common side effects with patients item by item. The common side effects included fever, nausea or vomiting, oral mucositis, loss of appetite, diarrhea, constipation, hair loss, headache, skin rash, pain at the injection site, allergies, hematuria, depression, hearing loss, etc. Due to the many side effect evaluation items, it is easy to cause incomplete evaluation by patients and nurses. Therefore, we designed the self-report chemotherapy side effects auxiliary sheet. When the patient admission to our ward, we will tell them the auxiliary sheet how to use and let them know, the side effects including which items and need to tell caregivers immediately.

Results: Four hundred sixty patients were studying in this study from July 2022 to December 2022. The completion rate of chemotherapy side effects assessment increased significantly from 78.7% to 96.3%.

Conclusion: The results represented that this intervention was the benefit of increasing the Completion Rate of chemotherapy side effects assessment to improve chemotherapy

patient safety. It can also empower patients to work together for chemotherapy caring quality.

Disclosure of interest: None declared.

ISQUA2023-ABS-2312

OPTIMIZING TIME ACCESS TO DIAGNOSIS OF ACUTE STROKE PATIENTS AT MILITARY HOSPITAL 175

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Introduction: Door-to-Imaging Time (DIT) has a great influence on the effectiveness of treatment for patients with acute stroke. Optimizing stroke care time requires a combination of dramatically improved patient care procedures and reduced emergency department overcrowding. According to NHCPS and Reznek et al. (2016), CT scans should be performed within 10 to 25 minutes of the patient's arrival at the Hospital and the results should be read within 45 minutes. According to statistics, from 2019 to 2022, each year Military Hospital 175 (MH175) receives about 1500 patients diagnosed as having stroke and this number tends to increase over time. The DIT of stroke patients is 43 min, equivalent 1⁄2 DIT of the remaining patients.

Methods: The number of patients admitted by the Emergency Department (ED) tends to increase over time. It has a direct impact on the timeliness of the treatment of patients. Therefore, MH175 has developed and completed related processes to optimize the medical examination and treatment process.

Differences between a stroke emergency procedure and a regular emergency procedure include:

1. Voice command "Acute Stroke"
2. Establishing a Code Stroke Team
3. Process optimization at Department of Diagnostic imaging
4. Flexibility in the analysis of diagnostic imaging results
5. Continuous training
6. Record data.

Results: DIT of stroke patients has a relatively large difference compared to other patients in the emergency department. It is only ½ DIT of the remaining patients (43 min and 84 min).

In 2022, the number of patients admitted to ED in general as well as acute stroke patients in particular increased nearly 3 times compared to 2019. Facing difficulties when the number of patients increased sharply, the improvements in the procedure have been somewhat effective in maintaining a relatively stable stroke patient's DIT (except in 2021, during the outbreak of the Covid-19 pandemic).

According to NHCPS and Reznek et al. (2016), CT scans should be performed within 10 to 25 minutes of the patient's arrival at the Hospital and the results should be read within 45 minutes. In MH175, except for the period of Covid-19 in 2021, most of the remaining time have time to return CT scan results in less than 45 minutes.

For stroke patients with CT scan, the median DIT was 34 min and the median time from the patient entering the ED to receiving the CT results was just over 3 min and was valid for 37 minutes. Although DIT results are not guaranteed to be timely within 10 to 25 minutes from the time the patient arrives at the ED (28.52%), in general the results are still guaranteed within 45 minutes (65.35%).

Image:

Figure 1. Stroke emergency procedure (from the time of admission at the Emergency Department to the time of receiving the imaging results)

Table 1. Comparison of stroke emergency procedures and normal emergency procedures

Step	Normal emergency procedure	Stroke emergency procedure
Reception	Receive and execute in turn according to the order number.	*Priority is given to implementation through voice commands and stamps "Acute stroke".*
CT scan/MRI	The technician conducts a CT scan/MRI.	The technician conducts a CT scan/MRI.
Analyze the results	The doctor of the Department of Diagnostic imaging reads the results on the system after the technician completes the imaging process.	*Radiologists, neurologists cooperates to read the results on the scanner, at the same time as the technician performs the scan.* Proactively implement interventions as soon as results are available.
Return results	Print and return the result.	Print and return the result.

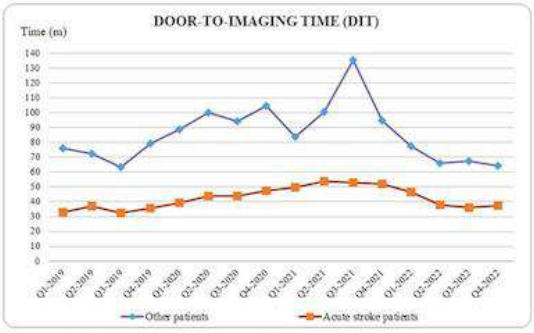

Figure 2. DIT in the Emergency Department (2019-2022)

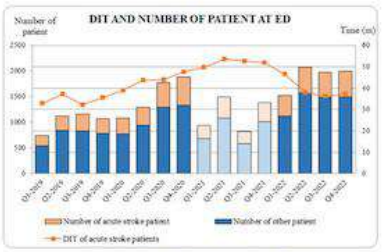

Figure 3. DIT of stroke patients and the number of patients admitted to ED (2019-2022)

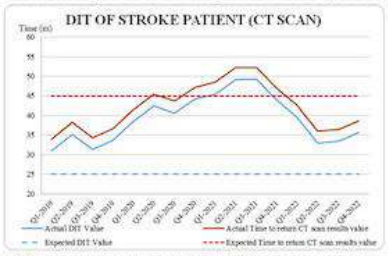

Figure 4. Difference between expected and actual values of DIT and time to return CT scan results.

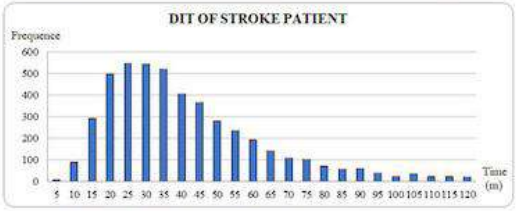

Figure 5. Histogram of DIT of stroke patients (2019-2022)

Conclusion: Although it cannot help reduce the overload in the emergency department, MH175 still ensures that the increase in the number of patients does not affect the DIT of stroke patients and maintains the time to return CT results at less than 45 minutes.

A testament to the effectiveness of the stroke emergency procedure is that in 2022, MH175 has been awarded the World Stroke Organization recognized the Platinum standard in the treatment of stroke patients. Becoming one of the leading hospitals in Vietnam in the treatment of stroke patients.

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ISQUA2023-ABS-2316

STRIKING CANCER THROUGH QUALITY MEASURES: ORIENTATION CANCER CENTERS (COROS), AN ITALIAN EXPERIENCE TO INCREASE HEALTHCARE FOR CANCER

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Introduction: On behalf of The Apulian Cancer Network, in 2019 [1] we have created a new functional structure named COrO (Centro Orientamento Oncologico), the Orientation Cancer Center, in order to reduce the time for taking in charge cancer patients, to improve the quality of assistance from the very first appearance of cancer symptoms. We have set up 18 COrOs covering all the Regional area, which is divided into four oncological departments (Figure 1) The instrument of clinical and organizational audit, as a strategical approach to verify the journey of cancer patients and its efficacy, is well described in the National Cancer Plan and European beating cancer plan [2, 3].

Methods: We used as a first step, the instrument of audit onsite to verify the function of every COrO, according to the criteria described in the regulatory bill of its institution [4]. Moreover, we want to examine the compliance of every structure in terms of organization (GI), quality and national safety criteria (QSI) [5] and the volume of people taken in charge (quantitative item). We consider a COrO compliant for quantitative item when the taking in charge has a volume of patients ranging between 50 and 100.

We consider, as a second step, the percentage of improvement based on the documents that every hospital had transmitted to the Regional office. We have planned to visit every COrO as a "follow-up" audit to verify the reduction of non compliance items as documented and the improvement of the patient's journey in a real clinical scenario. Regarding quantitative items is too early to see an improvement, which can, usually, be determined on a long term basis.

Results: We have summarized the results of verification activities in the table below:

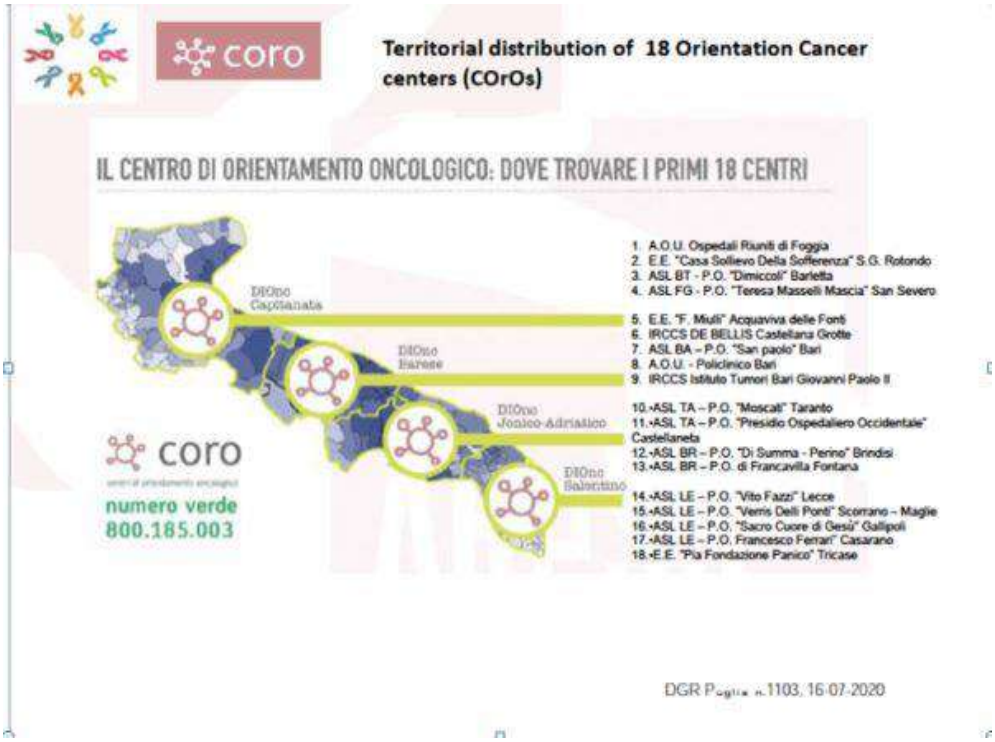
Table 1: The results of non compliance criteria (NCC) at baseline and after audit for each

area

Non Compliance criteria (NCC)	Baseline (%)	After audit	% improvement
"Capitanata" Oncological Department	46 (GI) 48 (QSI)	24 (GI) 19 (QSI)	22 (GI) 29 (QSI)
"Barese" Oncological Department	62 (GI) 52 (QSI)	30 (GI) 26 (QSI)	32 (GI) 26 (QSI)
"Ionico-adriatico" Oncological Department	34 (GI) 9 (QSI)	8 (GI) 8 (QSI)	26 (GI) 1 (QSI)
"Salentino" Oncological Department	65 (GI) 83 (QSI)	35 (GI) 24 (QSI)	30 (GI) 59 (QSI)

Legenda: GI=Governance item; QSI= Quality and safety item.

Image:



Conclusion: This experience shows that the complexity of the organization in cancer care needs more instruments for both clinical and organizational audits, in order to perform better results for the patients, for the certification of the quality and its continuous improvement. These must be the goals of every cancer network according to the Europe's Beating Cancer plan.

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Disclosure of interest: None declared.

Universal Health Coverage and Equity

ISQUA2023-ABS-2324

TRENDS IN ACUTE STROKE RELEVANCE INDEX, 2016~2021 IN SOUTH KOREA

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Introduction: Korea has accredited 14 Regional Cardio-cerebrovascular disease Centers (RCCs) nationwide so that Cardio-cerebrovascular patients can receive appropriate treatment at hospitals close to their residence within the golden time. The percentage of patients receiving treatment within their residential area can be measured by the Relevance Index (RI). The aim of this study is to: The first aim was to analyze the nationwide Acute Stroke RI trend for the last 6 years. Second, to compare the difference in RI between regions where RCCs are located and those where they are not located.

Methods: This study used National Health Insurance (NHI) claims data from 2016 to 2021. The analysis area was divided into an area where RCCs is located and an area where RCCs is not located based on the emergency medical area classification of the Ministry of Health and Welfare. The RI, which is the rate of Acute Stroke patients treated in the hospital emergency room located in their residential area, was calculated using the formula (Figure). To analyze the nationwide Acute Stroke RI trend from 2016 to 2021, join point regression was conducted (Joinpoint Regression Program 4.9.1.0 was used). A Student's T-test was conducted to compare the difference in RI for Acute Stroke between regions with and without RCCs (SAS Enterprise Guide 7.1 was used).

Results: From 2016 to 2021, the nationwide Average Annual Percent Change (AAPC) of Acute Stroke RI was 0.38 (95% CI, 0.06 to 0.70), which was a statistically significant upward trend. The trend of RI in regions where RCCs were located was not statistically significant, and the AAPC of Acute Stroke RI in regions where RCCs were not located was 0.44 (95% CI, 0.07 to 0.81), showing a significant upward trend. In all years, the RI in regions with RCCs was higher (4.9%p to 7.0%p) than the nationwide average, and the RI in regions without RCCs was lower (−4.9%p to −5.8%p) than the nationwide average. The 2021 Acute Stroke RI of the area where the RCCs was located was 10.9%p higher than that of the non-located area, which was statistically significant (t=2.93, *p-value*<0.05).

Table 1: Korea's Acute Stroke Treatment Relevance Index (RI) Trend (2016-2021) and Difference (2021)

	Relevance Index (%) by Year						AAPC	T-test
	2016	2017	2018	2019	2020	2021	(95% CI)	(2021)
RCCs in Areas								
Located	84.40	83.82	83.64	82.76	84.26	83.95	−0.06 (−0.57 to 0.45)	t=2.93[a]
Non-located	71.58	72.50	72.70	72.92	73.67	73.06	0.44[a] (0.07 to 0.81)	
Nationwide	77.39	77.62	77.58	77.87	79.04	78.54	0.38[a] (0.06 to 0.70)	-

[a]Significant at $P < .05$.

*AAPC, Average Annual Percent Change; RCCs, Regional Cardio-cerebrovascular disease Centers.

Image:

$$RI_{ji} = \frac{Volume\ of\ medical\ use\ of\ hospitals\ in\ region\ i\ by\ patients\ residing\ in\ region\ j(M_{ji})}{Total\ medical\ use\ volume\ of\ patients\ residing\ in\ j\ region(M_j)}$$

RI_{jj}, Ratio of patients residing in region j who use medical services in region i (100% if all medical use is resolved within the residential area)

Conclusion: Korea's Acute Stroke RI has been steadily rising nationwide. However, It was an unexpected result that the trend of Acute Stroke RI in the area with RCCs was not statistically significant, whereas the RI in the area without RCCs showed a trend of significant increase. Therefore, a cause analysis is needed. In addition, a factor analysis is needed for the result that the RI of regions where RCCs are located is higher than the RI of regions where RCCs are not located in all years. Through this, it is necessary to promote RCCs re-accreditation or new accreditation policies focusing on regions with relatively low Acute Stroke RI in the future.

Disclosure of interest: None declared.

ISQUA2023-ABS-2330

DOES TELEHEALTH ENCOURAGE "LAZY MEDICINE"? A QUALITATIVE STUDY ON THE UNINTENDED CONSEQUENCES OF TELEHEALTH IN RURAL AUSTRALIA USING SYSTEMS ARCHETYPES

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Introduction: While research has reported many benefits of telehealth for rural communities, very little is known about the unintended consequences of telehealth on healthcare delivery in rural Australia. There is a lack of empirical research that considers the unique social and health circumstances of rural communities in Australia, and the complex nature of introducing a technical intervention such as telehealth to the healthcare system. By taking a systems-thinking approach and involving diverse stakeholder groups, this qualitative study aims to close this gap by assessing the unintended consequences of telehealth in rural Australia.

Methods: We used semi-structured interviews to collect the perspectives of various stakeholders involved directly or indirectly with telehealth in rural Australia. Participants included consumers, health providers, state governments representatives, and Primary Health Networks (PHNs) representatives. There were 17 participants interviewed with an average interview time of 32 minutes. Interviews were conducted using Microsoft Teams, and where not possible, telephone was used. Interviews were recorded either with the built-in feature in Teams or using an audio recorder for the telephone interviews. Interviews were transcribed verbatim, and transcripts were analysed inductively and deductively to identify themes using systems archetypes [1] as a framework.

Results: The emerging themes of telehealth unintended consequences in rural Australia fall into two categories: reported unintended consequences, and concerns or potential unintended consequences as voiced by some stakeholders' groups. Some of the reported positive unintended consequences of telehealth are: its support for person-centred care by 1) providing care in a familiar environment 2) empowering patients by making them feel in control during consultations, 3) offering flexibility and saving unnecessary costs of travel and accommodation, 4) giving them choice on where to seek care. Also, telehealth was seen as a driver of healthcare equity. Some of its negative unintended consequences are: prone to financial exploitation by doctors, the tendency of some doctors to overprescribe antibiotics over telehealth, change of clinical workflows, overriding or bypassing the decision-making of

local GPs, lack of metropolitan telehealth services of the local context leads to inefficiency, no added value and extra cost for patients, concerns about whether telehealth encourages "lazy medicine" by care providers, the funding policies of telehealth could inadvertently redirect resources from rural areas to metropolitan areas, and whether telehealth is increasing the digital divide between rural and metropolitan areas.

Conclusion: Drawing on systems thinking and complexity science, this study contributes to our understanding of what unintended consequences telehealth has on the delivery of healthcare in rural Australia. The study has invaluable implications for telehealth evaluation programs and health policymaking to optimise telehealth utilisation and mitigate its negative impact on rural communities in Australia. Despite being an Australian study, this work has implications for other countries as there is now widespread use of telemedicine across the world. We will discuss these international implications.

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Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2334

USING AN ONLINE CONSENSUS-BUILDING APPROACH TO REDEFINE, MEASURE AND IMPROVE STAFF ENGAGEMENT IN MAJOR CHANGE

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Introduction: Growing evidence suggests good staff engagement is essential for quality and safety of patient care. And some NHS staff engagement measures, such as autonomy of staff to make improvements, have declined.

The literature on employee engagement is large but doesn't suitably address the current UK health and care context: a unique set of pressures, changes and staff shortages. Existing measurement is inadequate for the scale/nature of change needed; a different approach could support sustainable improvement.

Our project uses an online consensus building approach via Thiscovery. It draws on improvement measurement principles and expertise from quality improvers (primarily Q Community) to coproduce a new definition and measurement approach that is fit for purpose.

Methods: We ran a four-stage online consensus process to co-produce a new definition of staff engagement, to improve its measurement in healthcare settings.

The task sequence was: 1. Crowdsourcing definitions of staff engagement in the current context; 2. Ranking exercise for 17 identified areas; 3. Developing guidance for measurement; 4: Developing measurement indicators.

We used mixed-methods with 135 quality improvers from the Q Community and Thiscovery network. Survey design used multiple choice, free-text and ranking questions to elicit preferences and beliefs to take into future tasks.

We used 'stimulus' to introduce tasks (in tasks 2, 3 and 4 this drew on analysis/synthesis of previous task results). We used the cohort's views to iterate the design of ensuing tasks. Our structured, progressive approach drew on the Delphi method.

We used inductive thematic analysis to identify themes, with reflexive coding to iterate these. Quantitative analysis included descriptive statistics (eg demographics), identifying

popularity of items, and latent patterns when these were grouped.

Results: 135 quality improvers co-produced a new framework for staff engagement in major change.

We identified a hierarchy of conditions for good engagement. These included the need for: change processes to be co-owned from the beginning (including problem definition); permission to shape throughout; clarity of rationale for change amid 'change fatigue'; conditions for psychological safety via a compassionate approach; and having a structured, iterative approach (drawing on improvement principles) with time for testing and feedback.

A key theme was the prominence of what we describe as 'improvement-led change', which can inform strong measures for progress.

The paper will present our measurement guide for improvement. This includes development of new indicators, integration into existing frameworks and embedding within organisational planning processes.

Conclusion: Our work offers a solution to the gap between current definitions and what present challenges demand.

It priorities *how* engagement happens: the change management philosophy (eg one that is inclusive and engaging) and operational delivery (eg structure, mechanisms, communication).

Use of improvement approaches and staff buy-in are also essential for change leaders who want to effect successful engagement and sustained change.

This project demonstrates how online methods can be used to engage participants with varied expertise quickly and at scale, connecting them with researchers.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2348

THE IMPACT OF CONTINUOUS QUALITY IMPROVEMENT ON SLEEP DISTORTION IN CRITICAL PATIENTS

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Introduction: Intensive care unit (ICU) patients were shown to have poor quality of sleep over the last three decades. However, to improve the sleep distortion in critical patients remains challenging. The aim of this study is to investigate the impact of continuous quality improvement on sleep distortion in critical patients in critical patients

Methods: All consecutive patients form 2019-2021 in 6 adult ICUs were enrolled. The key interventions include novel sacral suspended decompression recumbent care, simple air pressure turning device, remote warning care system and using big data to monitor critical care warning indicators. The patients were divided into three periods: pre-intervention period from Jan to Dec 2019, intervention period from Jan to Dec 2020, and post-intervention period from Jan to Dec 2021.

Results: The sleep assessment ratio improved from 49.0% in pre-intervention period, to 67.5% in intervention period and to 95.1% in post-interventional period ($p<0.0001$). The good quality sleep ratio improved from 70.4% in pre-intervention period, to 74.2% in intervention period and to 87.8% in post-interventional period ($p<0.0001$). Average ICU stay decrease from 7.9 days to 6.9 days after intervention ($p<0.05$). The incidence of ventilator-associated pneumonia decreased from 0.7‰ to 0.4‰ ($p<0.05$). The mortality decreased from 7.6‰ to 5.2‰ ($p<0.05$).

Conclusion: The study showed that implementation of continuous quality improvement using novel critical care system could increase sleep assessment ratio and good quality sleep ratio, and reduce average ICU stay. Furthermore, the incidence of ventilator-associated pneumonia and mortality also improved.

Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-2371

ELDERLIES' REFLECTION ON CARE RELATED QUALITY OF LIFE IN NURSING HOME

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Introduction: Quality improvement in health and care services has received significant attention in Norway with recent policies having an increased emphasis on personal preferences and quality of life as an outcome of care service delivery. Quality of life is a complex construct including objective, subjective, individually, and social aspects, that can only be assessed by subjective measures. This paper explores elderly people living in nursing homes reflection on the domains used to measure care related quality of life in a nursing home setting.

Methods: Structured interviews following a translated version of the The Adult Social Care Outcomes Toolkit (ASCOT) was carried out, including 18 elderly persons (72 – 96 years of age) living in nursing home in Norway. ASCOT measures Care-related quality of life (CRQoL), focusing on those aspects most affected by long-term care (basic needs, higher order needs and dignity) [1]. During the interviews the person were allowed to reflect and comment on the answers made to the closed questions in the interview guide. The interviews lasted between 25 and 70 minutes. Notes from the interviews was analysed using content analysis. The project was approved by the Ethics committee and all participants gave written consent prior to the interview.

Results: The analysis shows a process of adjusting to life in the nursing home. This adjustment related both to their current ability level and to the schedule of the everyday life in the nursing home. The preliminary results indicate three themes in the elderly's reflection around the domains important for quality of life. The first "The feeling of being trapped, but content" express the elderly's acceptance of the situation with decreased control over their everyday life. They are mostly content with the help they are offered and grateful for the opportunity to stay in the nursing home. The second "Adjusting to the institutional setting" concern the process of getting used to the everyday life in the nursing home, with its schedule, restrictions, and possibilities. Activities customized to individual preferences are rear, and most of the elderly persons spend a large part of the day looking out of the window, resting, watching TV or reading (if they are still able to). The last theme "The importance of family" cover the family members important role for social contact, administration of economy and other practical issues, help in understanding the nursing

home routines and support the elderlies voice when needed. None of the participants had made new friends at the nursing home, or even made conversation with other residents due to lack of interest or different obstacles like hearing impairment and cognitive function. This made elderlies with no close family in danger of feeling lonely and social isolated in the nursing home.

Conclusion: Elderlies living in nursing home adjust their expectations and demands, especially concerning higher order needs. This could be an effective strategy for a feeling of quality of life. However, it could also be the response to institutionalized expectations hindering elderly persons in nursing homes to receive a quality of services that would stimulate and fulfill their potential.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2382

ACCREDITATION OF FRENCH HEALTH ORGANIZATIONS (HCO): A METHOD FOR ESTIMATING THE AUDITOR RESSOURCES NECESSARY FOR THE MULTIPLICATION OF TRACER INVESTIGATIONS

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Introduction: To respond to a major orientation of the 5th iteration of Healthcare Quality and Safety Accreditation, medicalize and better take into account the result of the care, the French National Authority for Health (HAS) has chosen to significantly increase the number of tracer patients in its surveys.

The objective was therefore to model a tool making it possible to estimate surveyors needs for the implementation of these numerous tracers in accreditation surveys of HCO.

Methods: The estimation was carried out in 3 stages.

1. **Calculation of the number (nb) of tracers for each of the 2400 HCO:**
   2 Variables were used.
   - **Types of activity sectors in HCO:** MCO (Surgery, Medicine, Obstetrics), psychiatry, post-acute and rehabilitation, Long Term Care Unit, home hospitalization, intensive sectors, dialysis, emergency, mobile accident unit.
     The principle is to carry out at least 1 tracer patient and 1 tracer pathway per field of activity.
     The nb of tracers at this stage varies depending on the nb of activity domains of the HCO.
   - **HCO size**
     The activity sectors are divided into deciles by size, i.e.: nb of beds or places for the hospitalization sector, nb of passages for emergencies.
     A fixed nb of tracers is defined for: dialysis, mobile accident unit.
     The nb of tracers per field of activity is thus adjusted according to the size of the activity: 1 to 9 tracer patient, 1 to 3 tracer pathways.
   - **A capped nb of tracers per HCO:** 20 tracer pathways/80 tracer patients maximum.
2. **Surveyor team sizing:**
   - **Duration of the survey,** based on that of the previous iteration.
   - **Nb of surveyors/profile/survey.**

   It is calculated on the basis of:

- Nb of tracers estimated.
- And considering the following principles:
  - A maximum capacity of 4 patient-tracers per day and per doctor, 2 route-tracers per day.
  - Up to 3 EV doctors can be mobilized for major visits.
  - Beyond: use of the new profile of Tracer Patient Doctor (TPD), occasional reinforcement of the team.
  - 1 manager per visit.
  - For reasons of efficiency, the sizing of small structures is capped at 2 EV/3 days.

3. **Nb of surveyors (staffing requirements)**
   It is calculated on the basis of sizing by HCO.
   And Considering:
   - 2400 visits to be made over 4 years.
   - 4 visits per surveyor per year, 2 days per TPD per year.

Results: Example of application – 1rst calculation step - Estimation of tracers to be made for 1 psychiatric HCO:

Areas of activity	Nb of beds/places/passages	Decile	Tracer patients	Tracer pathways	Total Tracers
Psychiatry Complete hospitalization	385	10°	9	2	11
Psychiatry Day hospitalization	42	7°	4	2	6
Total	427		13	4	17

This modeling in 3 calculations steps made it possible to engage in a reliable, secure and shared way the actions necessary for the recruitment, the training of the surveyors and the launch of the visits.

1½ years after the launch of the first surveys, the increased staff of 801 surveyors, thanks to the recruitment of 565 new surveyors, including 294 doctors and 200 caregivers, made it possible to carry out 856 surveys, 7,052 tracer patients and 3,425 tracer pathways.

Conclusion: This modeling made it possible to identify sufficiently early on the significant gap between available ressources and necessary ressources, and to conduct a large-scale recruitment campaign.

It has been the subject of a framework validated by the high authorities of the HAS, a fundamental preliminary step for its success.

It was used as a basis for the modelling, with adjustments of course, of the actual sizing of the visits, with the shared satisfaction of the teams.

Reference

1. Manual - Healthcare Organisation Certification for Quality of Care - HAS, 2022.

Disclosure of interest: None declared.

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ISQUA2023-ABS-2386

IMPROVING CARE THROUGH COLLABORATIVE REGULATORY DESIGN - THE BENEFITS OF STAKEHOLDER ENGAGEMENT IN THE DEVELOPMENT OF AGED CARE ASSESSMENT METHODOLOGY

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Introduction: The national aged care system in Australia is currently undergoing significant reform which includes the development of a new Aged Care Act, a new regulatory framework and a new set of aged care quality standards - all scheduled for introduction in July 2024. During 2023, the national regulator of aged care - the Aged Care Quality and Safety Commission (Commission) - must develop a new assessment methodology for use in assessing the compliance and performance of aged care providers against the new quality standards. In planning its approach to this significant undertaking, the Commission has identified a range of benefits to be gained from early and ongoing engagement with key stakeholder groups, viz. people who use aged care, and providers of aged care. These benefits include better informed consumers who are empowered to self-advocate, and providers who are more confident and competent in achieving and exceeding compliance with the new quality standards. The Commission is currently considering the best means of enabling constructive, mutually rewarding engagement with these stakeholder groups to harness the full value of collaboration.

Methods: The Commission's initiative to engage with key stakeholder groups in the development of an assessment methodology for use with the new aged care quality standards is empirical research. Planning for this exercise is underway with a view to piloting an audit methodology from April/May 2023.

The pilot program will inform:

- Whether the draft revised quality standards can be effectively implemented
- How the Commission will adjust the way it assesses provider performance under the revised standards
- What support providers will need to understand and meet the revised standards
- How to best support older Australians to understand what the revised standards mean for the delivery of safe and quality aged care.

The outcomes of the pilot program will also highlight if the standards need further

revision.

Results: As noted above, planning for this empirical research exercise is underway with a view to piloting an audit methodology from April/May 2023.

It is expected that feedback from providers audited using the new methodology, and consumers interviewed in the course of these audits, will be highly influential in the process of refining and ultimately finalising the assessment methodology.

By the time of the ISQua International Conference (late August 2023), the Commission will be well-placed to report on the approach adopted and the results achieved from this important design process.

Conclusion: The aim of the exercise is to design an assessment methodology for the Commission's use with the revised quality standards for aged care that is effective in:

- Incentivising aged care providers to deliver high quality care and to work on continuously improving their performance;
- Empowering aged care consumers to engage in the co-design of their care and services, exercise choice, and advocate on their own behalf; and
- Enabling the Commission as national aged care regulator to identify and respond effectively to risks at the levels of system, provider and service, in order to protect and enhance the safety, health, wellbeing and quality of life of everyone who uses aged care services.

Reference

1. Royal Commission into Aged Care Quality and Safety.

Disclosure of interest: None declared.

ISQUA2023-ABS-2415

PHYSICIAN DEPLOYMENTS IN THE SETTING OF A CRISIS: A MULTI-HOSPITAL NURSING STRIKE

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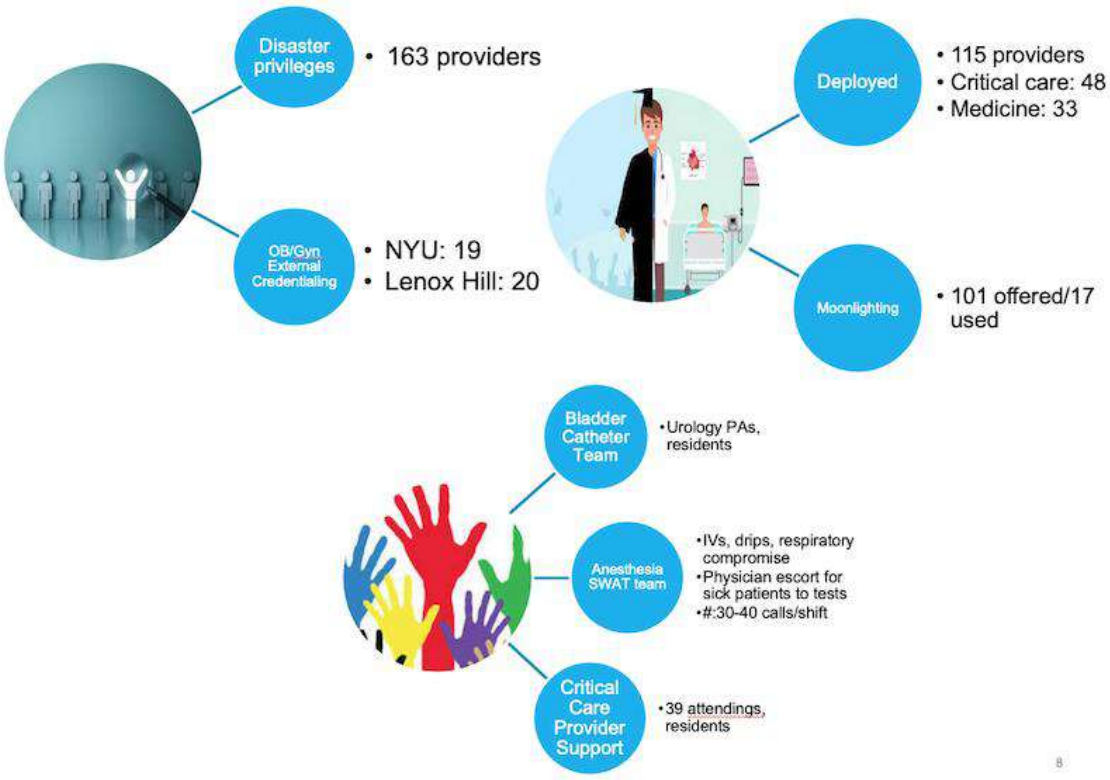
Introduction: In January of 2023, a multi-hospital nursing strike occured within our 8 hospital health system that resulted in the closure of one of our 500 bed hospitals, cancellation of elective surgeries, and the movement of hundreds of patients within and outside of our health system. During the strike, it was necessary to deploy physicians to assist in patient care to continue to provide clinical services in the setting of absent or low numbers of nurses.

Methods: We used a HICS crisis management infrastructure to set up command centers, identify leaders, and execute plans to keep our patient safe during this challenge. The cancellation of elective surgeries was necessary due to the paucity of nurses and this freed physicians to assist on floors, in the emergency room, and in intensive care units. Physicians were asked to accept deployments to unfamiliar locations and perform duties to assist the few nurses present. Skill sets were matched to need in various clinical areas which drove the strategy for catered deployments.

Results: 132 providers, both house staff and attending physicians were deployed throughout the health system to serve patient care needs.

Image:



Conclusion: We created a process by which providers could assist with the fulfillment of patient care needs during a three-day nursing strike at our 1100 bed urban, academic, tertiary-care hospital with concomitant strike activity in two other hospitals, both 500 beds each.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2423

INTEGRATING TEAMWORK INTO CLINICAL BUNDLES TO PROVIDE SAFER MATERNAL CARE

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Introduction: Maternal Mortality (MM) is a significant health challenge in the US. MM rose from 20.1 deaths per 100,000 live births in 2019 to 23.8 in 2020 [1]. Nearly 70% of MM cases are preventable. Two leading causes, hemorrhage (HEM) and hypertension (HTN), account for 11.0% and 6.8% of preventable MM, respectively [2]. In response, the Agency for Healthcare Research and Quality (AHRQ) sought to improve labor and delivery (L&D) unit safety culture and communication and prevent system failures. AHRQ partnered with researchers and the Health Resources and Services Administration (HRSA) Alliance for Innovation on Maternal Health (AIM) at American College of Obstetrics and Gynecology to: (1) integrate teamwork tools with AIM's HEM and HTN Patient Safety Bundles (PSBs) to form AIM's PSB Teamwork Toolkit (APTT) for L&D frontline staff and Team Leads, and (2) implement and evaluate the adoption of the APTT in two states.

Methods: A multi-disciplinary 16-person stakeholder panel with patient centered input guided the selection of ten teamwork tools to complement the PSBs. Each APTT includes: (1) a clinical case scenario, (2) training for frontline and AIM Team Leads, and (3) a practice session guide. Integrated in training, the case scenario shows a clinical team's use of teamwork tools whilst caring for a pregnant patient with HTN or HEM. Eighteen hospitals in Oklahoma and Texas implemented the HTN and HEM APTT's, respectively. In-person Team Lead training was held in February 2020. Web-based frontline training began in March 2021 after a COVID-19 related delay. Implementation evaluation identified factors that facilitated and challenged APTT adoption by L&D units. Six hospitals participated in semi-structured key informant interviews with each Team Lead and two frontline staff. Ten interviews were conducted and qualitatively analyzed using the Consolidated Framework for Implementation Research to identify key APTT implementation barriers and facilitators.

Results: Key findings are: (1) likability and helpfulness of HTN and HEM case scenarios aid in illustrating teamwork alongside clinical care, (2) shared patient care improvement goals, teamwork familiarity, compatibility with ongoing quality improvement projects, and leadership support contributed to successful implementation, and (3) easier accessibility to

training and flexible implementation strategy boosts adoption.

Conclusion: APTT's relatability, relevance, and simplicity encouraged its adoption by L&D staff, which is enhanced by improving accessibility and implementation strategy flexibility. APTTs may significantly improve maternal health outcomes by optimizing L&D teamwork.

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Acknowledgement of Agency Support

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Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2459

INTOUCH – A STRATEGY FOR COOPERATION AND COPRODUCTION FOR INTEGRATED HEALTH SERVICE DELIVERY

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Introduction: Pursuing seamless, integrated care is necessary to meet community expectations, technology and knowledge developments, and available resources. Integrated care strengthens health services by being flexible, people centred, comorbidity focused and deliverable by multidisciplinary teams across different settings. However, integrated care is not a one size fits all approach: understanding the service and practice nuances across different settings is required. To achieve integrated care, Western Sydney Local Health District (WSLHD) developed inTouch as a mechanism to ensure appropriate and quality patient care is delivered in the right environment. The study investigated the inTouch Program to identify core elements required to enable integrated care application in different organisational and care settings.

Methods: The research setting and focus was the inTouch Program. A case study methodology using document analysis (n=10 documents; 186 pages) and discussions with key informants (n=4) involved in the development, implementation and ongoing evaluation of the inTouch Program was used. Thematic analysis was used to identify, analyse and inform common themes.

Results: WSLHD partnered with multiple external and internal healthcare providers (NSW Ambulance, Western Sydney Primary Health Network, General Practitioners, Aged Care providers) to develop, deliver and modify several inTouch pathways, with flexibility to further develop pathways. Two care setting pathways include 1. inTouch COVID care in the Community, and 2. inTouch Residential Aged Care Facilities. Developed and refined from June 2021 – November 2022, there are six core elements (Table 1).

Table 1: Touch core elements

Elements	**Descriptions**
1. Stakeholder engagement and risk analysis	Identification and engagement of people who are at risk of hospitalisation

2. Population and individual care plans	Care plans developed to address population and individual health needs and risk factors
3. Continuum care coordination	Connecting patients to services across the continuum: acute, ambulatory, general practice and community health through navigation or referral to services
4. Shared decision making	Shared decision making between the patient, carer and all health care providers
5. Knowledge translation and health literacy	Bridge the knowledge gaps in health information and services to be able to make appropriate care decisions
6. Monitoring, review and adaptation	Identification of disease exacerbation, psychosocial issues and the need for initiation of early service provision

Conclusion: Accounting for nuances in organisational and care settings, is the difference between success and failure for integrated care. The inTouch Program achieves this by facilitating cooperation and coproduction between internal and external healthcare providers across primary care, aged care, community care and hospitals to reconfigure services. The inTouch Program core elements provide a common focus for service providers to integrate systems components, platforms for service delivery and environments for care delivery.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2479

CAN ADVANCED ANALYSIS INCREASE THE IMPACT OF PATIENT EVALUATIONS OF GENERAL PRACTICE? INSIGHTS FROM THE EUROPEP SURVEY DATA MODELLING PROJECT

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Introduction: For nearly 20 years, the 23-item questionnaire of the European Task Force on Patient Evaluations of General Practice Care (EUROPEP) has been in use in general practice in Switzerland and elsewhere in Europe. EQUAM, a Swiss nonprofit organization that supports quality improvement in ambulatory healthcare, mandates EUROPEP surveys as part of its accreditation program for general practice. EQUAM hypothesized that data from this longitudinal, multi-site patient survey could be used to develop a matching algorithm for optimizing the care experience of both patients and potentially, health professionals. Here, we present the results of explorative data analyses.

Methods: We conducted secondary data analysis of a dataset based on 42,000 completed questionnaires from anonymous EUROPEP patient surveys, carried out between 2017 - 2022 in over 200 sites in German-speaking Switzerland. The analytics included exploratory factor analysis, clustering, and decision tree modeling.

Results: As in earlier studies, younger and more educated patients were less likely to assign top ratings of their care experience. Otherwise, we found:

1. Factor analysis yielded four themes (latent factors) that could serve as areas for improvement in the primary care patient experience. These were “Helpful Information and Support”, “Emphatic and Attentive Communication”, “Customer Experience”, and “Facility Appearance and Cleanliness”.
2. Cluster analysis revealed four distinct patterns of experience: The largest segment of patients provided high ratings across all thematic areas of the survey. This was not surprising, as they typically had stayed with the same family practitioner over long periods of time. The second largest group provided moderately high scores for all themes. One group (about 6%) responded with very low scores on “Helpfulness Information and Support” and very high scores in all other areas. Finally, one group (4%) rated only questions on customer experience as very low.
3. Decision tree modeling, where we present the top 5 identified questions with the highest predictive power for elevated patient satisfaction. These included questions

about whether the doctor showed interest in the patient's personal situation (the single most predictive question of satisfaction); the cleanliness of the facility; the thoroughness of the doctor's approach towards the patient's problem; the ease of getting a suitable appointment and whether the doctor was able to remember what has been said or done during previous visits.

Conclusion: The secondary analysis of this large longitudinal multi-site survey yielded useful findings for the improvement of general practice. We believe that the modeling provides informed and customizable advice to primary care practitioners, patients and payors on how patient experience and possibly other aspects of the quality of care can be improved. Also, the analysis will be proposed as a basis for developing a short version of the EUROPEP survey, which should ease its uptake.

Disclosure of interest: None declared.

ISQUA2023-ABS-2490

THE PATIENT EXPERIENCE ASSESSMENT IN REPUBLIC OF KOREA

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Introduction: Health Insurance Review and Assessment Service (HIRA) was introduced the patient experience assessment in 2016 to improve patient-centered healthcare service quality in Republic of Korea. Currently, the third evaluation has been completed to measure the patient experience level of hospitals with 100 beds or more.

Methods: Subjects were 398,781 patients who are over 19 years old and were admitted to 359 hospitals. Patients were randomly selected by using the claimed data. Method was a telephone survey with structured questionnaire. And survey was conducted between May and November 2021 (for 6 months).

We collected the data of 100 to 300 people for each hospital depending on the size of the bed. The final goal of this survey was to collect data from 51,000 patients.

Survey questionnaire consisted of 24 questions. The main contents are nurse service, doctor service, hospital environment, treatment process, overall assessment and assurance of patient rights by reflecting Korean situation. In addition, asking about patient characteristics such as education, utilization of emergency room, and self-rated health.

A linearisation method (0-33-67-100 points, 0-100 points) was used for scores of each questions. Survey output and claimed data are utilized analysis of results. Also, patient-mix adjustment is currently in progress using patient characteristic variables for comparison between hospitals.

Results: We collected total 53,746 patients data and analyzing the results. The results were released in July 2022.

The overall score for the 3rd evaluation was 82.46 points. The score of five contents, excluding the attitude of patient rights, is 80 or higher. (86.38 points for nurse service, 81.72 points for doctor service, 82.82 points for hospital environment, 82.30 points for treatment process, 82.26 points for overall assessment, 78.77 points for assurance of patient rights).

Conclusion: The overall score of the hospitals that participated in the first evaluation increased (1st 83.94 points, 2nd 83.45 points, 3rd 84.53 points).

The HIRA conducted its survey on 359 hospitals employees to confirmed improvement in the medical field resulting from the start of assessment. Significant changes were observed in hospitals to improve the process of providing medical services (60.5%), such as providing information on rounds and strengthening privacy, and activities to improve the hospital environment (66.0%), such as supporting hospitalization and discharge procedures for patient convenience.

As a result, various efforts of hospitals have been identified, and patient experience assessment is presumed to have a positive effect on improving patient-centered health quality.

The 4th evaluation plans to measure the quality of medical care in various ways with the introduction of a mobile web survey. This can expand the subject of evaluation. And a more accurate patient experience level will be measured.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2527

A SYSTEMATIC REVIEW TO EXPLORE THE IMPACT OF ACCREDITATION ON HEALTHCARE QUALITY & ITS ASSOCIATED COST

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Introduction: Accreditation as a tool towards comprehensive quality improvement in healthcare has come a long way and has also seen the highs and lows with sceptics raising concerns about its usefulness to being widely accepted by healthcare providers. Therefore, a systematic review of literature was undertaken to assess the impact of accreditation vis-à-vis the cost.

Methods: A systematic search was carried out among three databases namely, Pub Med, Scopus and Cochrane (from 1951 to November 2022) using a combination of four keywords (Health Care Quality, Cost, Accreditation and Patient safety). All studies that were published in English including book chapters, editorials, interviews, etc. were included. Rayyan software (Free version – year 2022) was used for carrying out the systematic review (Figure 1).

Results: Systematic review revealed that accreditation has had both positive & negative impact on functioning of HCOs (Table 1). However, the positive impact heavily outweighs the negative impact. It was observed that accreditation was instrumental in accelerating integration & stimulating a spirit of cooperation. There is scope for high level of evidence to be generated in favour of accreditation as an important tool in improving Patient Quality & Safety.

Table 1:

Accreditation	
Positive impact	**Negative impact**
Clarifies things for hospital workforce Foster links between HCOs and other stakeholders	Resistance to change Just in time accreditation preparation
Gives competitive advantage for the organization	Increased organizational structural changes

Decreased mortality	New initiative's complexity
Improved grievance handling Increased compliance with regulations	Increased workload in turn decreases the performance quality Lack of good wages and incentives
Increased awareness of good practices among staff Promotes positive culture of accountability & transparency	No significant increase in the revenue Increased chances of incorrect documentation due to pressure
Improves training and research conditions Increased patient satisfaction Optimal utilization of available resources	Unbalanced scores for measures Impartiality from evaluators Physicians Non-participation
Increased patient centered care Improves internal communication	Requires Doctors and Nurses to allocate more time towards administrative task, physical & structural aspects and reduced emphasis clinical practice
Knowledge enhancement of staff/employee Instills sense of direction	High cost of implementation process acted as a barrier 1. Consultancy fees 2. Training Programmes 3. Repairs & renovation 4. Fee of accreditation visit

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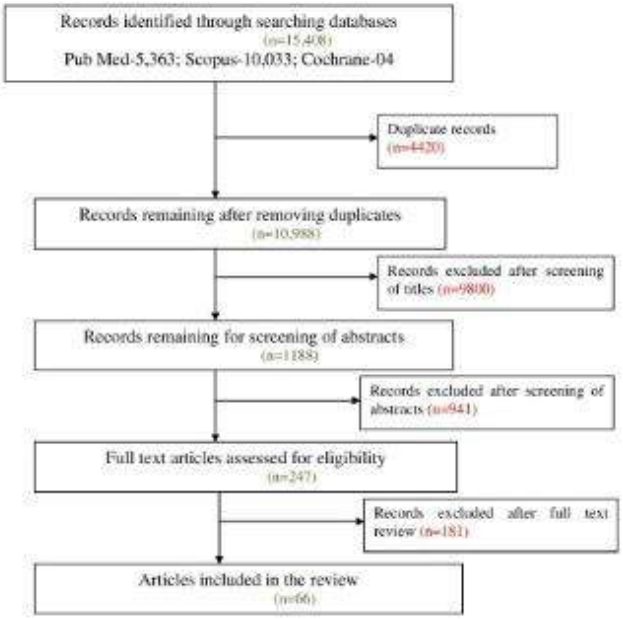

Figure 1

PRISMA (Preferred Reporting Items for Systematic Reviews & Meta-Analyses) **Chart** of Systematic Review conducted on Rayyan Software

Conclusion: Accreditation has a positive influence on the functioning of healthcare organizations, however, the benefits have to be weighed in light of the additional resources that it demands.

Disclosure of interest: None declared.

ISQUA2023-ABS-2535

"AGAINST ALL ODDS"- IMPROVING BEHAVIOR CHANGE TOWARDS INCREASED VACCINATION DEMAND IN NORTHERN NIGERIA: AN IMPLEMENTATION SCIENCE RESEARCH USING THE POSITIVE DEVIANCE APPROACH

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Introduction: Vaccines are safe, cost effective and one of the most successful health solutions of all time. Despite these benefits, low vaccination levels persist especially in low-income countries. In 2019, Nigeria had less than 80% coverage, accounting for 48% of un- and under-vaccinated infants in West and Central Africa. Centre for Integrated health Programs, with funding from the Bill and Melinda Gates Foundation in 2019, explored how childhood vaccination uptake could be optimized by improving behavior change (BC) using the Positive Deviance (PD) approach [1]. This approach suggests that in any community, there are people whose uncommon but successful behaviors enable them find better solutions to problems than their peers. This was used innovatively to answer the question why caregivers complete vaccinations for their children against all odds in low uptake settings. We present differences in BC towards vaccination uptake between a PD intervention and a control group in two Northern Nigerian states with low vaccination coverage.

Methods: This study was conducted at the end of a 24-month (May 2019- April 2021) intervention. Using focus group discussions, we identified 160 PD (caregivers of fully vaccinated child between 9 months and 2 years) and asked them why they fully vaccinated their children against all odds in communities that pose barriers to full vaccination. The responses were developed as local solutions to barriers to low vaccination using tested social change approaches and crafted into behavior change communication (BCC) tools. The intervention was delivered by 40 trained PD to 400 caregivers of non-fully immunized children (CNFIC) over a 5-month period using the tools. A client exit interview questionnaire was used to explore the knowledge and perceptions about vaccination uptake, assess and compare the stages of BC using the modified transtheoretical change model [2]. We randomly selected 102 CNFIC exposed to the intervention and 96 controls with similar characteristics.

Results: Socio-demographics of participants were similar across the two groups. The mean age of participants was 27 years (± 6.0). 54% of participants were housewives and 40% had secondary education. The intervention nearly doubled vaccination uptake from 44% at baseline to 85.9% and full vaccination at 55% from 0% at baseline. The scores in the five phases of BC assessed were higher among the intervention than control groups: 1) Knowledge phase ("Can recall key messages on immunization") – 84% vs 23% (χ^2 = 75.19, p<0.001); 2) Approval Phase ("Show support to continue vaccination") – 96% vs 46% (p < 0.001, χ^2 = 65.38); 3) Intending Phase ("Expresses intention to continue vaccination") – 91% vs 48% (p < 0.001, χ^2 = 44.24); 4) Practicing Phase ("Commitment to vaccinate") – 98% vs 68% (p < 0.001, χ^2 = 32.8). 5) Advocating/Impact Phase ("Spread the vaccination message to others") – 55% vs 26% (p < 0.001, χ^2 = 17.04).

Conclusion: Caregivers of un- and under-vaccinated children exposed to PD approach had better knowledge and attitude towards vaccination uptake than those not so exposed. Effective social and BC strategies such as the PD approach can fortify caregivers in bringing about desired changes towards vaccination uptake.

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Disclosure of interest: None declared.

Coproduction with Staff and Service Users

ISQUA2023-ABS-2541

IMPLEMENTING NOVEL TELEPHARMACY SERVICES IN NURSING HOMES TO PROVIDE PROACTIVE INTERFACILITY PHARMACEUTICAL CARE

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Introduction: Residents in nursing homes usually suffer from chronic comorbidities and need to take multiple prescriptions at the same time, a condition called polypharmacy. However, the nursing homes usually have no full-time pharmacists to help review prescriptions, thus the nursing staff are customed to ignore professional medication care with unadjusted medication and healthcare education. The risk of drug interactions should be mitigated, and quality of medication should be improved in those institutions.

The study proposes a “proactive cross-institutional tele-pharmacy service model (Figure 1)” to diminish the risk of absence of professional pharmaceutical care in long-term care institutions in Taiwan by providing virtual medication comparison, consultation, and guidance through secure extranet. This model provides three comprehensive and convenient pharmaceutical services including “drug prescription review”, “drug inquiry and identification service” and “remote pharmaceutical consultation service”. With the assistance of a tele-pharmacist, the nurse practitioner can focus on the clinical delivery of medications, allowing for more efficient and cost-saving care tasks.

Methods: A total of 42 cases had been collected in May 2021 with an average age of 75 years old. They suffered from three chronic diseases and thirteen medications were prescribed on average. After data collection and analysis of the medication problems, our st*udy* unveiled that each resident had an average of 2 medication-related issues, including 1 potentially inappropriate medication (PIM). Based on the data, we conducted t-test and Pearson correlation to measure the strength of the linear relationship between the constructs.

Results: After the intervention of tele-pharmacy, the pharmacists provided 0.64 medication instructions to the nurses and 1.24 medication recommendations to the physicians in average per virtual consultation session and consequently, the physicians made 1.26 revisions for the residents’ prescriptions, and nurses’ health literacy in pharmacy also increased by 61% in average. Furthermore, the Table1 shows that path coefficients (β) and p- values between the psychological construct and operational variables, which the medication adjustment advice (C) have a significant and high positive effect on prescription

revision(E) (β=0.931, p<0.001).

The in-person pharmaceutical care takes about 6 hours in average per resident with the expedition cost calculated about NT$2504. In contrast, the time of tele-pharmacy takes only 17 minutes per resident, and the cost is about NT$114 respectively. Thanks to tele-pharmacy services, nursing homes can save NT$236,610 per quarter.

Table 1: Correlation of tele-pharmacy service construct

cons.	A	B	C	D	E	F
A	1					
B	0.759***	1				
C	0.627***	0.371**	1			
D	0.466***	0.534***	−0.312*	1		
E	0.65***	0.364**	0.931***	−0.298	1	
F	0.466***	0.534***	−0.312*	0.945***	−0.298	1
Mean	2.02	1.17	1.24	0.64	1.26	0.61
SD	0.95	1.01	0.93	0.79	0.94	0.85

Note: *p<0.05, **p<0.01, ***p<0.001.

A: the medication problem, B: inappropriate medication, C: medication adjustment advice, D medication instruction reminds, E: prescription revision, F: nurses' health literacy.

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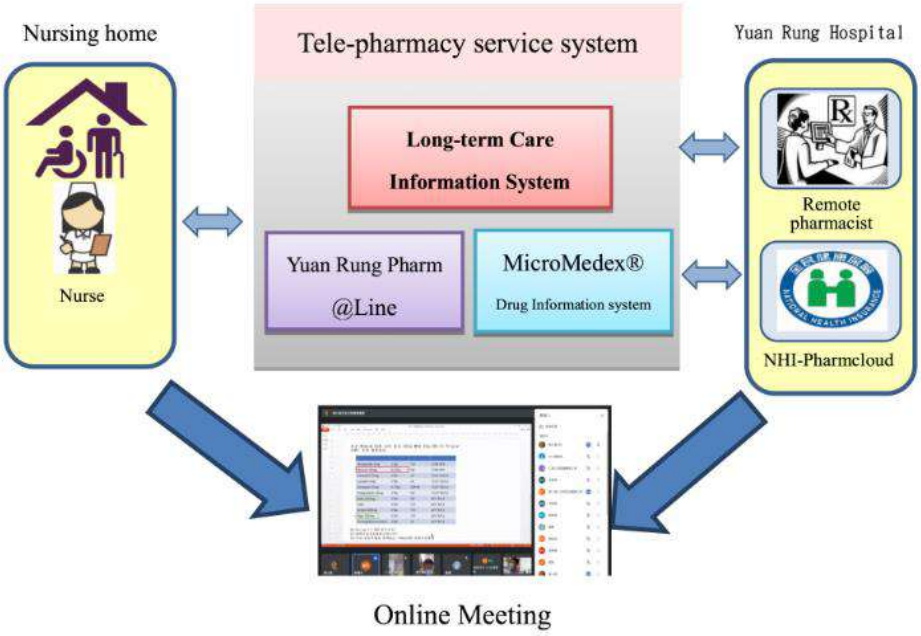

Figure 1 Proactive cross-institutional tele-pharmacy service model

Conclusion: In summary, by dint of tele-pharmacy services, pharmacists can provide more timely medication advice as they are more actively involved in medication care, enabling nursing home providers to efficiently deliver personalized and high-quality medication services without significant cost increases. The shift from in-person medication services to remote pharmacies is worthy of general promotion to enhance long-term care support.

Disclosure of interest: None declared.

ISQUA2023-ABS-2550

THE IMPACT OF SELF-LEADERSHIP SKILLS OF HEALTHCARE EMPLOYEES ON INSTITUTIONAL PERFORMANCE AND JOB PERFORMANCE

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Introduction: Considering challenges and opportunities associated with business life, leaders can achieve success in current environment of organization with some factors. These factors; the leader's entrepreneurial employees, who produce innovative and creative ideas, capacity pf using authorizations and shared leadership effectively in a certain trust environment. This research is conducted in order to investigate the relationship between self-leadership skills of health employees and job performance and institutional performance.

Methods: This research is carried out in accredited and non accredited two hospitals in Ankara. The self-leadership scale used in the study is the Self-Leadership Questionnaire consisting of 3 dimensions, 8 sub-scales and 29 items adapted to Turkish by Tabak et al. The survey prepared within the scope of the research was applied to health employees. A total of 332 (109 from accredited 223 from non-accredited) valid questionnaires were obtained from the survey conducted based on the total number of personnel of hospitals.

- Hypothesis 1 (H1): Self-leadership affect job performance of employees in health institutions.
- Hypothesis 2 (H2): Job performance of employees affect performance of health institution.
- Hypothesis 3 (H3): Self-leadership affect performance of health institution.

Results: When self-leadership levels of two institutions are analyzed in general, self-leadership levels of employees in the accredited institution (4.160) are found to be higher than the self-leadership levels of employees in non-accredited institution (3.830). Three different hypotheses are tested in the model. According to the findings obtained from the study, three hypotheses are accepted.

Conclusion: Institutional performance elements of the health institutions serving in a dynamic structure are ensured by compliance with internationally accepted standards and carried out with quality and accreditation systems. Many different quality assurance and accreditation systems around World implemented to provide quality in health services under the leadership of the institution. In Türkiye, hospitals are accredited according to the

level of compliance to the standards with the programs implemented by TÜSKA. It is becoming increasingly difficult for executives to have a control in all the work and operations of the organization in complex health institutions. Therefore, it is relevant to the performance of the organization and self-leadership skills of the employees with their performance in order to ensure patient safety and quality service delivery. When all the study findings were evaluated as a whole; employees' self-leadership skills are important in achieving institutional performance goals such as patient safety, efficiency and productivity in complex health institutions. Therefore, encouraging employees in this field and supporting them with the necessary training can be considered as an important parameter in reaching the objectives of the institution.

Disclosure of interest: None declared.

ISQUA2023-ABS-2556

SETTING A1C GOALS INDIVIDUALIZED BY USING THE INTELLIGENT SYSTEM TO MANAGE BLOOD GLUCOSE AND PATIENT SAFETY

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Introduction: In the control of diabetes, we usually use A1C as an indicator, and international societies set this standard at less than 7%. Due to every diabetic patient's status and related comorbidities are different. If the same target value is given for hyperglycemic patients, patients will be performed unnecessary tests and increase anti-diabetes drugs for didn't reach the target during diagnosis and treatment. On the other hand, for elderly patients with more comorbidities, setting appropriate target values could be avoid the risk of hypoglycemia and reduce the complexity of treatment caused by polypharmacy to maintain patient safety.

Methods: Implemented in the form of SDM. Firstly, in the form of team meetings of different occupations to discuss the health education content suitable for patients. The theme is to understand about A1C and chronic complications of diabetes. In addition to paper tools, in the hospital information system, we have set up a QR code exclusive to individual patients. After diabetes health education, patients can scan the QR code to read the electronic version of the health education tool with a mobile phone or ipad at any time. This tool is designed in the form of images to make patients more interested. It is also easier to understand the content of health education. In addition, patients could also enter their current age, year of illness, diabetes treatment, self-care status, etc. on the platform and this system could evaluate the appropriate A1C control range immediately. Finally, after the diabetic educator discussed with patients to identified the current problem of blood sugar control, the patient will actively set the target value and time which expected to be reached. After the setting is completed, the data can be uploaded to the hospital's HIS system. When the patient uploads the target value to the HIS, there will have an icon to be displayed in the outpatient system, and the doctor can click on the icon to view the content uploaded after the patient's setting. We use this system to help patients which included inpatients and outpatients to achieve their target step by step.

Results: A total of 245 patients will be admitted from 2021. The target value set by the patient can be divided into two groups. One group is currently hyperglycemia, so the target value set is lower than the current value. There are a total of 207 patients, and the average A1C value is from 8.9% to 8.1% (−0.8%), and 182 patients (87.9%) reached the target; the

other group was older patients who had hypoglycemia. In order to avoid hypoglycemia again, a total of 38 patients, the preset target value is higher than the current A1C, the average A1C increased from 6.2% to 7.1% (+0.9%), 16 patients (42.1%) reached the preset target, and 9 of them reduced oral anti-diabetes drug dosage, 7 patients reduced their insulin dosage, and this group of patients did not recurrent hypoglycemia after follow-up.

There are 171 patients continued to set the target A1C for the next stage after reached, and the satisfaction of the admitted patients with this health education tool and process is 96.3%.

Conclusion: With the individualized patient care model and intelligent system, patient-centered care can be achieved. That will be strengthen the patient's compliance with the doctor's advice, and also promote the communication with each other. It is expected that in the future, the analysis of big data results can be used to create a care system more suitable for chronic patients.

Disclosure of interest: None declared.

Universal Health Coverage and Equity

ISQUA2023-ABS-2557

HOW CAN EMERGENCY DEPARTMENT CARE BE IMPROVED FOR OLDER ADULTS?

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Introduction: Older people present to Emergency Departments (ED) for a range of problems including a sudden catastrophic event, traumatic injuries, and for unmet needs relating to chronic, often comorbid, advanced chronic disease and/or advanced cancer, and frailty. In Australia, people aged over 85 years have the highest rate of presentation to ED (7692 per 10,000 population), and a much higher proportion of visits to the ED by this cohort result in hospital admission. In 2022, a collaboration was established comprising a district health service, university researchers and stakeholder representatives, to strengthen service performance, outcomes, and experience for this cohort. This presentation will deliver findings of a preliminary review of international literature, reporting interventions aimed at improving ED care for this cohort and their relationship to measures of system performance, patient outcomes, patient experience, or staff experience.

Methods: A comprehensive systematic electronic search of four databases: Elsevier Scopus, Ovid Embase, EBSCOhost CINAHL Complete and Ovid MEDLINE Complete, was conducted from inception to December 2022. Abstracts and full texts were double-screened. Data were extracted using a structured data extraction tool.

Results: Our search yielded 8,142 individual papers. After duplicate removal, reviewers worked in pairs to screen 6,076 abstracts and assess 77 full text papers for inclusion. Hermeneutic synthesis enabled organisation of intervention strategies into three intervention categories: (1) providing comprehensive care to improve system performance or to better meet the needs of the patient, to attenuate falls risk, or to build staff capacity (2) reducing polypharmacy and potentially inappropriate medications, (3) responding to acute deterioration.

Findings: Delivering comprehensive care in ED often extends length of stay which may not align with organisation imperatives for system performance. Targeted interventions for better medication management and response to acute deterioration to mitigate adverse outcomes were less complex and considered effective.

External Evaluation

ISQUA2023-ABS-2590

THAILAND ONLINE SURVEY LESSONS LEARNED FOR ACCREDITATION

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Introduction: Due to the spread of Coronavirus Disease 2019 (COVID-19) in the year 2020, the Healthcare Accreditation Institute or HAI was unable to schedule a survey visit between March and May of 2020. HAI adapted to use virtual surveys to promote continuity. HAI has resumed and shifted the accreditation process to the Online mode.

Virtual surveys are conducted remotely by the assigned HAI surveyors via online zoom meeting software.

Methods: HAI implemented the virtual survey to replace a regular survey by dividing it into four phases.

- Phase 1: the development of a virtual survey visits in four pilot hospitals in February 2021.
- Phase 2: Summary of the lessons learned from all four pilot hospitals was released. The guidance for planning visits and criteria for hospitals that will be selected for virtual survey was launched in May 2021.
- Phase 3: Implemented the combination of virtual survey and on-site visits as a hybrid survey.
- Phase 4: Developed a shorter survey format that is called Adjust Survey due to long run of COVID-19 situation.

Results: HAI will conduct all 649 hospital survey visits for each certification in 2022. There are 458 hospitals re-accredited by the HA. 346 hospitals out of 458 hospitals were surveyed electronically, or 75.55 percent.

Lesson learned: the process of appointment with a hospital facility, surveyors and HAI coordinators must be prepared before survey to ensure the process, equipment and electronic media. Now the reaccreditation assessment surveys are being conducted either as Virtual or Hybrid surveys. However, HAI decides to not use the online survey for first accreditation due to limited data of levels of development.

Most of thematic survey visits focus issue from online survey.

1. Risk management system

2. Nine essential standards for Safety
3. Caring for high-risk groups/patients
4. Continued of care
5. Hospital environment (ENV) such as wastewater treatment system, fire system, garbage and medical equipment, etc.
6. Performance results.

HAI has confirmed that our virtual survey procedure provides an accurate evaluation of risk and quality. Surveyors and hospitals rely mainly on Zoom or Microsoft team for building tours and communication. Utilizing easily accessible electronic records, email, file sharing, and screen sharing, surveyors have efficiently reviewed inspection, testing, and maintenance documents for hospital. Surveyors and hospitals feedback were survey to improve the quality of HA survey process.

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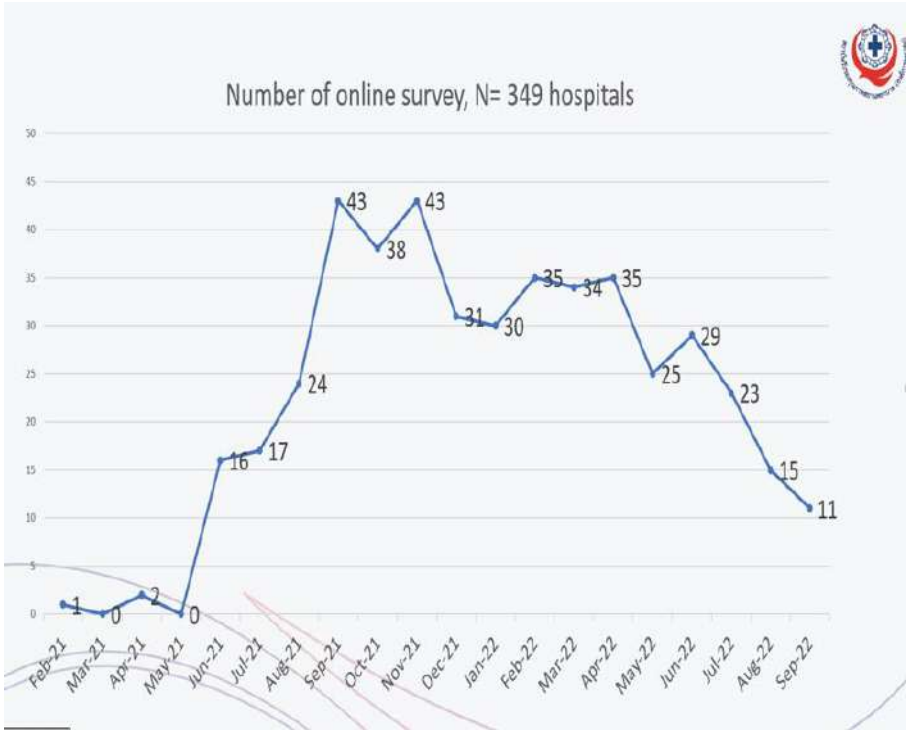

Conclusion: As early adopters of the online survey process, HAI anticipated some challenges but discovered that an effective and efficient survey experience could be achieved with careful planning. The remote survey allowed hospital to continue quality with minimal disturbance.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2618

MORTALITY AND INTERVENTION TYPES OF TRANSFERED ACUTE ISCHEMIC STROKE PATIENTS FROM 2017 TO 2021 IN SOUTH KOREA

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Introduction: In acute stroke patients, the time from onset to treatment is an important factor to improve the patient's health outcomes. It is important to receive intravenous tissue-type plasminogen activator (tPA) or endovascular recanalization therapy (ERT) rapidly for ischemic stroke patients. Efficient inter-hospital transfer means transferring to a hospital with the level of resources necessary for patient treatment without delay. This study aims to identify efficient inter-hospital transfer by analyzing the 30-day mortality according transfer and treatment patterns (tPA or ERT).

Methods: We retrospectively analyzed data of patients urgently who admitted to hospitals with acute ischemic stroke between 2017 and 2021, which were extracted from the National Health Insurance (NHI) claims data. The main outcomes were the frequency of inter-hospital transfer, the characteristics of treatment, and 30-day mortality. We performed logistic regression analysis to examine the association with 30-day mortality and treatment patterns of transfer.

Results: Out of 283,740 patients with acute ischemic stroke in Korea, 9.3% were transferred to other hospitals. The mortality rate of transferred patients (5.2%) was higher than non-transferred patients (4.6%), that was statistically significant ($p<0.0001$). After performing a logistic regression, the results of mortality according to the treatment patterns in transferred/non-transferred patients are as follows. Transferred patients had a higher 30-day mortality than non-transferred patients ([OR] 1.13, [95% CI] 1.05-1.21). This suggests that unnecessary inter-hospital transfers may increase mortality. Among transferred patients, the ORs of mortality in patients who performed ERT only after transfer ([OR] 3.77, [95% CI] 3.21-4.43) were higher than in patients who received ERT after use of tPA at the first medical institution ([OR] 3.5, [95% CI] 2.70-4.55). This suggests that securing time by performing tPA at the first-visit medical institution can improve clinical outcomes for patients who transferred for ERT.

Image:

Table 1. Logistic regression analysis on 30-day mortality according to inter-hospital transfer and treatment pattern

Treatment pattern		Total	Crude mortality		Adjusted*	
		No.	N	%	OR	95% CI
Non-transfer		257,386	11,739	4.6		
None		223,668	9,059	4.1	1.00	
tPA or ERT		33,718	2,680	7.9	2.34	(2.24 to 2.45) [a]
Tranfer		26,354	1,382	5.2		
First hospital	**Received hospital**					
tPA	ERT	631	67	10.6	3.50	(2.70 to 4.55) [a]
tPA or ERT	None	1,288	100	7.8	2.65	(2.15 to 3.27) [a]
None	tPA	974	88	9.0	2.79	(2.23 to 3.50) [a]
None	ERT	1,346	185	13.7	3.77	(3.21 to 4.43) [a]
None	None	22,115	942	4.3	1.13	(1.05 to 1.21) [a]

[a] Significant at $P < .05$

*Adjusted for sex, age, CCI score, past stroke/TIA history, residence.

Conclusion: The study identified that the mortality of transferred patients was higher than that of non-transferred patients without treatment, and the mortality was different depending on the detailed treatment pattern. In particular, we confirmed that patients who received ERT after being transferred without tPA treatment had the highest mortality. Even if patients had an indication of ERT, early transferring to a hospital where tPA treatment is available can reduce mortality. Therefore, it is necessary to consider establishing a stroke network so that patients can be transferred directly to the proper hospital for more effective inter-hospital transfer.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2644

TÜRKİYE HEALTH CARE QUALITY AND ACCREDITATION INSTITUTE REMOTE SURVEY PRACTICES

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Introduction: Before remote surveys began to be used in accreditation survey during Covid-19 pandemic, TÜSKA has carried out a series of activities for remote accreditation surveys such as scientific studies, eye tracking project and pilot applications since 2018. With COVID-19 pandemic in 2020, in order to ensure sustainability of accreditation process, TÜSKA has included remote survey applications in accreditation system and is used as an important method of accreditation programs. It is aimed to improve effectiveness of national and international accreditation surveys by using remote survey method. In addition, it is undoubtedly known to provide space, time and economic benefits. TÜSKA also continues Eye-tracking project within the scope of remote surveys applications. Eye-tracking system is based on a device to track movement of eyes to know exactly where person is looking and for how long. With completion and implementation of this project, it is expected that remote surveys will be moved to the next level.

Methods: In this study, evaluations are made about implementation of TÜSKA's remote accreditation surveys. The procedure, preliminary preparation, implementation and observed positive and negative aspects of remote survey is be discussed.

Results: TÜSKA carried out a series of legislative regulations and pilot studies on surveyor training prior to implementation of Remote Survey Practices. For realization of remote surveys, TÜSKA processes were reviewed and necessary legislative arrangements were made and TÜSKA remote survey procedure was prepared. A technical infrastructure has been used to enable remote controls - Remote Access Software (RAS), also known as Remote Desktop Software refers to any information technology (IT) toolkit used to access and control devices and data sources within the another local network by connecting from a remote location. In order to carry out TÜSKA accreditation activities remotely; trainings were organized for surveyors. Among the subjects of trainings; TÜSKA Remote Survey Procedure, technical training on remote survey environment and experiences of surveyors who participated in the pilot training are included. Currently, all interim surveys of TÜSKA are carried out remotely. It is planned to be carried out by 3 Surveyors for 3 Days within the scope of SAS Set. In the remote control procedure, the technical and expert infrastructure conditions of the health institution are specified. TÜSKA has a certain knowledge about remote survey and some advantages and disadvantages determined according to this

knowledge.

Image:

Conclusion: Determining features that need to be improved observed in the process will enable a more effective evaluation of standards and evaluation criteria within the scope of Health Accreditation Standards. In addition to development of technical equipment related to remote survey, it is thought that giving more theoretical and practical trainings to surveyors on remote surveys will further improve process. Further studies should be carried out and partnerships should be established in order to create a structure where organizations can present their own remote survey systems and standards, and where they can conduct surveys with systems developed for them, independent of common online platforms.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2662

THE EFFECT OF RFID TECHNOLOGY FROM INNOVATIVE TECHNOLOGIES ON PATIENT SAFETY IN THE OPERATING ROOM PROCESS

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Introduction: Today, while providing health services, it has become important to produce an efficient, quality and economical health service with concepts such as patient satisfaction, patient safety, cost. Benefiting from health technologies necessary for service production in health institutions adds value to the service provided. Information technologies are one of the most important resources that provide added value to health institutions. In particular, Radio Frequency Identification-RFID technology plays a major role in preventing mistakes that can be made in these areas and ensuring patient care standards, since ensuring that patients are in the right place at the right time and patient follow-up are of vital importance in terms of patient safety. The aim of this study is to emphasize the importance of RFID, one of the innovative technologies, in increasing patient safety.

Methods: In this study, the data of 2520 patients who were sent to the operating room from cardiovascular surgery and thoracic surgery using RFID technology during the operating room process of Ankara City Hospital Cardiovascular Hospital in January-November 2021 were examined.

Results: As a result of monitoring and examining the data, it has been found that the use of RFID technology in the operating room process is effective and efficient. According to the target times determined in Ankara City Hospital Cardiovascular Hospital, patients can be followed at every step from the clinic exit door to the operating room entrance door and including their delivery to the operating room, and it is seen that the right patient is treated in the right operating room, thereby increasing patient safety.

Conclusion: By using RFID technology, the patient's position is automatically updated and the need for human labor and data entry is completely eliminated, increasing efficiency. The data collected with this technology strengthens the system by creating a rich data network and plays an important role in detecting nonconformities. Real-time patient tracking system with RFID technology provides many benefits to the hospital, patients and employees. These; We can list these as reducing the waiting times of patients, ensuring the rapid and safe transition time of patients from the clinic to the surgery, ensuring that the relatives of

the patients receive information about the whereabouts of their patients coming out of the surgery, monitoring, control and safety of the patients with identification, increasing the surgical safety and increasing the quality and accreditation in health institutions.

Disclosure of interest: None declared.

ISQUA2023-ABS-2666

DETERMINING THE DRAWBACKS OF REMOTE SURVEY: TÜSKA EXPERIENCE

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Introduction: In recent years, the use of new survey methods in addition to on-site surveys has reshaped the concept of surveying. This study aims to detect the drawbacks experienced and likely to be experienced in remote accreditation surveys and to determine how Healthcare Accreditation Standards have been evaluated.

Methods: The data were collected during the remote annual surveys of 9 hospitals accredited by the Turkish Health Services Quality and Accreditation Institute (TÜSKA). The data of TÜSKA specialist accompanying the remote annual surveys of 5 accredited hospitals were collected from these 5 hospitals by on-site and remote observation. TÜSKA specialist did not take part in survey team meetings and evaluations during the survey. The data of the other 4 hospitals were obtained during the interviews with the hospital managers after the remote annual surveys were carried out.

Results: All the accreditation standards and assesment criteria were assessed in the survey. Drawbacks experienced or likely to be experienced in the survey process were evaluated within the scope of the institution being surveyed, survey team and the accreditation body, and they were grouped in terms of their contents.

Surveyed Institution Findings

The indifference of the workers to the survey, interviewee being guided by other employees, lack of information about remote survey, the inability to adequately convey the activities due to restricted communication, and the risky behaviours of the workers on site were determined as *Worker-Related and Workplace-Related Disruptions.* Poor connection and environmental factors that would adversely affect connection quality were associated with *Remote Connection Quality*. The failure to transfer the documents/records requested by the surveyor and the deficiency of information security in document sharing were evaluated as *Document Sharing Problems*. Numerical inadequacy of technical equipment, lack of control before survey, deficient infrastructure and insufficient planning to ensure the sustainability of survey equipment were determined as *Problems Regarding Technical Equipment.*

Survey Team Findings

Lack of remote surveying knowledge and inability of the survey team to adapt to the technology used was considered as the *Capability to Conduct Remote Survey*. Problems related to remote-connection technical equipment, surveyor's connection infrastructure and lack of pre-survey connection checks were evaluated as *Remote Connection Quality*. In the test connection made with the institution before the survey, the differences specific to remote surveying were missed out, the on-site visits were not planned properly, communication of the survey team with each other and with the workers was restricted, which was assessed as the *Ineffective Management of the Survey*.

Accreditation Body Findings

The lack of activities to increase the remote survey competence and capacity of the surveyors, the survey process not having been designed to include the differences in remote survey, deficiency of a clear strategy regarding the regulations expected from the institution and the surveyors in remote surveying were considered as the *Inadequacy of the Regulations Specific to Remote Survey*.

Conclusion: The remote survey method, which has recently been used widely, has positive aspects as well as negative aspects that can adversely affect the process. Determining the drawbacks experienced and likely to be experienced in the process and making improvements regarding the drawbacks will enable a more effective assesment of the standards and assesment criteria within the scope of Healthcare Accreditation Standards.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2671

ENHANCING LEADERSHIP QUALITY IN MID-LEVEL HEALTH CARE PROVIDERS SERVING AT PRIMARY HEALTH CARE FACILITIES IN INDIA

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Introduction: The Govt. of India envisaged strengthening Primary Healthcare by establishing Health and Wellness Centres (HWCs). However, the availability of adequately skilled service providers was a challenge. Therefore, it was proposed to post Mid-Level Healthcare Providers (MLHPs)- Community Health Officers (CHOs), to provide preventive, promotive and curative care and serve as a leader to the primary healthcare team at HWCs. However, there was a felt need to build their capacities on soft skills like management, communication, leadership, conflict resolution, etc. To bridge this skill gap and capacitate CHOs to function as leaders of the primary healthcare team, NISHTHA/JHPIEGO in collaboration with IIHMR University, Jaipur developed the CHO Leadership Certification Program.

Methods: The program is designed to capacitate CHOs for effective management of HWCs to deliver quality comprehensive primary health care services by training them in the below-mentioned seven core modules.

- Primary Healthcare and Universal Health Coverage
- Sustainable Development Goals
- Public Health Planning and Management
- Organizing and Task Management
- Management and Leadership Skills
- Soft Skills for Leaders and Managers
- Effective Mentoring
- Knowledge of Management Action.

The course is delivered through virtual sessions along with self-learning. The total duration of the program is 80 hours spread over 10 weeks. The 80 hours of learning comprises of 40 hours of virtual facilitated sessions, 20 hours of self-learning, and 20 hours of self-assessment.

Results: The leadership certification program was conceptualised and developed on the basis of a felt-need of program managers and CHOs to develop the competencies and close

the skill gaps for CHOs. A mixed-method study was conducted by JHPIEGO in order to assess the needs.

The module was developed based on deliberations and findings from the needs assessment study with program experts by JHPIEGO's USAID-funded health system strengthening project-NISHTHA and IIHMR.

So far, 837 CHOs from 14 states of India have enrolled for the course in eight different cohorts. As on date, 616 CHOs have completed the course. None of these CHOs could score more than 50% of the total marks in the pre-test. However, in the post-test, 80% of the 616 CHOs scored more than 50% to meet the certification criteria of the course.

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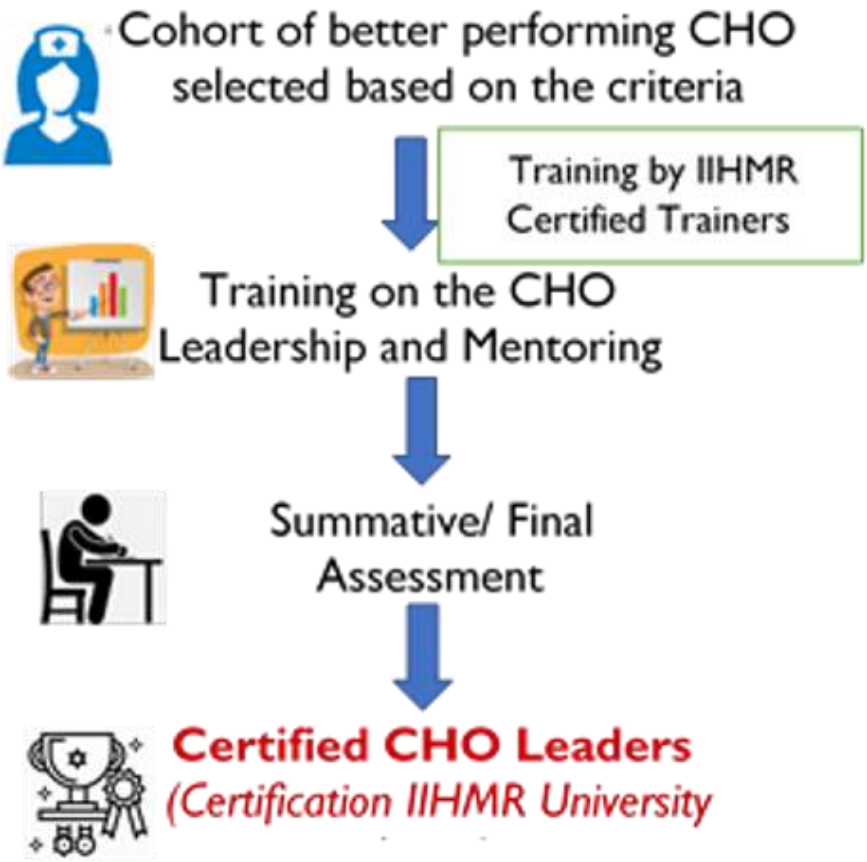

Conclusion: Strengthening primary health care is essential to achieving Universal Health Coverage. To address this challenge to deliver primary care, many nations across the globe have resorted to expanding the pool of health workforce by introducing a new cadre of MLHPs. Globally, the cadre of MLHPs not only ensures the provision of basic health services but they are also envisaged to play a managerial role in primary care settings. However, evidence suggests that this new cadre of MLHPs often face challenges in performing their roles as managers and/or leaders.

This certification program is expected to enhance the competencies of Mid-Level

healthcare providers to serve as public health managers at HWCs, and mentor the new CHOs. This, not only will improve the performance of the HWC team but also lead to delivering quality primary healthcare efficiently.

Disclosure of interest: None declared.

ISQUA2023-ABS-2678

TUMOUR BOARDS AND THEIR QUALITY OF PROCESSES, STRUCTURES AND OUTCOME: A SYSTEMATIC REVIEW OF THE LITERATURE

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Introduction: In many healthcare systems, multidisciplinary teams (MDTs) are critical in cancer care. MDTs give treatment recommendations based on the current medical knowledge of therapies and drugs. However, they claim a high range of financial, human and time resources, while the effectiveness of MTDs and their benefit for patients are still insufficiently scientifically evaluated. We conducted a Systematic Review of the literature summarising the available evidence on the effectiveness of tumour boards. We aimed to analyse the structures and processes of MDTs, what factors are crucial to running a high-quality one, and their impact on patient outcomes.

Methods: We systematically reviewed the literature in the Cochrane, CRD, Embase and Medline databases. Only studies published between 2011 and April 2021 concerning MDTs in clinical settings were considered. PICO elements (Population, Intervention, Comparison, Outcome) were used as parameters to set up inclusion and exclusion criteria. The selection of articles followed the criteria defined in the PRISMA Statement. Two researchers independently controlled and evaluated 303 full-text articles out of 944 abstracts through the RAYYAN tool. During the review process, PICO exclusion criteria were iteratively adapted and specified. Data from sixty-one selected studies were extracted. The relevant information was categorised in a table for each included article and classified according to the author, study design, method, objective and conclusion categories.

Results: Twenty-two articles focused on the structures and processes that determine MDTs' quality. We identified the characteristics of an effective MDT and facilitators and barriers influencing teamwork and decision-making. Factors like organisation, quality and availability of patient information, leadership, team and meeting management, and workload/time pressure can affect the quality of a meeting. Nineteen articles reviewed how to assess the quality of MDTs – including observational tools and self-assessments. Sixteen articles focused on the benefit of MDTs and their impact on patient outcomes. Tumour boards might affect treatment quality and influence patients' quality of life, but no association was found with a higher survival rate. Moreover, findings suggest that patients with severe cancer presented more than twice have a higher benefit from MDTs than patients

presented once. Four studies addressed the increasingly scarce financial resources and the economic value of tumour boards. These factors, strongly influenced by economics, will become more important in the future and require ethical considerations with rationalisation, allocation of resources and possible rationing of medical services in cancer treatment, which must be prevented.

Conclusion: The Systematic Review showed that studies analysing the effectiveness of tumour boards published between 2011 and 2021 focused on decision-making, self-assessment instruments and quality and patient-centred treatment. In this context, research focused on the characteristics of an effective MDT and factors influencing teamwork in cancer care. There is evidence of positive effects on patient management in several dimensions, which should encourage the development of multidisciplinary care based on scientific evidence from team research. This can significantly support clinical care and quality development through targeted and effective tools. Nevertheless, further research is needed to systematically evaluate the quality of multidisciplinary cancer meetings and their benefits for each patient throughout the patient journey.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2683

RESULTS OF A SELF-ASSESSMENT TOOL IN MULTIDISCIPLINARY CANCER TEAM MEETINGS AT A UNIVERSITY HOSPITAL: POTENTIALS FOR QUALITY IMPROVEMENT

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Introduction: In cancer research quality development in multidisciplinary team meetings (MDT or "tumour board") play a crucial role in cancer treatment. MDTs meetings should improve communication and decision-making between healthcare professionals using a high range of financial, human and time resources. Although there is much information about multidisciplinary teamwork, evidence for their quality is still missing. In this study, the results of a developed self-assessment tool for tumour boards and assessment of structures and processes to identify the potential for quality improvement in MDT meetings are reported.

Methods: A mixed-methods approach, including a systematic review of the literature and interviews with expert MDT members, was used to develop the Austrian Tumour Board Inventory from October 2020 to date. One hundred sixty-one health professionals completed the online survey (response rate of 81%). The data obtained were transferred to SPSS. We used descriptive statistics to assess our dimensions (comparison of mean scores) between and within tumour boards. Psychometric evaluations are currently carried out, including exploratory factor analysis and confirmatory factor analysis. The online survey was conducted on nine MDTs in an academic hospital in Austria. We used the Likert scale to assess the structures and processes within the boards and an open question for improvement strategies after each question. Our survey includes nine dimensions relating to MDTs in Austria: (1) structures and guidelines, (2) role at the MDT, (3) organisation, (4) quality of presented information, (5) patient information, (6) clinical decision-making process (7) teamwork and culture (8) attendance (9) documentation. Analysis was theoretically grounded in a quality assessment framework for implementation strategies and outcomes.

Results: Findings from quantitative questions suggest a mainly neutral mean score in dimensions of attendance, quality of presented information and team culture throughout the sample. Mean values can be compared between different tumour boards to show the strengths and potential for improvement of the processes, structures and results. Findings from open questions show that health professionals have many sound approaches for

improvement (e.g. less time pressure, accurate documentation and improving the quality of patient information).

Conclusion: We revealed the critical function of MDTs in cancer care regarding different healthcare factors, i.e., encouraging patient-centred care, attendance of main disciplines or quality of multidisciplinary decision-making and their impact on cancer treatment. Our survey shows the status quo of individual MDTs and indicates possibilities for improvement in structures, processes and outcomes. Although participants are open to improvement, there are organisational challenges and shortages they must face in everyday work, which make it hard to implement efficiently. Relevant outcome parameters are integrated into the analysis in-depth, examining the work within multidisciplinary teams quantitatively and qualitatively by implementing the developed self-assessment tool to enable continuous improvement of MDTs. Further research is needed to develop a standardised self-assessment tool for tumour boards, while the tool can also be applied in other countries and contexts.

Disclosure of interest: None declared.

ISQUA2023-ABS-2688

REDUCE UNEXPECTED CARDIAC ARREST EVENTS IN THE HOSPITAL AND IMPROVE PATIENT SURVIVAL

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Introduction: Cardiac arrest is an important indicator of patient safety and quality. Once cardiac arrest occurs, it will bring fatal injuries to patients. How to prevent the occurrence of unexpected cardiac arrest events in the hospital (IHCA), to improving patient outcomes and survival is an important task for hospitals and a challenge for healthcare teams. The primary focus of cardiac arrest incidents is early identification and prevention. The literature indicates that about 60-70% of hospitalized patients will have abnormal vital signs 6-8 hours before cardiac arrest, but only 25 percent were detected by the care team. More studies have pointed out that these processes can be detected early through some indicators. Patient signs can predict that the patient's condition is deteriorating through a clinical warning system.

Methods: Statistics show that from January to December 2019, there were 96 cases of unexpected cardiac arrest in a medical center in northern Taiwan. Through the analysis of the cause of the event, the following improvement strategies were formulated.

1. Establish clinical alarm system (CAS)
   Through event analysis, it was found that about 72% of patients had abnormal vital signs within 24 hours before the event. Using the National Early Warning Score, according to the patient's BP, BT, HR, RR, O2, and SpO2 at that time, the score of the above six items is calculated every 4 hours. When the score ≧ 5 points, in the Hospital Information System (HIS), Nursing Information System (NIS), Integrated Management Information (iMMIS) patient data presents a black exclamation point icon on a yellow background. And optimize the existing handover system, so that the duty staff can grasp the medical conditions of the whole patients and deal with them in a timely manner.
2. Set up CAS score ≧ 5 points disposal and reply
   When the CAS score ≧ 5 points, a warning icon appears on the list of patients in HIS, NIS, and iMMIS, indicating that the patient's condition has changed, and the doctor is asked to dispose of the patient and reply to the treatment status. When the reply is restored, the black exclamation point icon on a yellow background changes to a black exclamation point on a gray background, and the CAS alert disappears when

the CAS score < 5 points.

Results: After the intervention prompted by the clinical warning system, and when the patient's CAS score ≧ 5 points, the medical team immediately disposed of it. “Mortality from IHCA events” decreased from 69% to 63% ($p<0.05$), and “the proportion of patients with unexpectedly occurring IHCA who survived and discharged from hospital” increased from 30% to 34% ($p<0.05$), In addition, the quality of first aid projects has also been improved. “The proportion of cardiac arrest to chest compression time ≦1 minute” increased from 95% to 99% ($p<0.01$). “The proportion of VT and VF to defibrillation time≦3 minutes” increased from 91% to 100% ($p<0.01$). “The time for administering vasopressor ≦5 minutes” increased from 81% to 90% ($p<0.05$). “The proportion of patients with cardiac arrest who return of spontaneous circulation (ROSC)” increased from 66% to 68% ($p<0.05$).

Conclusion: Screening patients in high-risk groups through information systems. Provide appropriate clinical early warning to help the care team accurately understand the patient’s condition, achieve early detection, early intervention to improve the patient's condition. Through the improvement of the number of unexpected cardiac arrest events in the hospital, the number of deaths due to emergency treatment has also been reduced, and the proportion of patients who survive and discharge after emergency has been increased.

Disclosure of interest: None declared.

ISQUA2023-ABS-2710

PERCEPTIONS AND ATTITUDES OF HEALTH PROFESSIONALS TO USE AUGMENTED REALITY TECHNOLOGIES IN TRAINING

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Introduction: The importance of innovative technologies, which contribute greatly to the improvement and development of education, service delivery and care processes of health professionals, which are the basic building blocks of health services, is increasing day by day. Augmented Reality (AR) technology increases the effectiveness and efficiency of learning processes by making learning attractive, increasing its permanence, making abstract concepts concrete, facilitating the learning of dangerous and difficult applications to observe, and many practical opportunities. *Aim:* With this research, it was tried to determine the perceptions and attitudes of healthcare professionals about using AR technologies in applied training processes during the COVID-19 pandemic period, and it was aimed to provide an advantage in creating a safe working climate in order to provide a quality healthcare service in line with the recommendations to be made.

Methods: The study was carried out with 182 health workers (physicians and nurses) working in a public hospital. The "Technology Acceptance Model (TKM) Questionnaire" developed by Kaenchan, P. (2018) was used to measure the perceptions and attitudes of healthcare professionals about using AR Technologies. The analysis of the data was made using the IBM SPSS 25.0 statistical package program.

Results: It has been observed that following the technology applications of health professionals, being aware of AR technology applications and receiving training on innovative technologies positively affect their perceptions and attitudes towards using AR technology applications. In addition, it was not observed that there was a significant relationship between age, gender, education level, unit of work and positive attitude towards AR technology. In general, it has been observed that the employees' perception and attitude levels about using AR technology are high.

Conclusion: With the rapid development and popularity of AR, its innovative ways are expected to transform not only health education and training, but also applications in treatments and therapies (e.g. surgery), telemonitoring, care planning and other fields. Specifically, it is stated that such modern technologies may also affect the effective delivery of education and training for patient care, safety and awareness in the future. On the other

hand, more scientific and meticulously designed studies are needed to confirm the effectiveness and benefits of AR in health systems education. In particular, the attitudes of immersive virtual learning require further research, with the potential to improve empathy, sensitivity, and especially knowledge.

Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2718

AN ANALYSIS OF JOINT COMMISSION INTERNATIONAL ACCREDITATION SURVEY METHODS COMPARED TO SURVEY FINDINGS: ENSURING EQUIVALENCY AMONG METHODS

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Introduction: Joint Commission International (JCI) is the leading accrediting body for international health care organizations. JCI surveyors visit or "survey" organizations initially and every 36 months to evaluate standards compliance. Traditionally, these initial and triennial surveys have been conducted in-person, on-site.

With the pandemic, JCI had to pivot to remote surveys. Today, JCI has resumed on-site surveys but continues to conduct remote and hybrid (i.e., part on-site, part remote) surveys for special circumstances. JCI needed to understand if and how the results of remote and hybrid surveys differ from on-site. JCI analyzed its compliance data amongst the three methods for initial and triennial surveys to determine if the results were equivalent. The goal is to ensure no variation in survey findings across survey methods.

As onsite business begins to normalize, JCIA will present future implications and opportunities for continued remote work.

Methods: Reviewed 2021 hospital accreditation program results. We separated initial versus triennial surveys and adjusted for length of the survey (days). We used the Kruskal-Wallis Test to compare compliance findings as well as JCI's SAFER Matrix™ composite by survey method. We used the Chi-square Test to compare by survey method where accreditation standards (by chapter) were placed on the SAFER Matrix--that is, the risk assessed for each finding.

JCI has preliminary survey findings data for 2022. A full report will be included in the Methods for this abstract once analysis is complete. This will allow for analysis of two full years of data.

Results: 2021 Hospital Survey Data.

For initial and triennial surveys, there was no statistically significant difference in the number of findings across the three types of survey methods.

For initial and triennial surveys, there was no statistically significant difference in SAFER

Matrix composite scores across the three types of survey methods.

For initial surveys, there was a statistically significant difference ($x^2 = 37.38$, p=0.04) in the standards (by chapter) placement on the SAFER Matrix across the three types of survey methods. This suggests that chapter placement is influenced on survey method in initial surveys (i.e., distributions among the survey methods are different).

For triennial surveys, there was a statistically significant difference ($x^2 = 66.72$, p<.0001) in the standards (by chapter) placement on the SAFER Matrix across the three types of survey methods. This suggests that chapter placement is influenced on survey method in triennial surveys (i.e., distributions among the survey methods are different).

Conclusion: By analyzing the relationship between survey methods and findings, we can determine if equivalency of survey results is met. The number of findings and SAFER Matrix placement were not statistically impacted by the survey method. However, differences were detected in the aggregate distribution of chapter placement. Additional analysis is being performed on 2022 data to detect if meaningful differences exist. Further exploration is needed to understand the possible reasons for these differences (for example, type of surveyor on-site, type of facility).

Conducting thorough and equitable remote and hybrid surveys enables JCI to provide external evaluations in geographic areas where travel is not safe or possible. It also allows JCI to be more continuously in touch with its accredited organizations without travel expenses.

An additional benefit to analyzing survey method data is that JCI can adjust its methods or surveyor training as necessary.

Disclosure of interest: None declared.

ISQUA2023-ABS-2722

MEDICAL ERRORS AND ERROR-RELATED ADVERSE EVENTS IN PEDIATRIC INPATIENTS IN JAPAN: THE JET STUDY

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Introduction: The recent report extrapolated from several studies that medical error could be the third leading cause of death in the United States (Makery, *BMJ*. 2016) though huge efforts in improving patient safety worldwide. Children differ from adults in many ways; however, such epidemiology in pediatrics especially outside the Western countries is scarce. Thus, we investigated the incidence and characteristics of medical errors and error-related adverse events (AEs) in pediatric inpatients in Japan.

Methods: Japan adverse EvenTs (JET) study was a multicenter cohort study to investigate the epidemiology of AEs and medical errors in Japan and this study scrutinized the data from pediatric inpatients settings. The study wards consisted of 18 medical and surgical wards and 7 intensive care units at 2 tertiary care hospitals including a children's hospital. We randomly selected 60% of inpatients at study wards during 2 months' study period and included them in this study. The primary outcome of this study was medical errors and error-related AEs. A medical error is defined as failure of a planned action to be completed as intended or use of a wrong plan to achieve an aim (Institute of Medicine. 2000. *To Error is Human*) as well as omission (Institute of Medicine. 2004. *Patient Safety*). AEs due to medical errors are considered preventable AEs. Medical cares were categorized into 7 categories: drug, operation, invasive/non-invasive procedure, judgement, nursing, rehabilitation, and management. The research nurses trained by the validated methodology (Morimoto, *Qual Saf Health Care*. 2004) collected potential events and the characteristics of all patients in the cohort by reviewing all medical charts along with laboratories, incident reports, and prescription queries at each study site. Physician reviewers independently evaluated and finalized these potential events and the detailed classifications of events such as severity, the category of medical care, and the error stages.

Results: We enrolled 1126 patients with 12624 patient-days (PD). Among all admission, 433 patients (38.5%) involved at least one medical errors during hospitalization. Patients with errors were more likely to be younger (median age was 2 years old (IQR 0-7)) and more hospitalized at intensive care units (ICUs) such as neonatal ICUs, pediatric ICUs, and high care units (19%; 82/433) compared with those without errors (median age was 3 (IQR 1-8),

P=0.04. 9.8% (68/693) at any ICUs, P<0.0001). The ratio of boys to girls was similar (56% vs. 57%). We identified 865 errors with the incidence of 69 per 1000 PD [95% CI 64.0-73.1] and 218 of them caused actual harm; 25% of errors resulted in preventable AEs. By age category, the incidences of errors and preventable AEs were highest in infants (78 errors and 21 preventable AEs per 1000 PD) and preschoolers (82 errors and 20 preventable AEs per 1000 PD). Drug was the most commonly related to errors (372/865, 43%), followed by nursing (22%), operation (18%), procedures (9%), management 7%), and judgement (1.5%) while the proportion of preventable AEs to errors was the lowest in drugs (8.3%) and the highest (7/13, 54%) in medical judgement. Of all preventable AEs, 17 (8%) were classified as life-threatening, and preventable AEs related to procedure or judgement resulted in life-threatening AEs at a higher rate (25% and 43%, respectively).

Conclusion: We found medical errors were common and one in four caused actual harm in Japanese pediatric inpatients. Drug-related errors were the most frequent while judgement-related errors resulted in preventable AEs the most.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2726

A PIONEER LOCALLY BUILT INTEGRATED CARE PATHWAY IMPROVES CARE FOR PATIENTS WITH ISCHEMIC HEART DISEASE IN AN ARMENIAN PRIMARY HEALTH CARE CLINIC

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Introduction: Ischemic heart disease is the leading cause of mortality in Armenia. Quality care at the Primary Health Care (PHC) level for this and other cardiovascular conditions is of the utmost importance for the health of the Armenian population. At the same time, a recent survey showed that quality improvement initiatives are still scarce in the healthcare system. Integrated care pathways (ICPs) are quality planning tools that define the sequence of actions and responsibilities, both clinical and organizational, to deliver the best quality care in a given context. ICPs were never implemented in Armenia until this pioneering experience in a PHC clinic, that we are presenting. The project was supported by the Asian Development Bank (ADB).

Objectives: To pilot the feasibility and effectiveness of an ICP for ischemic heart disease in the Armenian PHC context.

Methods: Cardiomed clinic accepted voluntarily to pioneer the building and implementation of the ICP. The clinic´s director and his staff formed a working group that engaged in developing the ICP with the help of ADB external consultants and the guidance of the Ministry of Health. Neither the clinic nor the staff received any economic incentive. We followed a structured step-by-step methodology to plan care that translates best practices into the clinic´s routine work. The ICP operational documents (time-matrix, variations sheet, survey instrument for patients, eleven indicators for monitoring implementation and compliance with the ICP) were developed after twenty-three iterative meetings, mainly virtual, 30 to 60 minutes long. A baseline measurement of the indicators was conducted, the ICP was piloted for six months, and a second evaluation was performed to assess changes.

Results: Thirteen new ICP patients were attended during the pilot and were followed during six visits (as established by the ICP). All the indicators improved compared to the baseline.

Eight of them reached 100% compliance. Salient examples are the % of patients with risk assessment (improved from 0 to 70), % receiving personalized lifestyle counseling (from 0 to 100), and, most of all, % of patients stabilized after one month under treatment (from 6 to 100). All patients rated their experience 10 (0-10 scale). After the pilot, some modifications were introduced in the ICP to facilitate compliance with the three indicators that did not reach 100%. Due to the pilot, the clinic has improved some organizational issues, like setting an appointment system that eliminates queues and implementing shared medical appointments. We are also testing new ideas for prevention and healthy lifestyle for other types of patients.

Conclusion: ICP proved to be a feasible and effective quality planning tool, translating best practices into routine work in the Armenian context and improving quality of care. We hope that this pioneer experience in the country, and probably in the region, could show the way to other facilities in their commitment to improving quality.

Disclosure of interest: None declared.

ISQUA2023-ABS-2731

ENHANCING CLIENT SAFETY BY HEIGHTENING SURVEILLANCE OF NOTIFIABLE ADVERSE EVENTS IN THE VOLUNTARY MEDICAL MALE CIRCUMCISION PROGRAM IN ZAMBIA

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Introduction: Voluntary Medical Male Circumcision (VMMC) has been shown to be effective in reducing the acquisition of HIV by 60% (UNAIDS, 2007). Zambia began scaling up VMMC for HIV prevention in 2009. Since the program's inception, more than 4 million males have been circumcised. Male Circumcision (MC) Prevalence in Zambia according to ZDHS, 2018 was at 32% and only increased to 34.1% in 2021 (ZAMPHIA 2021). There has been greater acceptability of VMMC by the Ministry of Health (MoH) with the inclusion of MC indicators into the Health Management Information System (HMIS) to track progress and inform decisions. However, adverse events (AE) indicators capture only classification according to severity (moderate or severe) and not according to type. The HMIS reports are generated at the end of the month. Hence, this raises the question; what types of severe AEs occur in the VMMC program in Zambia? How much time does it take for the providers to manage the AE?. This abstract highlights the significance of a real-time surveillance system of AEs for client safety.

Methods: In order to collect real-time data, on the time of occurrence and type of adverse event, MoH developed an adverse event tracker. The tracker has two modes of access; the android mode which supports the offline platform in case of poor network and the Live/online mode via the web interface for areas with stable internet. Providers have been trained on how to report using the tracker. At provincial and national levels AE task force teams have been formed to respond to emergencies. System-generated notifications pop up as e-mails and text messages. Using the AE tracker the reports are summarized.

Results: In 2021 when the tracker was launched 1,600 adverse events were reported in the tracker, representing a 0.03% AE rate, of which 24 were severe and classified as bleeding and infection (MoH VMMC AE Tracker 2021). Provincial teams were alerted in real-time and managed to resolve the AEs. The national task force team followed up to ensure safety and

adherence to quality standards.

Conclusion: The adverse events surveillance system has improved the management of notifiable AEs in the VMMC program. An orientation package on the management of AEs has been developed to equip providers with knowledge and skills. This has been a game changer to enhance client safety in the program.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2735

UTILISING DIGITAL CARE TO IMPROVE THE QUALITY OF CARE FOR CHILDREN BORN PRETERM, WHAT DO PARENTS SAY?

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Introduction: Children born preterm (<37 weeks' gestation) may be at risk of compromised neurodevelopment, which may impact their educational attainment and economic potential in adulthood. Neurodevelopmental assessments (NDAs) are required to identify those children who may benefit most from early interventions to improve outcomes. Where barriers to traditional in-person assessments exist, for example, during the Covid-19 pandemic, alternative approaches, such as virtual and remote testing, may be useful.

Parents are important stakeholders in the care of children born preterm. As virtual NDAs of children born preterm are relatively new, and data on parents' satisfaction with the methodology are limited, it is important to obtain feedback from parents to ascertain their satisfaction with virtual assessments and solicit their views on improving the process.

Methods: Children were offered NDAs in the form of play-based activities in their homes and virtual vision assessments (VA) while an assessor observed and scored the child's neurodevelopment remotely.

Parents' satisfaction with the virtual NDAs and VA was ascertained through a structured questionnaire to obtain quantitative ratings. A free text option was included in the survey for qualitative responses.

The survey was carried out on *Qualtrics.* Responses were anonymised, so parents' responses were not linked to their child's NDA results. The qualitative themes were analysed through a thematic content analysis [1] using *NVivo* software. Descriptive statistics were generated from the quantitative responses using *IBM SPSS Statistics Version 28.0.0.0*.

Ethics: The South Central – Hampshire B Research Ethics Committee approved the NDA study (REC: 19/SC/0474). A minor amendment to incorporate the virtual NDA during the pandemic was approved by University of Oxford's Clinical Trials & Research Governance Unit (PID14212-A002-SP001-AC001).

Results: Forty-nine parents of the 110 children who were assessed rated their satisfaction with the virtual assessments. Overall satisfaction with the virtual NDAs and VA was 74%. A breakdown of the level of satisfaction is presented in Figure 1.

Qualitative responses are presented as key and sub-themes in Table 1.

1. Home/virtual assessments
1A. Pros
i. Better communication
ii. Familiarity with the home environment
iii. Better alternative to nothing/where barriers exist
iv. Saves travelling time
v. Parent involvement
1B. Cons
i. Challenging
ii. Expectations on parents
iii. Home distractions
iv. Technology
v. Getting a child's attention
2. Face-to-face assessments
i. Preference for a face-to-face assessment
ii. Better communication
iii. Reassuring and more professional
iv. Easier
v. Better option for children
3. Virtual vision assessments
i. Children's attention span and cooperation
ii. Technology
iii. Not suitable for children with language problems

Image:

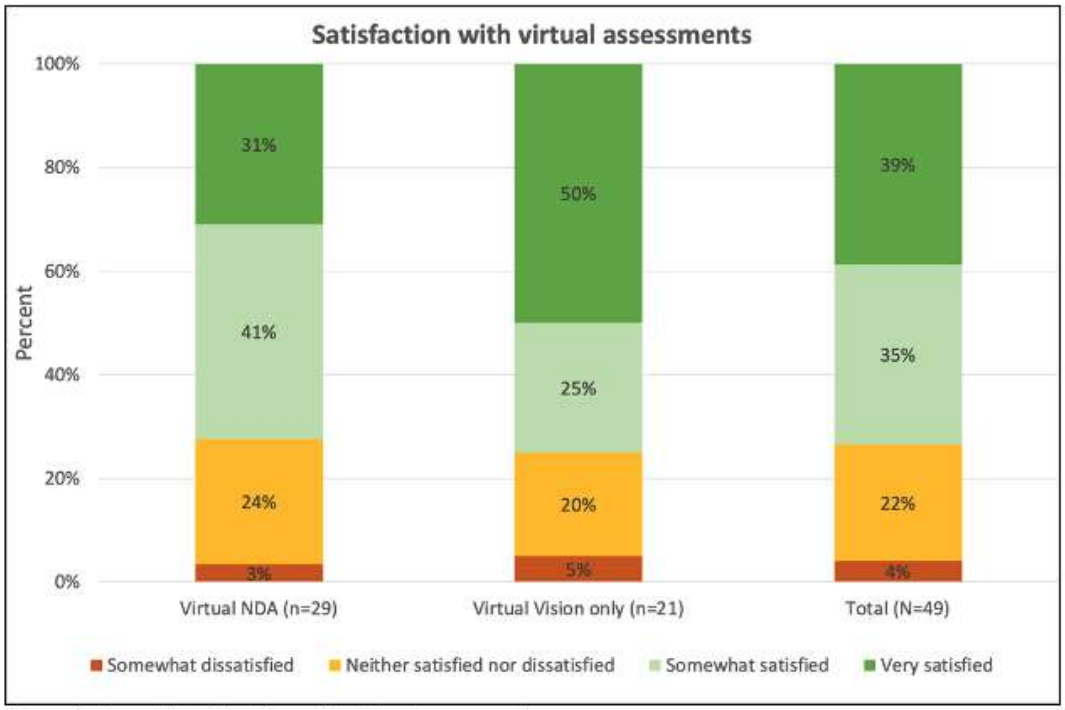

Figure 1: Parents' satisfaction with virtual assessments

Conclusion: Parents' feedback on the virtual assessments demonstrates a high level of satisfaction with the digital approach to improving care for preterm children.

Parents have highlighted the benefits and disadvantages of virtual assessments and opportunities to enhance remote testing for young children.

These findings are relevant for paediatric and clinical care as providers seek continuously to improve the quality of care they offer. As digital health expands, our learnings should inform future studies.

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ISQUA2023-ABS-2736

ELECTRONIC RESOURCES TO ADDRESS NEEDS OF PEOPLE WITH RARE DISEASES

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Introduction: Rare diseases are defined as having an incidence of less than 1:2,000 births. While there are thought to be around 7,000 individual rare diseases, many health professionals may only see one case of a particular rare disease in their whole career. This leads to a number of unique issues for people with rare diseases. This study looked at these needs, and electronic resources that sought to meet this need.

Methods: We conducted two reviews. The first was a scoping review of Medline, Embase and PsycInfo, supplemented by hand searches of selected journals. We searched for articles using terms for rare disease, electronic modalities (eg, mobile phone, telehealth) and patient support terms. From this we extracted key patient needs that resources were addressing by examining the reasons that authors gave for developing the technologies. The second search was of the two biggest mobile phone app stores, iOS Apple Store and Google Play. Since “rare disease” in this context returned very few apps, we searched for a list of ten named rare diseases: including cystic fibrosis, haemophilia, primary biliary cholangitis, Fabry disease, and spinal muscular atrophy. We assessed the quality of each app in terms of function, ease of use, and quality of content.

Results: The searches found 72 articles and 29 apps (screened for relevance from 383 papers and 2272 apps respectively). The articles described 56 different electronic resources in five broad categories: apps, social networking platforms, telehealth and virtual care platforms, websites with interactive content, and websites with just information. Most common rare diseases addressed were cystic fibrosis and haemophilia. Needs identified were support for self- management, access to high-quality information, access to appropriate specialist services, and social support. Apps we found had been developed to meet those needs. Quality scores were mostly high for accuracy of information but low for engagement (lack of interactive features, interesting design).

Conclusion: We concluded that while people with common conditions (e.g., breast cancer or

heart disease) may have similar levels of distress and similarly onerous self-management routines, people with rare diseases have additional needs: the lengthy odyssey to find a diagnosis, then identify appropriate specialists, the lack of evidence around effective treatments, guidelines or access to knowledgeable general health service providers. Electronic resources can meet many of these needs. We recommend the use of a web designer to make sure apps are engaging and of high quality, and are co-designed with people with lived experience. Otherwise, high quality care to patients who are most in need of it will not be provided in a sustainable, patient-centred way.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2741

SUCCESSFUL EXPANSION OF NO-FAULT COMPENSATION SYSTEM FOR CEREBRAL PALSY: A SYSTEM FOR MATERNAL AND NEONATAL SAFETY

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Introduction: Japan Council for Quality Healthcare (JQ) has been running the Japan Obstetric Compensation System for Cerebral Palsy (JOCS-CP) since 2009 in which it provides compensation on "no-fault" basis. It was once expanded to cover more CPs in 2015 through the scientific argument that care for neonate progressed to save neurological outcome. As healthcare for neonate in problematic delivery further improved, JQ again made a decision of expanding the eligibility for profound CPs.

Methods: The JOCS-CP is managed under variety of committees' supervisions such committees as steering, case review, investigation, appeal and prevention. However, healthcare insurer, one of the stakeholder, was not included. JQ launched a new committee including the insurer association for overhauling and expanding the system. In the first round of the Overhaul Committee, contentious points are agreed. They are as follows. i) Eligibility including exclusion standard, ii) Valid term for application after birth, iii) Scale of monetary compensation, iv) Insurance premium, v) Strategy to spend surplus, vi) Administrative cost and so on. Review of compensation, investigation, prevention, conflict mitigation and quality improvement in perinatal care are highlighted by the committee members as prerequisite for discussing the contentious points.

Results: Results of argument on the contentious points are described as follows.

i) ***Eligibility including exclusion standard***
The eligibility is expanded in such a way that general criteria covers case-by-case review criteria because clinical outlook of CPs approved by those criteria are proved to be often similar. Exclusion criteria is maintained to eliminate congenital reasons that causes symptoms similar to those of CP.

ii) ***Valid term for application after birth***
The term, i.e. from six month to five years old, is maintained because diagnosis of cerebral palsy is more difficult in neonates and babies at earlier dates after birth.

iii) ***Amout of monetary compensation***
The compensation amount is maintained as much as 240,000 USD.

iv) ***Insurance premium***

The price of insurance premium is closely linked to the surplus as described in v). It is reduced from 192 USD (128 USD from the surplus included) to 176 USD (96 USD from the surplus included) per live birth.

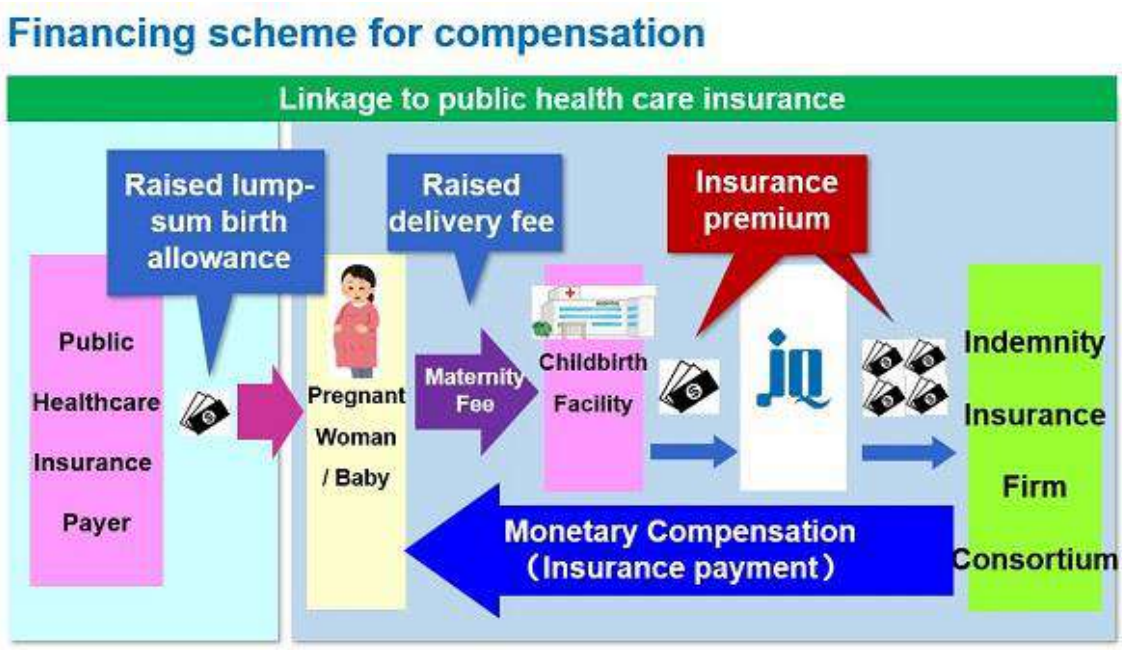
v) ***Strategy to spend surplus***

The contracted insurance consortium reimburse insurance premium in case that surplus take place with eligible number at 300 and beyond annually. The surplus has grown to 500 million USD despite of strategically spending for a part of the premium in 2015 and later. The strategy was revised to spend more i.e. 80 USD compared with previous 64 USD to be a larger part of the premium. With reduction in the total premium price and raised surplus spending, payment by the childbirth facility is reduced to 96 USD as described in iv).

vi) ***Administrative cost***

The current administrative cost rate is 19.1% (Y2015) compared with 41.8% (FY2015-2019) of averaged rate of General insurance products.

Image:



Conclusion: JQ successfully expanded the compensation system for CPs along with the advanced standard in medical science. Inclusion of stakeholders such as healthcare insurer is a key to achieve agreement on the expansion.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2750

CONSTRUCT A TRAINING SYSTEM STRENGTHENING THE CORE CAPABILITIES OF QUALITY CONTROL PERSONNEL AND IMPROVE THE QUALITY OF MEDICAL CARE IN HOSPITALS

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Introduction: As high cost-efficient and high-quality care were designed to be a payment method for healthcare delivery systems, and Healthcare Quality Professionals (HQPs) play a crucial role. The National Association for Healthcare Quality in the United States recommends six core competencies as references for the development of HQP training curricula at schools or medical institution. The hospital provides a series of training programs for HQPs to ensure that they all have those core competencies.

Methods: Select various categories of medical personnel and administration staff to provide core courses of medical quality majors. The course content includes theoretical and practical courses, and is divided into elementary, intermediate, and high-level personnel according to the completed course content.

To increase the investment of clinical physicians in quality activities, each clinical department assigns one physician to be a HQP.

Promote various quality control activities in the hospital through these HOPs to improve the quality of medical care.

Results: As of 2022, the hospital will train a total of 82 HOPs, including 56 elementary HOPs, 18 intermediate HOPs, and 8 senior HOPs.

In 2022, a total of 59 quality improvement activities will be implemented in the hospital, including Shared Decision Making (SDM), Choosing wisely, QCC, HFMEA, etc.

Important quality improvement results such as: reducing the waiting time for CT examination of emergency patients during peak hours, from 46.3 minutes before improvement to 19.9 minutes, and reducing the incidence of falls of inpatients from 0.12% to 0.05%.

Conclusion: Through improving the core competence of HQPs and encouraging clinical physicians to participate in quality control activities, this study found that not only can the

whole hospital pay more attention to quality control, but also through the drive of various quality control teachers, the quality control activities can be improved. The results can also meet the expected goals. In the future, in addition to continuing to cultivate HQPs, the current HQPs will also be trained in professional fields, such as: professional auditors, quality control circle counselors, etc.

Disclosure of interest: None declared.

ISQUA2023-ABS-2762

IMPROVEMENT ACTIVITIES TO REDUCE VERBAL ORDER RISKS

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Introduction: Effective communication, which is timely, accurate, complete, reduce errors and results is improved patient safety. Communication can be electronic, verbal, telephone or written. Poor communication include verbal or telephone order is patient safety issues. If medication errors occur through unidentified communication, the patient suffers physical, psychological, and economic losses. Nevertheless, verbal order that are not accurate are being implemented. This FMEA conducted to recognize the importance of accurate communication and to accurately implement verbal order.

Methods: In order to identify the risk of verbal order communication, we analysis using FMEA (Failure Mode and Effects Analysis) methology.

- Step 1: Select a high-risk process and assemble a team.
- Step 2: Diagram the process.
- Step 3: Brainstorm potential failure modes and determine their effects.
- Step 4: Prioritize failure modes.
- Step 5: Identify root causes of failure modes.
- Step 6: Redesign the process.
- Step 7: Analyze and test the new process.
- Step 8: Implement and monitor the redesigned process.

Results: FMEA team conducted a risk analysis, coming up with a risk priority score based on the severity, detectability of failure modes and probability of occurrence of the effect. The failure modes were listed in order of risk priority score highest to lowest. Among them, three items with high scores are as follows.

- 1st: Risk of medication administration.
- 2nd: Lack of awareness of communication risks.
- 3rd: Failure to comply the protocol.

The root causes were analyzed in terms of environmental, systematic, and medical staff or patients. Redesigned the process and tested the new process. Improvement activities have been implemented. We decided to apply computerized management system. In addition, various activities were conducted to promote awareness. The RPN (Risk Priority Number) value was calculated when the redesigned procedure was analyzed and piloted. When the CI

(criticality index) value was measured after the improvement activity. The possibility of Risk of medication administration decreased from 1,560 to 130. CI levels also decreased significantly after improvement activities related to compliance with verbal order procedures and awareness promotion. We will implement a redesigned procedure and manage it to enable safe verbal order through constant monitoring.

Conclusion: Through the FMEA, we reviewed the entire of verbal order process and found the potential risk factors. Human based communication skill had many error chances, so we decided to import technology based communication program. Most of all, proper communication skill is essential for patient safety. We will continuously implement verbal order communicaion accurately and safety. And it will only be implemented in necessary circumstances. Clear communication will contribute to patient safety.

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ISQUA2023-ABS-2769

USING THE QCC METHOD TO REDUCE THE WAITING TIME FOR BLOOD TRANSFUSION OF RENAL DIALYSIS PATIENTS ACROSS HOSPITAL IN A MEDICAL CENTER IN NORTHERN TAIWAN

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Introduction: Acute and chronic kidney disease patients often become anemic due to insufficient erythropoietin generation. These dialysis patients must only be given blood transfusions during dialysis to prevent fluid overload & hyperkalaemia. However in our hospital the distance between the branch and the main is more than 1 km, so patients need to wait a long time for blood transfusion even delayed treatment sometimes. The purpose of this quality control circle activity is to shorten the blood transfusion waiting time for kidney dialysis patients between different hospital buildings and improve related procedures.

Methods: The activity is from May 2020 to December 2021. The QCC team was consisted of 10 cross-departmental staffs. Goal setting: Shorten the time from drawing blood to receive blood bags at the nursing station is 100 minutes. We adopts lean management, according to the current value stream mapping, discussing with each other and brainstorming among members, judging the problems of the existing process. Following analysis and verification of the true cause then perform PDCA improvement. Countermeasures were formulated, including: 1.Nurses double-check and sign each blood specimen to improve blood stickers are mistakenly pasted; 2. Added visual management of working site and mark on the blood transfusion bag that the sample is sent directly to the blood bank which shortens the waiting time and reduces waste of actions; 3. Branch hospital blood transfusion samples use ECRS to eliminate the central laboratory unifies the receiving process; 4. When there is no shuttle bus, take a taxi or ambulance to send the blood sample and the blood products; 5. Added information system automatic call hospital courier for specimens and blood bags transportation.

Results: The accuracy of labeling of blood transfusion specimens was improved by PDCA increased from 77.42% to 100%. The laboratory computer sign-in time is reduced 8 minutes (from 10 minutes to 2 minutes). The time of waiting transfusion was shorten from 138 mins to 100 mins. (from nurse drawing blood→medical technologist perform pretransfusion test →nurse receives blood bags at the nursing station) After standardizing the delivery of specimens and blood by taxi or ambulance when there is no shuttle bus, the frequency of

use has risen to 42 times. The satisfaction of staff is 90% after the quality control circle activity.

Conclusion: This activity not only shortens the time for patients to wait for blood transfusion, but also directly reduces the time for blood delivery, ensuring the quality of blood and allowing patients to receive better medical care. At the same time, through process improvement, the workflow of couriers, staffs of blood bank and nurses are simplified, which improves work efficiency and personnel satisfaction.

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ISQUA2023-ABS-2777

BARRIERS TO NABH ACCREDITATION: A RETROSPECTIVE STUDY OF THE HOSPITALS NOT RECOMMENDED FOR NABH ACCREDITATION

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Introduction: Accreditation is a widely used mechanism to keep organization adherent to the established standards. A constituent body of the Quality Council of India (QCI), the National Accreditation Board for Hospitals and Healthcare Providers (NABH) was set up in 1997 to establish and operate accreditation programmes for healthcare organizations in India, with the objective of enhancing health system and promoting continuous quality improvement & patient safety. The approval of ISQua authenticates that NABH standards are in consonance with the global benchmarks set by ISQua. NABH accreditation has been in demand from SAARC/Asian nations.

Aim of the study: The aim of this study is to identify the key barriers towards promotion of accreditation in the hospitals, adoption and implementation of NABH accreditation standards in hospitals and exploring the potential overcoming strategies. The objective of this study is to evaluate the causes which are leading to the unfulfillment of the norms of NABH accreditation and enlists the major areas to focus for accreditation.

Methods: This is a retrospective study that is done on the secondary data acquired from NABH online portal. This study is one of the first of its type to examine and draw suggestions from the non-compliances of the hospitals that were not recommended for NABH accreditation across India. An endeavour has been made to offer a quantitative and qualitative assessment of all non-compliance after corrective and preventative actions implemented by the hospitals after their assessment for NABH Accreditation. The study covers 37 hospitals across India over the last two years. The most frequent causes of each hospital's non-compliances are carefully examined so that the root cause can be determined. Statutory non-compliances are examined independently, and the extended data is considered for the study.

Results: Analysis showed the following factors – documentation, internal audit, safety committee, lack of responsibility, training and development, shortage of staff are the common reasons which are leading to the non-compliances in the hospitals. Hospital Infection programme was not structured especially with respect to adherence to safe injection and infusion practices, privileging of ICO, monitoring of hospital acquired infection

rates, validation of sterilization, segregation of biomedical waste etc. Medication management including inventory control practices, look alike and sound alike drug management, prescription audit, medication recall, HR, FMS, Quality and Safety and documentation have been identified as major areas of concern. There was no evidence of involvement of the clinicians and top senior management in the quality process in many hospitals and the commitment at implementation level for patient care was also found lacking.

Conclusion: Accreditation provides pathways to accountability, consistency and better fit between the hospitals and the patients. With the spirit of adopting and implementing accreditation standards to the hospitals, proper trainings must be ingrained as a top-down approach among all levels of staffs with a strong sense of support and commitment from the hospital leadership. Continuous internal quality and clinical audits must be carried out. The barriers to accreditation as well as the suggested overcoming strategies are interconnected, all of which pointing to the need for extensive training for promotion of accreditation in the hospitals.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-2787

CO-PRODUCTION OF PATIENT SAFETY PRIORITIES AND SOLUTIONS. WORKING WITH CHILDREN AND YOUNG PEOPLE TO DEVELOP AND IMPLEMENT PATIENT SAFETY EDUCATION INITIATIVES AND ADDRESS WICKED PROBLEMS TOGETHER

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Introduction: Walking the tightrope of transparency and openness without instilling fear reflects the experience of a growing relationship between Patient Safety Education, the Quality Improvement team and the Young Peoples' Forum (YPF) in our organisation. Seeking the views and opinions of young people who access our services is a vital aspect of the patient safety education strategy. Achieved through regular attendance at their forum to present ideas, seek input and gather views. Actively listening and engaging with young people in our care helps set our direction, focussing on what matters to children and young people and their families.

Methods: "Whilst children and young people don't have quite as much life experience, we still have valid rights, we have opinions and feelings and we deserve the opportunity to be listened to and have that feedback acted on." (Munson & Frounks, 2015).

Building up a rapport with the YPF has been fundamental to this work. Beginning with conversations about safety in healthcare, describing national initiatives to improve safety and building towards activity in our organisation led to open conversations and sharing of views. Honest, transparent discussions have shaped educational priorities and unearthed areas of safety concern that were not thought to be significant.

From this, several streams have emerged:

- Skin tone, colouration and visual changes in deterioration
- Modes of patient identification
- Production by the YPF of the video 'How can you keep me safe'.

Skin Tone

This refers in particular to work on skin tone, colouration, and the changes in physical appearance when a child or young person is becoming unwell. Within our organisation's electronic patient record (EPR) system, there are a number of ways to describe skin colour in relation to wellness. As reported by the Healthcare Safety Investigation Branch (HSIB, 2021), 'this terminology is not always helpful for those

with non-white skin'. We shared HSIB's report and asked the YPF to;

Assess their own skin colours against the Monk Skin Tone Scale
Talk/write about their experience in hospital around language
Describe how they would they like their skin tone to be assessed.

Patient Identification

Misidentification of patients has been identified as a significant national patient safety issue (HSIB, 2022).
Regarding patient identification:

Do you feel photo identification is safe enough?
How else can we identify you?
Exploring alternative products that may be more comfortable.

YPF Video

'How can you keep me safe'
Individual monologues and ideas from this group, directly aimed at clinicians and policy makers.

Results:

Skin Tone

Monk Skin Tone Scale not felt to be representative
Inconsistent engagement with parents/carers
Language felt to be antiquated.

This had led to EPR changes and adaptations to language, prompts and use of imagery in practice.

Patient Identification: results pending.
YPF video: impact and results pending.

Conclusion: This has transformed our approach to patient safety. The honesty, resilience and humour with which the YPF tackle difficult subjects, with a clear view to improving their own experience, and that of their peers is far more influential on policy and process.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2796

HOSPITAL ACCREDITATION IN RWANDA

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Introduction: The Rwanda Ministry of Health adopted hospital accreditation to continuously monitor, measure and improve the quality of healthcare services. The program was launched in 2012. The accreditation standards were developed based on the *International Essentials of Health Care Quality and Patient Safety (JCI).* The standards development process, their updates and guidelines have been customized to the types of health facilities. Currently, the hospital accreditation is mandatory for both public and private health sector. In 2017, an independent non-government independent organization was created to manage the accreditation program and thus avoiding any conflict of interest. The organization has so far conducted three annual baseline and progressive assessments across all district hospitals and some private hospitals and health centers with the financial and technical support from the USAID/RIHSA. The present paper aims at highlighting the accreditation development process, the current hospitals status as well as the main challenges.

Methods: This study is a retrospective review of the last three annual progressive assessments of public hospitals (2018/2019, 2020/2021 and 2021/2022). The health facilities have been surveyed using the second edition of the Rwanda Hospitals standards. Each standard is assessed and scored using the same performance assessment tool kit and scores are aggregated into an excel sheet. Facilities are assessed at the three ascending levels of recognition (Level I, II and III). Accreditation is awarded when a health facility has achieved Level 3 of recognition (the highest). Aggregated data was retrieved to show the trend of the overall accreditation performance according to the 3 levels of recognition. Unmet standards over the three years are aggregated to identify the main challenges and therefore recommendations are made to bridge the gaps.

Results: There is evidence of slow but steady improvement in hospitals ownership and standards compliance as time goes. In 2018/2019, out of 43 hospitals surveyed, only 29 (67.4%) achieved Level I; in 2020/2021, 5/44 (11.4%) achieved Level II while 31/44 (70.5%) achieved Level I; in 2021/2022, 11/45 (24%) achieved Level II and 30/45 (67%) achieved Level I. Level III (accreditation level) has not been achieved so far by any of the facilities but

some are remarkably close to the target. The Ministry of Health and partners engagement in quality and continuous support has been the key factor throughout this program. Quality and safety culture ownership by the facilities leadership remain the cornerstone of successful accreditation. Sufficient, trained, and motivated staff are indeed the backbone of the accreditation program.

Conclusion: Hospital accreditation is possible even in limited resources settings; it is an important strategy for quality and safety improvement in the health sector system strengthening; however high level political support from both central and decentralized levels are fundamental conditions to set-up and run the program; mindset change in health facilities leadership and staff requires sustained effort on a long-term basis.

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A BENCHMARKING STUDY ON THE PATIENT SAFETY CULTURE OF HOSPITALS IN INDIA

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Introduction: Patient safety culture is the extent to which an organization's culture supports and promotes patient safety. It refers to the values, beliefs, and norms that are shared by healthcare practitioners and other staff throughout the organization that influence their actions and behaviors.

In this study, Senior Quality Managers across India from reputed institutions along with CAHO tried to understand the tools used by hospitals towards measuring the culture of safety and understand where we stand as a nation. The Hospital Quality Managers of accredited hospitals were the respondents of the surveys.

Methods: The cumulative scores of the last survey conducted in each of their hospitals on culture of safety were collected through google forms and analysed.

Results: 60 out of 76 (79%) hospitals participated have used AHRQ tool for assessing their patient safety culture. 35 out of 60 (58%) modified the AHRQ survey tool wording for better understanding of their staff. The national benchmark for teamwork was found to be 82.41% (SD=14.7), Supervisor, Manager, Clinical Leader support for patient safety – 76.79% (SD=17.1), Communication Openness – 74.48% (SD=17.2), Reporting patient safety incidents – 75.56% (SD=19.9), Organizations learning/continuous improvement – 85.32% (SD=16.1), Communication about events – 79.36% (SD=16.7), Hospital management support for patient safety – 82.78% (SD=15.2), Response to error – 67.15% (SD=25.1), Handoffs and information exchange – 73.49% (SD=20.4), Staffing and work pace – 65.66% (SD=24.1), and Composite measure average score – 76.26% (SD=18).

Conclusion: Majority of the respondents chose AHRQ tool based on the following reasons: simple, easily understandable, convenient, methodical, validated, fits culture and context, standardized, comprehensive, reliable and user friendly. These results demonstrate that the AHRQ culture of safety survey is being used by majority of hospitals in India to measure their culture of safety. Based on the survey and brain storming, it was identified to focus on

"response to error" as the domain of interest to work-on and create awareness. CAHO has introduced knowledge sharing platform CONVERT (Confidential National Voluntary Event Reporting Tool) to create the repository of adverse events and "Never Events" which are a great learning resource for healthcare professionals to create conscious efforts to learn from errors. Training programs focussing on analysis of incidents, leadership and just culture in safety, risk management have been popularised. This study serves as a benchmark and will enable monitoring improvements of Indian hospitals.

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ISQUA2023-ABS-2805

EVALUATION OF THE ATTITUDES OF HEALTHCARE ACCREDITATION SURVEYORS ABOUT DISTANCE TRAININGS: CASE OF TÜSKA

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Introduction: Training is an important field that changes throughout life and is constantly developing. Previously, only face-to-face education would come to mind when the subject of education was mentioned. Distance training is realized through communication with help of technological tools such as text, graphics, video, sound, satellite, computer, multimedia. Especially recently, due to the adverse conditions caused by COVID-19 pandemic, distance working and distance training model has increased in all areas. Within the scope of activities of Türkiye Healthcare Quality and Accreditation Institute (TÜSKA); It uses a distance model in remote accreditation interim surveys and surveyor capacity building trainings. TÜSKA Healthcare Accreditation Surveyor Training Program, selection and training of health services accreditation surveyors and capacity building training of surveyors are prepared with the aim of determining relevant processes. In this study, perceptions and attitudes of TÜSKA Healthcare Accreditation Surveyors about distance trainings are be evaluated and advantages and disadvantages of distance training model is be evaluated.

Methods: Population of the research consists of 133 people who are TÜSKA Health Accreditation Surveyor. Since it was aimed to reach the universe, sample selection is not made. The questionnaire form used for data collection consists of 2 main parts and 29 questions in total. A questionnaire consisting of 11 questions on sociodemographic characteristics of surveyors and the “Opinions Scale on Distance Training” consisting of 18 questions are used. The scale consists of 18 items and 4 factors. It is a 5-point Likert type scale. The questionnaire form is sent to the e-mail addresses given to surveyors by TÜSKA using google questionnaire method. In the analysis of the data, frequency tables are used as Central Tendency and Measures of Variability Basic Statistics. In comparisons, when the data are not normally distributed, Mann Whitney U test, Kruskal Wallis test and Spearman Correlation Analysis are be used. In January, 2023, the ethics committee of this study is approved by Ankara Yıldırım Beyazıt University.

Results: Since 2020, TÜSKA has implemented online and Two-Way Interactive Distance Training Model within the scope of TÜSKA Healthcare Accreditation Surveyor Training Program. 1-hour case discussion is held at the end of each training. Case discussions are made by expert trainers by simulating the case. 65 surveyors participated in the study, Table

1 shows results of the research. The data are evaluated according to the 4 sub-dimensions (Personal Conformity, Effectiveness, Instructorship and Predisposition) of the Opinions Scale on Distance Training).

Image:

Table.1. Results Of The Research

Sociodemographic Characteristics		n	%
Age (Age 34-62), Mean: 47 (±6.23)	34-43 years (1)	18	27.7
	44-52 years (2)	32	49.2
	53-62 years (3)	15	23.1
Gender	Woman	25	38.5
	Male	40	61.5
Trainingal Status	Bachelor (1)	6	9.2
	Master (2)	36	55.4
	PhD (3)	23	35.4
Employed Institution	public (1)	50	76.9
	Special (2)	one	1.5
	University (3)	14	21.5
Profession Group	Health Personnel (1)	40	61.5
	academic (2)	12	18.5
	Other (3)	13	20.0
Worked Unit	Hospital (1)	21	32.3
	Ministry (2)	27	41.5
	University (3)	10	15.4
	Other (4)	7	10.8
Current Year of Duty	5 years and below (1)	21	32.3
	6-10 years (2)	14	21.5
	11 years and above (3)	30	46.2
Internet access	Annoyed	11th	16.9
	Unlimited	54	83.1
Internet Access Device	computer (1)	14	21.5
	Cell Phone (2)	3	4.6
	Computer and Cell Phone (3)	29	44.6
	Computer, Tablet and Cell Phone (4)	18	27.7
	Tablet and Cell Phone (5)	one	1.5
Distance training Experience	Yes	63	96.9
	No	2	3.1
	Total	65	one hund red

Opinions Regarding Distance training Scale	Cover	SS
1. Distance training is suitable for me due to the intensity of my personal work.	3.71	1.142
2. Distance training suits my lifestyle.	3.46	1.147
3. Distance training is a suitable alternative for trainings I need.	3.68	1.12
4. Distance training allows me to get training without wasting time	4.11	0.97
5. I need the flexibility to attend class whenever and wherever I want.	3.88	1.053
6. It is difficult for me to go to a university campus to study.	2.89	1,226
7. It makes surveyors more active in terms of distance training teaching practices.	2.72	1.231
8. Distance training provides a good learning opportunity for individuals.	3.20	1,252
9. Distance training allows surveyors to learn at their own pace.	3.11	1.134
10. Distance training ensures that learning is permanent	2.72	1,166
11. Distance training is more effective than traditional training.	2.25	1.146
12. Face-to-face interaction is necessary for my training to take place in the best possible way.	3.82	1,236
13. Compared to distance training, ideas are expressed instantly and more clearly in traditional training.	3.88	1,206
14. A more effective learning is provided with traditional training compared to distance training.	3.80	1,227
15. I need face-to-face communication to learn.	3.34	1,302
16. I am a person who has a habit of procrastinating on assigned tasks.	1.31	0.527
17. I often leave tasks unfinished.	1.95	0.716
18. I wait until the last moment to fulfill the responsibilities within the scope of the Training Program.	1.66	1,163

Conclusion: While trainings, interim surveys and meetings for healthcare accreditation surveyors continue face-to-face, due to an emergency such as COVID-19, a remote model has been adopted to ensure the continuity of accreditation and surveyor training. In the world, which has become normal after COVID-19 pandemic, Distance Training model continues to be applied in many areas due to the many advantages it provides. In this study, qualitative data are obtained about distance training model applied in TÜSKA Surveyor Training Program. When results are evaluated, it is seen that traditional education is more advocated in order for surveyor training to be carried out in the best way. However, in order to avoid interruptions in training due to difficulty of life and adverse conditions, it is recommended to develop a distance training model by making more of these researches.

Disclosure of interest: None declared.

Coproduction with staff and service users

ISQUA2023-ABS-2807

RESEARCH MATTERS: A CASE STUDY DEMONSTRATING EVIDENCE-BASED LARGE SCALE TRANSFORMATION

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Introduction: Generating and utilising evidence to inform transformational change in acute hospital contexts is challenging. Understanding the practicalities of knowledge translation for implementation of systems change is rarely focussed on in the literature. The primary author is in a unique position of leading the transformation programme at a major academic teaching hospital whilst also undertaking research on team interventions to improve quality and safety of care. The application of realist evaluation methods to primary and secondary data on teams resulted in the identification of 11 enablers (i.e. programme theories) for team-based interventions. The current paper demonstrates the application of these theories in practice in the co-design of a new major trauma centre (MTC) at the hospital. This case study is a valuable exemplar for many healthcare transformations due to the requirement to consider perspectives of multiple specialties and multiple disciplines involved in delivery of a high quality and safe team-based service.

Methods: Building on the existing work-stream structures for the development of the MTC, a series of 13 multi-disciplinary team development workshops were planned. The MTC transformation project team used the 11 programme theories to underpin the design of the workshops in order to optimise contextual conditions to promote positive team outcomes. Using narrative reflection, the underlying mechanisms i.e., the social and psychological drivers that enabled multi-disciplinary teams' success, are identified using real-world examples.

Results: The triggered mechanisms that were enabled through application of these theories to workshop planning included shared mental models; openness, inclusivity and connectedness; leadership and engagement; social identity, and intrinsic motivational factors. The need to distil complex information, and create *'safe and brave'* spaces for discussion of sensitive quality and safety issues at all levels of the organisation emerged as the strongest theme to enable MTC success. This was particularly relevant for the engagement of clinical leadership in the co-design of this multi-team MTC system.

Conclusion: The programme theories were a useful foundation for workshop design, helping to promote a culture of teamwork and collective leadership. The practicalities of translating these theories to practice provide valuable information for facilitators of systems level change in healthcare.

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Coproduction with staff and service users

ISQUA2023-ABS-2835

HOW THE ESTHER NETWORK MODEL FOR CO-PRODUCTION OF PERSON-CENTRED HEALTH & SOCIAL CARE WAS ADOPTED AND ADAPTED IN SINGAPORE – A REALIST EVALUATION

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Introduction: The Esther Network (EN) Model, a person-centred care innovation in Sweden, was adopted in Singapore to promote person-centredness and improve integration between health and social care practitioners. This realist evaluation aimed to explain its adoption and adaptation in Singapore.

Methods: An organisational case study using a realist evaluation approach drawing on Greenhalgh et al. (2004)'s Diffusion of Innovations in Service Organisations to guide data collection and analysis. Data collection included interviews with seven individuals and three focus groups (including stakeholders from the macro-, meso- and microsystem levels) about their experiences of EN in SingHealth, a healthcare cluster serving a population of 1.37 million residents in Eastern Singapore, and field notes from participant observations of Esther Network activities. Policy-makers (n=4), EN programme implementers (n=3), practitioners (n=6) and service users (n=7) participated in individual interviews or focus group discussions. Outcome data from healthcare institutions (n=13) and community agencies (n=59) were included in document analysis.

Results: Singapore's ageing population and need to transition from a hospital-based model to a more sustainable community-based model provided an opportunity for change. The personalised nature and logic of the EN model resonated with leaders and led to collective adoption. Embedded cultural influences such as the need for order and hierarchical structures were both barriers to, and facilitators of, change. Co-production between service users and practitioners in making care improvements deepened the relationships and commitments that held the network together.

Conclusion: The enabling role of leaders (macrosystem level), the bridging role of

practitioners (mesosystem level), and the unifying role of service users (microsystem level) all contributed to EN's success in Singapore. Understanding these roles helps us understand how staff at various levels can contribute to the adoption and adaptation of EN and similar complex innovations systemwide.

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ISQUA2023-ABS-2849

HOSPITALIZED PATIENTS SATISFACTION OF JOINT REPLACEMENT PATIENTS THROUGH DIVERSIFIED HEALTH EDUCATION PROCESS

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Introduction: Osteoarthritis is the most prevalent chronic joint disease. According to the statistics from Ministry of Health and Welfare reveals that about 3.5 million people in Taiwan who suffered from chronic joint pain. To improve the recovery of patients after surgery and return to pre-surgical lifestyle as soon as possible. The aim is to establish a multifaceted health care system to enhance the satisfaction of patients.

Methods: The case population in our article was admitted to 7A ward and had completed joint replacement surgery. The period is from September 2021 to January 2022. We analyze the lack of consistency in the timing of health education and the poor participation of cases in rehabilitation.

Results: We enrolled 20 patients had knee/hip replacement at 7A ward between September 27, 2021 to October 27, 2022, only 15% of patients agree with and participate in our rehabilitation programs. After performing our protocol, we enrolled 40 patients, followed by inclusion criteria, between November 15, 2021 to January 31, 2022. All patients (100%) agree with our rehabilitation programs and they had well cooperation also. According to our statistics. and 100% of satisfaction of diversified health education.

Conclusion: Diversified health education model establish effective communication between patients and doctors and nurses, thereby improving patient satisfaction leavel in hospitalization.

Disclosure of interest: None declared.

ISQUA2023-ABS-2859

VALIDATING SERVQUAL INSTRUMENT IN MEASURING RURAL HEALTH SERVICE QUALITY IN A LMIC: CASE OF BALESHWAR DISTRICT IN ODISHA, INDIA

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Introduction: To discover new dimensions of HSQ and to validate the dimensionality of the SERVQUAL instrument in the context of District rural health services.

Methods: A cross-sectional survey was conducted in the Balasore District of Orissa, India. Using purposive sampling the District was divided into central, northern and southern regions, 390 patients (150 from 3 community health centers (1 from each region) and 240 from 12 primary health centers (4 from each region)) were interviewed. Five point Likert scale was used to measure five original SERVQUAL dimensions (22 items: 5Tangibles, 6Reliability, 4Responsiveness, 3Assurance and 4Empathy) and six additional dimensions (10 items: 2Corruption, 1Mistakes, 2Overall Quality Level, 2Overall Quality Trend, 1Outcome and 2Discrimination) of health service quality. Exploratory Factor Analysis (EFA) was performed using SPSS-20.

Results: Thirty-two items (22 SERVQUAL and 10 additional) were subjected to Principal Components Analysis (PCA). Sufficient coefficients >0.3 are found in the correlation matrix. The Kaiser-Meyer-Oklin value 0.89 exceeding the recommended value of 0.6 and the Barlett's Test of Sphericity reached statistical significance p<.005, supporting the factorability of the correlation matrix. PCA revealed the presence of seven components with Eigenvalues exceeding 1, explaining 33.03%, 10.71%, 7.21%, 6.31%, 4.60%, 3.51% and 3.36% of the variance respectively. Five components are retained as a clear break was noticed in the Scree plot after the sixth component and again validated by parallel analysis as only five components with Eigenvalues was exceeding the corresponding criterion values. Varimax rotation was performed with five factor extraction. The rotated solution revealed the presence of simple structure, with five factors explaining 61.88% (60% threshold) of the variance (with factor 1, 2, 3, 4 and 5 contributing 22.72%, 13.03%, 11.99%, 8.35%, 5.76% respectively). Fifteen items (E1-4, Res1-4, R3-6, and A1-3) were loaded under the factor1 measuring behaviors (Responsiveness, Empathy, Assurance, and Reliability) of the health service provider and renamed as REAR-Behavior quality dimension. The Five items (OQL1-2, OQT1-2, O1) were loaded under the factor2 measuring outcomes of the health service quality and named as Outcome quality dimension. Seven items (T1-5, R1-2) were loaded

under the factor3 measuring tangibles and IEC (information, education and communication) and renamed as Tangible-IEC dimension as IEC making patient precisely informed about health service delivered as promised. Three items (C1-2, M1) were loaded under the factor4 measuring negligence in the health service quality and named as Boo-boo/Negligence quality dimension. Two items (D1, D2) were loaded under the factor5 measuring discrimination during health service delivery and named as Discrimination quality dimension. Cronbach's alpha for each new factor (0.92, 0.90, 0.83, 0.92 and 0.87 for factor-1, 2, 3, 4 and 5) also exceeded the recommended value 0.70, indicating that scale items in each new dimension are internally consistent and reliable.

Conclusion: The EFA result does not support the original SERVQUAL five-factor model of Parasuraman et al. (1988), but revealed a new five-factor dimensionality namely REAR-Behavior, Outcome, Tangible-IEC, Boo-boo/Negligence and Discrimination. These new dimensions will have implications to formulate State Health Policy and Vision for 2025 and to achieve UHC by 2030.

Disclosure of interest: None declared.

ISQUA2023-ABS-2861

CO-DESIGNING A SHARED DIGITAL MEDICATION PLAN SYSTEM TO SUPPORT PATIENTS AND PROFESSIONALS PARTNERSHIP – EXPERIENCES FROM A REGIONAL INITIATIVE IN SWITZERLAND

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Introduction: What if a patient and a healthcare professional could use the same digital system to manage a shared medication list? This simple question points towards the need for partnership of patients and professionals to improve medication safety, but it also challenges existing national information systems supporting medication data sharing and availability across the care continuum. In countries that have implemented national shared digital medication plans (SDMPs), such as Denmark, Germany and the UK, patients cannot actively update self-medication information or provide feedback. This is a paradox considering the boom of mobile health applications and the fact that patient-driven changes are a main cause of discrepancies between used medications and medication records managed by prescribers.

We report from a Swiss program to design and implement an interactive SDMP system within the federal electronic patient record system. Our co-design project applied lessons learned during a pilot study [1]. It was embedded in the Swiss e-medication architecture elaborated based on international data interoperability framework (IHE and HL7 FHIR). Our research question is how digital health can enhance patient-professional coproduction of medication plans.

Methods: We conducted three studies. The first was an experience-based co-design project to explore expectations and identify value propositions of co-managing a SDMP with a diverse group of patients, caregivers, and healthcare professionals (N=30) participating in interviews, focus groups and collaborative workshops. The second study applied user-centered design to prototype the web-portal with final usability testing in polypharmacy patients aged 42-88. The third, a discrete choice experiment (DCE), assessed relative importance of various SDMP features and its potential uptake in the population with polypharmacy (3 or more chronic medication).

Results: In the first study, the value propositions of a SDMP were identified as: (a) information exhaustivity, (b) enabling patients and professionals to embrace more

concretely their shared responsibility for medications on a common platform, (c) facilitation of collaboration, and (d) new opportunities for quality improvement.

In the second study, the prototype achieved a high usability score (81,5/100), especially on core features of navigating current medication plan and history, modifying or adding medications.

For the third DCE study, the key SDMP characteristics were defined and pilot tested to assess which SDMP features were the most important (e.g., who can update the SDMP) as well as tradeoffs between technical properties, security and financial incentives. Additional factors related to the complexity of medication plan, existing support by healthcare services and informal caregivers, perceived safety risk, health and digital confidence, as well as opinions about SDMP policy and implementation were considered too.

Conclusion: Our three-step action research has generated valuable inputs for the development and implementation of a SDMP in Switzerland. The coproduction with staff and service users proved a key driver for advancing in this complex and highly politicized domain.

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ISQUA2023-ABS-2867

IMPROVING THE ACCESS OF QUALITY REMOTE HEALTH MONITORING BY CONTACTLESS SMARTPHONE APPLICATION

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Introduction: With the potential for contactless monitoring of clinical patient status, remote health monitoring technologies have attracted attention post COVID-19 pandemic with increased access. In this study, we compared remote photoplethysmography (rPPG), a revolutionary smartphone-based technique, against other approved medical equipment to establish whether vital parameters could be detected in a contactless manner in a clinical setting.

Methods: We enrolled a total of 150 normotensive adults in this comparative cross-sectional validation study. We developed computational models for the WellFie application that predict reference systolic, diastolic blood pressure (BP), respiratory rate (RR) from Heart rate (HR) and pulse detected from the facial blood flow data collected from the camera, we applied an advanced machine learning techniques to derive these parameters. The predicted accuracy of the smartphone-based, rPPG-enabled WellFie application was compared with that of equivalent approved medical devices in this study. Institutional Ethical Clearance was taken for the study. (IEC reference no: No.F.5(283)2013-COPF(Ayurveda)/672 (dated 21/12/21))

Results: Our models had an average accuracy of 93.94% in predicting systolic BP; 92.95% in predicting diastolic BP; 97.34% in predicting HR; and 84.44% in predicting RR when compared to reference standards. The RMAPE for the WellFie application was 2.66% for HR, 15.66% for RR, 6.06% for SBP, and 7.05% for DBP.

Table 1: Model prediction performance evaluation.

Model	RMAPE (%)	Accuracy (%)	RMSE	Correlation	U-test(p-value)
HR	2.66	97.34	3.30	0.95	0.133
RR	15.56	84.44	3.83	0.39	0.0001284

BP - Sys	6.06	93.94	8.20	0.57	0.1802
BP - Dia	7.05	92.95	6.53	0.54	0.202

Conclusion: Our findings with normotensive adults show that the Wellfie application with rPPG technology can accurately measure BP, HR, and RR with a level of precision that is comparable to clinical standards. The contactless video-based remote solution provided by the WellFie smartphone application, has also shown increased access, acceptability, and affordability, improving quality of data among patients in need of remote health monitoring.

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ISQUA2023-ABS-2895

CASE STUDY ON COMPLIANCE AND IMPROVEMENT IN INFECTION PREVENTION PRACTICES AND ASSOCIATED FACTORS AMONG HEALTH WORKERS AT A TERTIARY CARE TEACHING INSTITUTE IN NORTH INDIA

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Introduction: Since the emergence of COVID-19 pandemic, many healthcare workers have infected and died of COVID-19 that may contributed to various factors in the working environment. Therefore, understanding healthcare workers' prevention practices towards COVID-19 pandemic as well as possible risk factors are critical issues that helps to predict the outcomes of the planned response and to combat the pandemic. Thus, this study aimed to determine health care workers' compliance with COVID-19 preventive measures and associated factors.

Methods: An institutional-based cross-sectional study was conducted on 402 health care workers at a tertiary care teaching institute in North India. from 1st March, 2021 to 31st May, 2021. Pursuant to baseline data collection, team implemented two change ideas from 1st June, 2021 to 31st July, 2021 and studied improvement using Run charts. The data was collected using pretested questionnaires and analysed using SPSS Version 23 software. Binary and multivariable logistic regression were used to find the significant factors. A P-value of 0.05 was considered as the cut-off point for statistical significance.

Results: Of the 402 healthcare workers who participated in the study, 308 (76.6%) had good practice with COVID-19 preventive mechanisms, while 23.4% had low compliance. It was ascertained that auxiliary staff (AOR = 3.316, 95% CI = 1.081, 10.170), and having good knowledge (AOR = 3.024, 95% CI = 1.415, 6.464) increase the likelihood of implementing prevention measures. Workers having professional experience ranging from one to three years (AOR = 0.248, 95% CI = 1.39–3.74) and six to nine years (AOR = 0.157, 95% CI = 0.041, 0.59) decreased the likelihood of implementing prevention measures. Two change ideas were implemented during the course of the study to enable increased compliance. One was ensure provision of hand sanitisation stations and dustbins on every bed. Second change idea that was implemented were training programs focussed on Infection control practices. It was found that compliance improved to 85.5% from 76.6%.

Conclusion: In general, the study found a low status of preventive practice with COVID-19

preventive measures. Thus, there was a need to improve the preventive practices of healthcare organisations to manage this pandemic.

Disclosure of interest: None declared.

ISQUA2023-ABS-2899

A NEGATIVE ELECTRONIC WORD-OF-MOUTH STUDY OF THE SERVICE QUALITY OF A REGINAL HOSPITAL IN TAIWAN UNDER THE COVID-19 EPIDEMIC

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Introduction: In recent years, there has been widespread research on electronic word-of-mouth (eWOM) reviews in the service industry's customer relationship management. This study adopts 2 service quality measurement theories: the PZB SERVQUAL scale and Flower of Service theory. The main purpose is to explore the performance of hospital online word-of-mouth projection on service quality and to compare the differences before and under the epidemic.

Methods: The eWOM data from a certain Reginal hospital in Taiwan from Google Maps was collected through web scraping technology from June 2011 to December 2021. 164 valid negative reviews were obtained through content analysis and screening. The reviews were categorized and analyzed using Semantic Content Analysis, based on the modified PZB SERVQUAL scale and the Flower of Service Theory.

Results: The dimension of Reliability was the worst one among the five PZB SERVQUAL dimensions, with a negative rating rate of 72.06%. In the service process, "In service: consultation/examination/medical treatment/hospitalization service process" was 59.56%, which represented the worst item. There was a significant difference in service reviews before and after the COVID-19 epidemic. The average score of the more severe negative reviews showed a decreasing performance: A (Appearance) (mean = 1.16), B (Behavior) (mean = 1.38) then C (Communication) (mean = 1.39). In this study, what patients concerned most was about the medical and nursing staff's service attitude and professional skills. The second one was the waiting time caused by poor service process planning, which urgently needs improvement.

Image:

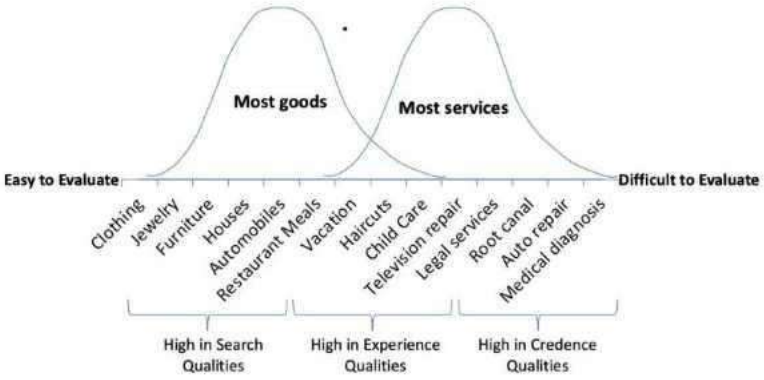

Figure 1. Continuum of evaluation for different types of products.

Conclusion: In COVID-19 epidemic, a good service quality management mechanism should be established. The information (eWOM) will prevent service negligence from becoming cause of service with poor quality.

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Coproduction with staff and service users

ISQUA2023-ABS-2908

DIFFERENTIALS IN PUBLICLY PROVIDED HEALTH SERVICE QUALITY (HSQ): CASE OF BALESHWAR DISTRICT IN ODISHA, INDIA

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Introduction: The health service in Odisha is largely publicly provided. This study identifies differentials (gaps) in HSQ across different levels of health service delivery from perspectives of both patient and provider.

Methods: Cross-sectional survey is conducted through purposive sampling by dividing the district into 3 regions. Apart from the district hospital, from each region one CHC and from each CHC area four PHCs are selected for a sample of 590 patients (200 from the hospital, 150 from 3 CHCs and 240 from 12 PHCs) with equal in- and out-patients for interview. Also, 48 staff, one medical, one paramedical and one administrative from each institution, are interviewed. Five point Likert scale is used to measure 5 SERVQUAL dimensions - Tangibles, Reliability, Responsiveness, Assurance and Empathy - and 6 additional dimensions - Corruption, Mistakes, Overall Quality Level, Overall Quality Trend, Outcome and Discrimination.

Results: Cronbach's alpha coefficients for patient (0.92) and staff (0.89) indicate that scale items are consistent and reliable. For 11 dimensions, patient and staff expectations are higher than their perceptions, indicating the presence of perception-expectation differentials in HSQ. Paired t-tests show that all the differentials are significant ($p<0.05$), except for discrimination and overall quality trend items in patient sample at hospital, overall quality trend items in staff sample at CHC, and first overall quality trend and sixth reliability items in staff sample at PHC level. Service Provider Gap (SPG) differentials are computed by subtracting staff perceptions from patient expectations (Table). SPG in hospital is lower than in CHC and PHC. SPG in tangible dimension at CHC is very high compared to hospital and PHC followed by higher gaps in empathy, assurance, reliability and responsiveness, indicating higher HSQ differentials at CHC than at Hospital and PHC. At Hospital, SPGs in corruption and mistakes are higher compared to CHC and PHC. SPGs in overall quality level and trend are higher at PHC than at CHC and Hospital. At CHC, SPGs in outcomes and discrimination are higher than at PHC and Hospital.

Image:

Table **Service Provider Gap in HSQ**			
Dimensions of Quality	Levels of Service Delivery		
SERVEQUAL items	Hospital	CHC	PHC
Tangibles	-0.18	-1.00	-0.34
Reliability	-0.29	-0.45	-0.45
Responsiveness	-0.29	-0.36	-0.37
Assurance	-0.26	-0.45	-0.24
Empathy	-0.36	-0.58	-0.43
Other items			
Corruption	0.96	0.84	0.16
Mistakes	0.90	0.58	-0.05
Overall Quality Level	-0.20	-0.46	-0.49
Overall Quality Trends	0.06	-0.15	-0.40
Outcomes	-0.17	-0.32	-0.30
Discrimination	0.09	0.51	0.27

Conclusion: Differentials are present in all dimensions at all levels of service delivery, indicating the quality of care is substandard or even dangerous, representing a significant hurdle towards the achievement of a satisfactory level of HSQ. Quality of publicly provided health service in Baleshwar District is impeded due to the presence of various gaps. It is important to reduce health service providers' gaps in order to minimize patient perception gaps. Re-deployment of resources is necessary into the HSQ dimensions that are identified with a larger gap in CHCs, followed by PHCs and Hospital.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2916

MEDICAL QUALITY EVALUATION OF NURSING HOSPITALS IN KOREA

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Introduction:

- In Korea, the number of institutions and medical expenses of nursing hospitals are increasing every year due to the rapid aging of the population and the increase in the number of elderly patients with chronic diseases.
- Accordingly, since 2008, the Health Insurance Review and Assessment Service (HIRA) has been measuring the level of basic medical personnel and medical services in convalescent hospitals based on evaluation indicators suitable for the Korean situation, and disclosing the results to the public. Among the results of the last three year's evaluation, the improvement rate was examined for six medical result indicators that did not change the index.

Methods:

- The subjects of the survey were data for claims for hospitalization fees at all nursing hospitals in Korea from 2019 to 2021, and the overall score of the indicator was averaged by institution.
- The overall score was weighted after standardizing the result value of the indicator.
- If the number of cases subject to evaluation is less than10, it was excluded from the calculation.
- Indicators to be evaluated: Compared to the previous month, the rate of weight loss patients by 5% or more, the rate of new bedsores, the rate of bedsore improvement, the rate of patients with moderate or higher pain improvement, the rate of patients improving daily life performance, and the rate of long-term hospitalization(more than 181 days)

Results:

- The weights loss rate of 5% or more, which identifies the nutritional status of elderly patients, decreased by 54% compared to 2019, and the bedsore improvement rate increased by 24%. Patient pain management improved by 14%, the patient's daily life performance (ADL) improvement rate increased the highest at 110%, and the long-term hospitalization rate decreased by 2%. On the other hand, the number of new bedsores increased by 25%, showing unimproved results.
- The evaluation results of nursing hospitals will be open to the public, and institutions in the bottom 5% of the overall score cannot add medical personnel for two

quarters.

Conclusion:

- The national level medical quality evaluation of nursing hospitals provides meaningful data to distinguish between high-quality hospitals and low-quality hospitals for residents and their families of nursing hospitals.
- Through the last evaluation, the overall quality of medical services for weight management, bedsore management, daily life performance (ADL), and pain management, which are important medical outcome indicators of nursing hospitals, has been improved.
- However, due to the large variation in medical quality by institution, there are no incentives for institution with excellent medical quality other than penalties for institutions with low quality, so it will be newly established in July 2023.

Therefore, it is also necessary to analyze the impact of incentives on improving medical quality in the future.

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-2922

IMPROVING EFFICIENCY THROUGH EXPLICIT RATIONING CRITERIA AND UTILIZATION REVIEW: THE CASE OF REGULATING BRAIN MRI UTILIZATION IN SOUTH KOREA

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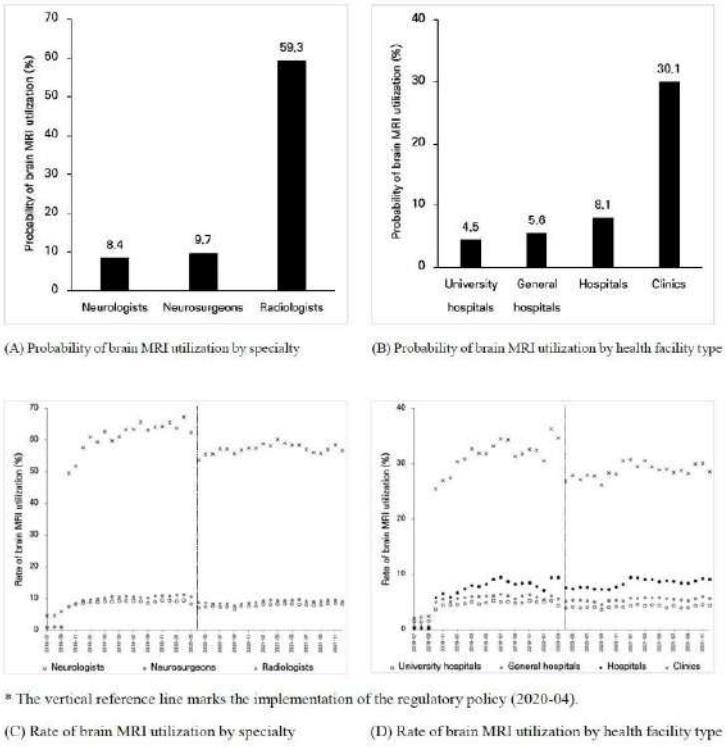
Introduction: Improving efficiency while increasing access is a perennial issue in healthcare quality, especially in the context of expanding coverage of high-cost medical services. The range of services covered by the Korean National Health Insurance (NHI) was expanded in 2018. Following the expansion, the number of NHI-covered brain magnetic resonance imaging (MRI) scans in headache patients increased from about 8,000 in 2017 to 80,000 in 2020. This raised quality issues as increased brain MRI use can lead to incidental findings with little additional benefit at higher cost. In response to concerns over inefficient NHI spending, the government tried to regulate brain MRI use by specifying the explicit rationing criteria and strengthening utilization reviews. Although most public reports have positively evaluated such efforts, this study questions the mechanism of physician regulation which is often taken for granted. The objective of this study is to understand how the regulation based on explicit rationing criteria and utilization review changed physicians' decisions to make brain MRI reimbursement claims.

Methods: Semi-structured interviews with 29 physicians were conducted. Interviewees included neurologists, neurosurgeons, radiologists, and family medicine physicians from clinics, hospitals, general hospitals, and university hospitals. Based on the mechanisms revealed by the qualitative analysis, patterns of brain MRI utilization at the population level were predicted. Multilevel analysis of NHI claims data was carried out to estimate the effect of physician specialty and health facility type on brain MRI utilization. Time series analysis was done to examine the effect of regulation on brain MRI utilization.

Results: Explicit rationing criteria often became tools for discretion, especially when physicians faced the dilemma of making reimbursement claims for brain MRI with low medical necessity under uncertainty and conflict. Physicians pursued multiple goals during the decision process: improving patient health, relieving the financial burden of patients, increasing profit, avoiding medical malpractice suits, and promoting efficient NHI spending. Evaluating the medical necessity of brain MRI was critical for judging the advantage of one's actions in pursuing such goals. However, physicians differed in their knowledge and ability

to reduce or manage uncertainty. Physicians also experienced conflict with patients, private health insurance companies, and health facility managers when these actors demanded reimbursement for brain MRI. When physicians lacked knowledge or ability to cope with these situations, explicit rationing criteria were flexibly interpreted to justify their reimbursement claims. Utilization review was limited in uncovering such discretionary practice. Results of the quantitative analysis confirmed the mechanisms revealed by the qualitative analysis. Probability of brain MRI utilization was highest in radiologists who had less knowledge and ability to deal with uncertainty (Image A), and in clinics which were most vulnerable to conflicts (Image B). After the regulatory policy, the rate of brain MRI utilization initially dropped by about 10% in radiologists and clinics, while little change was observed among other specialties and health facility types (Image C, D).

Image:



(A) Probability of brain MRI utilization by specialty (B) Probability of brain MRI utilization by health facility type

* The vertical reference line marks the implementation of the regulatory policy (2020-04).

(C) Rate of brain MRI utilization by specialty (D) Rate of brain MRI utilization by health facility type

Conclusion: Physician discretion persisted through the use of explicit rationing criteria. In order to improve efficiency, regulation should be coupled with reducing uncertainty and conflict while enabling physicians to cope with these problems.

Disclosure of interest: None declared.

Integrated Care

ISQUA2023-ABS-2950

DEVELOPMENT AND IMPLEMENTATION OF AN INTEGRATED CARE PATHWAY FOR FACILITY-BASED DELIVERY IN MEXICO: SUCCESSES AND FAILURES OF AN INNOVATIVE EXPERIENCE

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Introduction: Maternal and perinatal mortality and morbidity associated with childbirth are high in Mexico and a matter of concern for the Health authorities. An observational study in the biggest maternity hospital in the State of Chiapas (11,000 deliveries yearly) unveiled quality problems in all phases of the delivery process. We proposed as a suitable intervention the design and implementation of an Integrated Care Pathway (ICP). The ICP enhances coordination, evidence-based streamlined care, and teamwork. It is a tool relatively common in other countries but not in Mexico. Consequently, this experience has the added interest of being a novel intervention in the country worth to try and analyze

Objective: Design and implement an internally developed ICP to improve the quality of facility-based delivery care (vaginal and cesarean) in a public maternity hospital in Chiapas, Mexico

Methods: An interdisciplinary group of twenty health professionals, representing those involved in the care process, developed the ICP. It was decided to look at the whole process, from admission to discharge. It was built after 22 face-to-face sessions in 2018, including the operational documents and a set of indicators to assess implementation and compliance. Before the pilot (2019), health personnel was trained on the ICP and its operational formats. Then, the ICP was piloted for 15 days. The pilot results were discussed, and some modifications were introduced before routine implementation. To assess effectiveness, indicators were measured in random samples of deliveries before the pilot (n=40) and biannually (n=60 and n=80). The working group made a qualitative assessment of barriers ad facilitators

Results: The ICP formats (time-matrix checklist with the sequence of actions of the personnel involved in the care process, the variations sheet to register cases and causes of non-compliance with expected actions, and the survey to patients) were declared official and included in the medical record. However, their use was uneven by shift (more frequent in the morning), and by profession (nurses more than physicians). The average registered

uptake was a low 33% of deliveries. Regarding indicators, there were some improvements in those with zero compliance at the outset (i.e., complete partogram, complete active management of the delivery third phase, newborn assessment before discharge). Some bad practices remained surprisingly unchanged (i.e., seven-day antibiotic treatment post c-section instead of prophylaxis, unjustified episiotomy), and some best practices decreased in the second evaluation (i.e., newborn's immediate care, breastfeeding in the first hour postpartum, delayed clamping of the umbilical cord). The qualitative assessment identified several barriers, such as new management and personnel with a lack of knowledge of the ICP, not repeating regular ICP training, a deficient culture for quality improvement, and the resistance to discuss the scientific base of routine practices, favored by usual low attendance to clinical sessions

Conclusion: The hospital considered the ICP and resulting operational documents an asset. However, the implementation design should have considered relevant barriers that hampered the ICP's effectiveness. The strategy for implementation needs a revamp, but the ICP itself remains potentially useful both for this and other hospitals

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2956

HOW TO IMPROVE WORKFORCE, FACILITIES, AND EQUIPMENT IN INTENSIVE CARE UNIT IN KOREA: LESSON LEARNED FROM COVID-19 PANDEMIC

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Introduction: Amid the COVID-19 pandemic, a great number of critical patients needed the medical care in Intensive care unit (ICU). However, there was a considerable gap between the number of ICU beds that are currently available identified by the government and the ICU beds that can actually accommodate patients. This is how the government came to realize the necessity to research the current status of ICU in Korea in terms of workforces, facilities, and equipment. This study was conducted in a view to figure out the problems facing ICU in Korea and present how to solve the problems.

Methods: We investigated the entire ICU using the data of current status of the medical centers nationwide. A survey was conducted on 94 hospitals (94 out of the total 350 hospitals with a 26.9% of answers returned) that have the ICU regarding workforces, facilities and equipment available for the ICU, in order to understand their difficulties and to offer solutions. The in-depth interviews were conducted with the 29 persons concerned including intensivists, nurses, administration staffs, and architects specialize in hospital architecture, focusing on the inquiries on their views regarding the criteria and difficulties in operating ICU or suggestions for improvement.

Results: As of 2022, the number of intensive care unit beds in Korea is 11,320 (4,629 for tertiary hospitals, 6,420 for general hospitals) in total. The total number of intensive care unit beds is on a par with the average number of OECD (2020), which is 12 beds per 100,000 people. However, negative pressure isolation rooms turned out to be 828, accounting only for 7.2% of the total beds for seriously ill patients. One intensivist had to take care of up to 30 patients and some ICU even had no designated doctors. Nursing staffs as well, fell short of the high demand for nursing care, as the number of infected patients growing. In terms of facilities, most of the units were not proper enough to care for the infected patients as the units are open space to accommodate multiple patients. Besides, there was no legal criteria for the high-risk medical equipment and the ICU was in operation lacking essential equipment.

Conclusion: Korean government should make concrete efforts to improve the environment of ICU both quantitatively and qualitatively as follows. First, physician and nurse staffing levels should be increased and prescribed in the Medical Law. The number of nurses placed for ICU should be 0.5~1 per a patient. Second, negative pressure isolation rooms should also be expanded. Improvement in facilities need to be done subsequently from tertiary hospitals to general hospitals. In particular, negative pressure isolation rooms need to be renovated for single patient. Third, legal criteria should be set for medical devices in ICU especially for the essential equipment for high-risk patients such as extracorporeal membrane oxygenation (ECMO) and continuous renal replacement therapy (CRRT).

Disclosure of interest: None declared.

ISQUA2023-ABS-2967

CLIMATE CHANGE IS COMING, ARE HEALTH SYSTEMS PREPARED? FINDINGS FROM A SYSTEMATIC REVIEW

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Introduction: Climate change has been described as "the greatest global health threat facing the world in the 21st Century" [1]. Whilst there is a large body of literature that examines the impact of climate-related events on human health, few studies have discussed the increasing impact of these events on the healthcare system as a whole. This systematic review aimed to understand the quality and quantity of evidence exploring the nexus of climate change and health systems and explore the degree to which health systems are prepared for ever-present and increasing threat of climate change.

Methods: Seven databases (Business Source Premier, CINAHL, Cochrane Reviews, Embase, Health Business (EBSCO), MEDLINE, and Web of Science) were searched for papers published in English from their respective inception dates to present. Scopus was also searched from 1990. Case studies, reviews, federal or national-level government reports or reports from international authoritative agencies that had a primary focus on climate change and health systems were included (e.g., World Health Organisation). This review was prospectively registered in PROSPERO (CRD42022383719).

Results: One hundred and twenty-nine articles met the inclusion criteria. Study designs included empirical, narrative descriptive, review and multiple methods. Studies were synthesised according to the level of the health system that they addressed: micro, meso or macro. Common climate change events reported were hurricanes, floods, and heatwaves. The most common services discussed were emergency, psychological, internal medicine, surgical, hospitals and the whole health sector. Data were synthesised along seven key topics; (1) service interruption because of climate hazards (n=37), such as evacuation and equipment damage; (2) surge capacity and increased burden on the system (n=40), including heat-related events and pandemics; (3) tools and frameworks for preparing for and dealing with climate change (n=11), such as surveillance systems and protocols; (4) infrastructure and urban planning (n=59), including the structural integrity of healthcare infrastructure; (5) communication (failures, plans, systems to cope) (n=43), where there was an emphasis on the importance of appropriate planning and back-up systems, (6) workforce (skills, education and preparation) (n=60), where education and leadership were identified as crucial, and (7) financial costs on the health system (n=19), in relation to costs at all system levels.

Conclusion: Over the last 30 years, studies have detailed the aftermath of climate change and weather-related events on the healthcare system, yet few studies discussed the need to prepare for the longer-term threat of climate change. In this presentation we identify seven key themes that have emerged from the literature which can be used as a model to assist the health system and those that work within it to prepare for climate change.

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Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-2969

ORGANISATIONAL CULTURE AS A DRIVER OF LEARNING HEALTH SYSTEMS

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Introduction: Healthcare systems must constantly change in response to new information from diverse sources. This includes research findings and patient data as well as patient outcomes and experiences. The overarching aim is to provide high-quality care in line with the best available evidence.

To facilitate the incorporation of new evidence into healthcare systems, the US Institute of Medicine (IoM), now the National Academy of Medicine, proposed that healthcare systems become Learning Health Systems (LHS). The IoM proposed a framework for the development of an LHS that included four inter-related dimensions: Science and Informatics, Patient-Clinician Partnerships, Incentives, and a Continuous Learning Culture. Since the framework was first proposed, there has been increasing interest in developing LHSs across different settings.

As organisational culture is one of the core elements in the success or failure of implementing change in an organisation and in light of the increasing interest, it is timely to conduct a comprehensive review of the LHS literature with a specific focus on the organisational behaviours underpinning such a change. In this scoping review, we used the four IoM framework to identify barriers and enablers to the adoption of an LHS, and then applied organisational change theories to understanding of how organisations can more rapidly implement an LHS.

Methods: A scoping review was conducted in PubMed and Scopus using the search phrase "learning health* system*" in January 2021. Included documents were published between 2016-2021, written in English, and described LHS barriers or enablers. Data were extracted based on the four dimensions identified in the Institute of Medicine's (IoM's) 2013 Learning Health Care System framework: Science and Informatics, Patient-Clinician Partnerships, Incentives, and a Continuous Learning Culture. We assessed the data using prominent theories of organisational change (including organisational readiness theory, organisational learning theory, and complexity science) to understand how healthcare systems can develop a continuous learning culture.

Results: Three hundred and seven publications were included: 235 (77%) discussed at least one barrier and 288 (94%) discussed at least one enabler. Barriers and enablers under the Science and Informatics dimension were the most frequently addressed in the literature (127 (41%) and 205 (67%), respectively). A Continuous Learning Culture was the second most frequently discussed enabler of an LHS (161 publications, 52%).

Conclusion: The literature reveals the importance of organisational culture to the development of an LHS. Theories of organisational change provide insight into the ways organisational culture needs to change for current healthcare systems to become an LHS. Shifting organisational norms towards a culture of ongoing learning through the fostering of multidisciplinary teams, developing staff skills and capacity, and encouraging sensemaking and adaptation can increase organisational readiness for change. Contextual factors, such as policies and procedures, must also be adapted as well.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2974

MEASURING ACTUAL HARM FROM MEDICATION ADMINISTRATION ERRORS IN AN ACUTE PAEDIATRIC HOSPITAL

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Introduction: Medication errors are difficult to identify and quantify, but measuring actual harm from medication errors in paediatric patients is even more challenging as doses need to be adjusted for patient weight and age. Our objectives were to identify and describe the actual harm resulting from medication administration errors in a paediatric hospital.

Methods: We used medication administration data collected by a team of nurse researchers during a stepped-wedge cluster randomised controlled trial (SWCRCT) at a paediatric acute care hospital in New South Wales, Australia [1]. The research team used a customised software tool (POSSUM) to record details of the administrations [2], these observational data were then compared to the original medication orders in the patients' records to determine whether an error had occurred. Errors were classified and rated for potential harm. Case studies were prepared for errors rated as having a) serious potential harm and, b) were associated with one or more of the following: dose levels greater or less than 10% of the prescribed dose, errors in preparation or delivery route, and/or were administered at a rate 15% above or below the recommended rate. Case studies were presented to a multi-disciplinary panel to determine whether the patient had been harmed by the error.

Results: The research nurses observed 5140 administrations. A total of 1105 errors with serious potential harm were identified relating to 504 administrations. The panel reviewed 393 case studies and determined that harm occurred in 67 of these. The harm severity ranged from minor (n=30), moderate (n=30) and serious (7) harm, with none designated as severe harm. The most common error (n=12, 21% of all harms) related to rapid administration of intravenous antibiotics in children aged less than one year. The most common type of harm related to IV extravasation requiring the cannulae to be re-sited.

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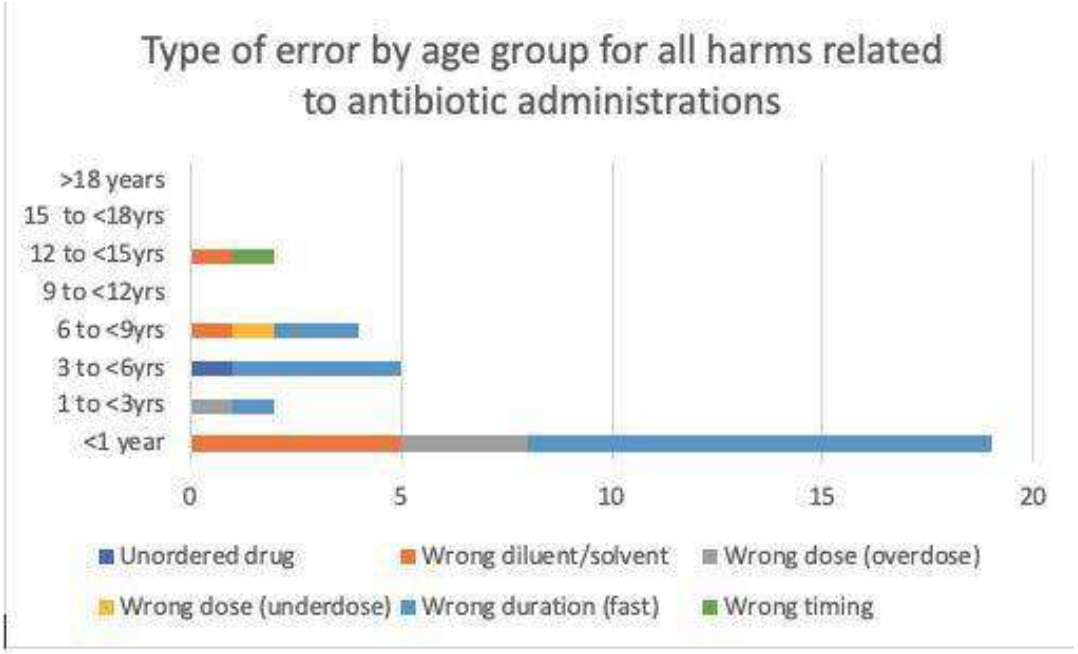

Conclusion: Our panels found harm in 67 case studies (17% of those reviewed by the panel), with 60 of these harms (90%) rated minor to moderate in severity. We note that the most common error, fast administration of intravenous antibiotics, could be addressed through education, ensuring medication administration systems have age-appropriate decision support tools available, and wider use of syringe drivers.

We would like to acknowledge the contribution of Amanda Woods and her team of data collectors.

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Disclosure of interest: None declared.

ISQUA2023-ABS-2991

THE PERFORMANCE OF RWANDA PUBLIC HOSPITALS IN QUALITY IMPROVEMENT AND ACCREDITATION IN 2022

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Introduction: The performance in quality improvement and accreditation of Rwanda public hospitals in 2022.

Rwanda has been on a journey to improve quality since 1998. As such, the Ministry of Health has established programs in collaboration with various partners over time to address priority health care issues using quality improvement approaches. In the past 10 years ago, public hospitals started to be enrolled into accreditation system. The ultimate desire was to institutionalize quality throughout our health care system starting from the inspection of public health facilities for performance appraisals.

Methods: Surveys are conducted by an independent body, the Rwanda Agency for Accreditation and Quality HealthCare (RAAQH), with the aim to establish the levels of standards compliance for these health facilities. In 2022 survey was conducted from March to July 2022, with an aim of establishing the hospital's performance progress toward achieving accreditation standards. A survey manual and hospital performance assessment toolkit -2nd edition of October 2014 was used to ensure the surveys remained as objective as possible. A total of forty-seven public hospitals were enrolled with two hospitals at baseline assessment while forty-five hospitals had progressive assessments. For each hospital, the survey team was composed by four certified surveyors who spent three days for onsite surveys followed by a day of report writing. During data collection, the survey methodology was discussed with the hospital management team, an overview of the survey process was well discussed in detail (including in the survey process, and a document review of both administrative and medical records). More to that, staff interviews and facility tours were conducted, allowing comprehensive and thorough observations to determine the extent to which facilities ensured environmental safety

Results: The findings show that during this survey, no hospital achieved level 3 of effort despite evidence that some hospitals are quite close to the target (example at Level III, Kacyiru District Hospital achieved the 70% required overall score, over the required 60% at

each risk area but achieved only 68% out of required 100% for critical standards to achieve level III). However, 11 Hospitals achieved level 2 of effort, and level 1 of effort was achieved by 30 hospitals whereas six hospitals did not achieve any level of effort. Kacyiru Hospital was the best performer with 94% and four Hospitals scored below 50%.

Image:

Table 1: 2021 Hospital Accreditation Results

Achievement of accreditation levels	Number of Hospitals	Rate (%)
Achieved level II	5/44	11.36
Achieved or maintained Level I	30/44	68.18
Did not achieve or lost Level I	9/44	20.45

Source: RAAQH, Executive Summary Report assessment; 2021

Conclusion: Although significant strides have been made in most Hospitals, there is still needed to institutionalize continuous quality improvement. All the hospitals that did not perform sufficiently at level 2 will need to commit and adhere to the recommendations put forth in the individual detailed progress reports. Maternal and child health indicators and related standards should be focused on in next progressive assessments. Regular clinical audits including death audits should be systematically conducted and documented to ensure sentinel events, incidents and adverse events are continuously identified and eliminated

Disclosure of interest: None declared.

ISQUA2023-ABS-3032

EFFECTS OF ANTIMICROBIAL STEWARDSHIP PROGRAM AT TERTIARY AND SECONDARY HOSPITALS IN SOUTH KOREA: AN INTERRUPTED TIME-SERIES ANALYSIS

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Introduction: The implementation of antimicrobial stewardship programs (ASPs) is a promising strategy to help address the problem of antimicrobial resistance by reducing the inappropriate use of antimicrobials.

Despite increased awareness about the benefits of these programs, few comprehensive studies evaluate their effects in South Korea.

To promote ASP, the Korean Society of Infectious Diseases and Health Insurance Review & Assessment (HIRA) jointly implemented the Korea National Antimicrobial Use Analysis System (KONAS) which started at 26 hospitals in 2019 and expanded to 58 hospitals in 2020.

We investigated the effect of KONAS on antibiotic use divided into KONAS participating hospitals and non-participating hospitals among a total of 365 hospitals including tertiary and secondary hospitals.

Methods: We analyzed National Health Insurance claims data for tertiary and secondary hospitals from January 1, 2019, to December 31, 2021.

The outcome measure is antibiotic use during in-hospital based on a defined daily dose per 1,000 inhabitants per day (DID).

The 36-month period, interrupted time series analysis was retrospectively conducted to evaluate antibiotic use in KONAS participating hospitals compared to non-participating hospitals.

Results: Antibiotic use of KONAS participating hospitals decreased to a greater extent from 16.46 DID in 2019 to 14.14 DID in 2020 and 13.72 DID in 2021, showing that the average annual increase rate was –8.73%. On the other hands, antibiotic use of non-participating hospitals decreased from 16.26 DID in 2019 to 15.74 DID in 2020 and 14.89 in 2021, showing that the average annual increase rate was –4.29%.

According to the ITS analysis, the level (β2) of KONAS participating antibiotic use

decreased by 0.67 and it was statistically significant, while the slope of the trend (β3) was 0.03 non-significantly.

On the other hand, in the non-participating hospitals, the level (β2) of antibiotic use increased by 0.65 at the statistically significant level.

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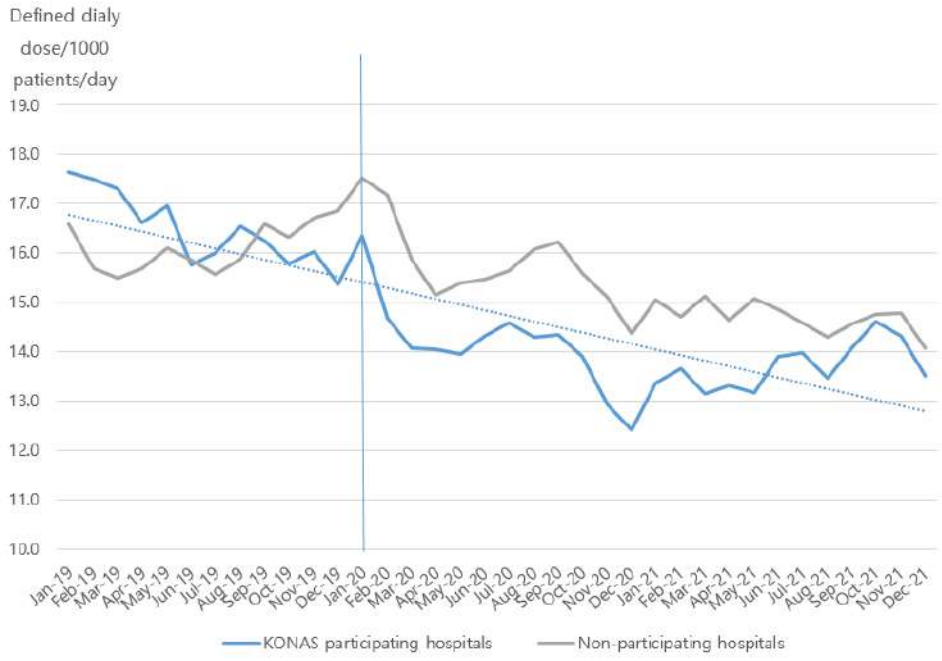

Conclusion: Our data demonstrate that an ASP improves the appropriate use of antibiotics in hospitalized patients of KONAS participating hospitals, compared to the non-participating hospitals.

The introduction of an antimicrobial stewardship program and participation in KONAS resulted in an immediate reduction in antibiotic use, however, the effect of this intervention might not be continued over time.

Further policies to promote the ASP and improve the use of antibiotics are needed.

Reference

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Disclosure of interest: None declared.

External Evaluation

ISQUA2023-ABS-3037

EVALUATION OF THE SOCIAL IMPACT OF THE TRANSFORMATION OF LONG-TERM CARE IN THE EAST DISTRICT HEALTH CENTER OF CHIAYI CITY

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Introduction: In September 2018, three key projects were launched, including the C Site of long-term care in alleys, support services for family caregivers, and community health building. To provide systematic courses and long-term care activities from a preventive medicine perspective to meet the physical and mental health needs of the community (the elderly).

In order to evaluate the results of three key programs in Chiayi Eastern District Health Center in stages, this study introduced the SROI method and quantified the value and social impact created by transforming long-term care by collecting feedback from stakeholders and conducting professional analysis.

Methods: The Evaluation period of this report is from the beginning of 2019 to the end of 2020, a total of 2 years. It is the Evaluation SROI report.

After discussion with stakeholders, the main results include: promotion of physical and mental health and social participation, removal of life stress, improvement of life quality and health awareness, etc., showing that the current implementation strategy and content of the plan can indeed echo the goals of the plan.

Results: The results of service users and service providers are as follows:

- Health promotion activities: Stakeholders benefit directly in terms of weight loss and improvement of chronic diseases due to increased awareness of nutrition and health.
- Promotion of social participation activities: The Eastern District Health Center of Chiayi City has increased the frequency of communication with the community and between the people, so as to improve the favorable degree of each other, and feel the sense of happiness and fulfillment of life, so as to meet the social needs.
- Multiple integration of long-term care resources: Service users have obtained results such as “reducing the pressure of family care”, “sharing learning between

generations, feeling warmth", "improving the knowledge of care", etc. The achievements obtained by the staff of Chiayi East District Health Institute include "care skills, knowledge, nutrition improvement", "gain diversified knowledge", "see the elders, community change, gain a sense of achievement", etc. External inter-office and non-governmental cooperation also achieved the results of "enhancing community interpersonal interaction", "giving full play to community characteristics and being more creative", "Training volunteers to make activities more smooth", and "Being a community leader and having a leading effect".

Conclusion: Based on the investigation and analysis of this study, the value created by each NT $1 invested in the three key programs is as follows: the long-term care of the C site in the alley is NT $3.65; NT $2.06 for family caregiver support services; Community health building NT $4.64.

Finally, the research results and stakeholders' feedback during the research process were discussed with the management of the Eastern District Health Center of Chiayi City, and the optimization and resource allocation direction of the future long-term lighting related plans were discussed, so as to maximize the influence and social benefits of the key plans.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-3053

TELEHEALTH REGULATION, ACCESS AND QUALITY BEYOND COVID-19: EVIDENCE FROM DUBAI, UNITED ARAB EMIRATES

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Introduction: Health systems across the globe are facing unprecedented challenges in meeting patient needs and the rising burden of illnesses especially in times of pandemics. In several countries, the pandemic expedited innovation in healthcare delivery including the use of Telehealth. The WHO recommends Telehealth as a unique approach to delivering healthcare at times of crisis (WHO, 2021). Telehealth is the use of telecommunications and virtual technology to deliver healthcare services remotely without a physical presence of the patient.

The United Arab Emirates (UAE) is part of the Middle East and North Africa region with a population of 9.8 million (World Bank, 2019). The country has taken major steps towards incorporating highest quality of care and improving patient access through Telehealth. International studies show a decrease in the use of telehealth post surge periods with limited information about the quality measures implemented to monitor the provision of telehealth services. This presentation aims to provide an overview of the Telehealth regulations in Dubai and present trends in access and quality monitoring post COVID-19 pandemic from a regulatory perspective.

Methods: A mixed methods approach was used. A qualitative approach was used to conduct a policy analysis on existing regulations for Telehealth. A quantitative approach was adopted to collect data on specific distribution and performance measures pre-piloted by the regulator (Dubai Health Authority) for 2021-2022. The data explored trends in licensure and provision of services in addition to quality of provided services (consultations, referrals, prescriptions, medication errors, patient and staff satisfaction). Data was collected from a sample of sixty-one (61) licensed and operating telehealth providers.

Results:

Qualitative results: a rise in the comprehensiveness of the regulations of Telehealth services over time in the Emirate of Dubai was noted. Assuring meeting patient needs while maintaining information security and providing the highest quality of care were areas of

special highlight in the regulations.

Quantitative results: Telehealth providers almost doubled between 2021-2022 (n=70 vs. 129) with the majority having the service added to their facilities (hospitals, clinics and ambulatory surgical clinics). 24% increase in tele-consulations and tele-prescriptions were found in 2022. Tele-prescriptions were found to be comparable to the literature. There was a decrease in medication error and emergency referrals in 2022. Patient and staff satisfaction were found to be high compared to the literature with further improvement in 2022.

Conclusion: Telehealth is a developing field around the world and several governments have been working on imbedding more technologies within their health systems, but quality monitoring of telehealth is still not well developed. This presentation provides the experience of Dubai in regulating telehealth services. Health entities and researchers can use this experience as a resource on telehealth regulations and opportunities of improving quality of healthcare within their healthcare systems.

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Disclosure of interest: None declared.

ISQUA2023-ABS-3057

HOSPITAL STAFF EXPERIENCES OF UNPROFESSIONAL BEHAVIOURS BY CO-WORKERS FOLLOWING AN ORGANISATIONAL CULTURE CHANGE PROGRAM AT FIVE AUSTRALIAN HOSPITALS

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Introduction: Unprofessional behaviours between healthcare workers are highly prevalent [1] with significant impacts on staff, care quality and outcomes [2]. Evidence of effective interventions to address unprofessional behaviours is sparse. We aimed to measure changes in the prevalence and type of unprofessional behaviours following implementation of an organisation-wide culture change program, Ethos.

Ethos is a multi-component program incorporating capacity-building in speaking-up; an online system for reporting co-worker behaviours; and a tiered accountability pathway including peer-messengers who deliver informal feedback to staff. Ethos is modelled on professional accountability programs developed in the United States [3].

Methods: A cross-sectional survey of staff (clinical and non-clinical) across five hospitals before (2018) and 2.5-3 years after (2021/2022) Ethos implementation, asked about experience of 26 behaviours in the previous year; agreement to statements about speaking-up and reporting unprofessional behaviours; and awareness and use of the Ethos program.

Five of the 26 behaviours were classified as 'extreme' (e.g., assault) unprofessional behaviours and 21 as incivility/bullying. Change in experience of incivility/bullying was compared using multivariable proportional odds logistic regression. Change in extreme behaviours was assessed using multivariable logistic regression. All models adjusted for respondent characteristics.

Results: Baseline response rate was 30.7% (n=2552) and 17.0% (n=1423) at follow-up. There was a reduction in the odds of staff experiencing incivility/bullying by 24% (adjusted OR 0.76; 95% CI 0.66-0.87; p<0.001) and a 32% (adjusted OR 0.68; 95% CI 0.54-0.85; p<0.001) reduction in odds of 'ever' experiencing extreme unprofessional behaviours following Ethos. Staff attitudes and reported skills to speak-up were significantly more positive at follow-up. 82.1% (95%CI 80.0-84.0%) of respondents were aware of Ethos, of these 33% had sent or received an Ethos message. The impact of the COVID-19 pandemic on unprofessional behaviours and the study findings were investigated.

Conclusion: Implementation of the Ethos program was associated with a significant reduction in the overall prevalence of unprofessional behaviours and increased capacity of hospital staff to speak-up. Evaluation of US professional accountability programs has demonstrated a reduction in unprofessional behaviours by specific individuals targeted for intervention [4]. However, no previous study has shown an overall reduction in unprofessional behaviours across a population of hospital staff following a professional accountability program. Our results suggest that such multi-component programs show promise as effective for organisational culture-change.

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Workforce, Policy, and Governance

ISQUA2023-ABS-3064

EXPLORING HOSPITAL STAFFS' INTENTION TO USE THE OPTIMIZING DRUG DELIVERY SYSTEM TO IMPROVE THE EFFICIENCY OF DAILY CLINICAL WORKS

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Introduction: The quality and safety of medication for inpatients have long been received notice because medication-related errors account for a very high proportion of medical errors. A lot of medical information technology and equipment have been built into the correctness of the medical system, but the fast and smooth delivery of the medication prescribed by the physicians to the patient is an important issue that the organization often neglects or pays little attention to. How to improve the efficiency of medication delivery in daily clinical work becomes a critical research question. With the support of hospital management, Barcode is used to link inter-departmental operations in the hospital information system to improve the drug delivery process. This study aims to explore hospital staff's intention of using a newly designed Barcode based drug delivery system.

Methods: The "Optimizing Drug Delivery System" was designed to send an instant message notice to the hospital staffs once the medication is ready for delivery. Through the Barcode system, the pharmacists and ward nurses can track when and who picks up the medications. Thus, medications may be delivered to inpatients on time. The study test subjects are healthcare-related personnel who have the opportunity to use the system at a medical center located in Southern Taiwan. The Technology Acceptance Model plus "trust" and "management support" constructs were applied as a research framework for the questionnaire to explore the intention of the hospital staffs of using the new system. The questionnaire was distributed to the healthcare professionals and the drug delivery staffs. A total of 268 questionnaires were distributed with 180 and 58 valid returned questionnaires for the healthcare professionals and the drug delivery staffs, with an effective return rate of 90% and 85.5%, respectively. Statistical analyses include *t*-test, ANOVA, correlation, and multiple linear regression. This study received IRB approval from Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan (KSVGH22-CT8-05).

Results: The study result shows that "perceived usefulness" and "management support" have a significant positive effect on the intention to use the new system by both healthcare professionals and the drug delivery staffs. "Trust" also has a significant positive effect on the intention to use the new system by healthcare professionals.

Conclusion: Combining creative ideas of automated notification systems and clinical workflows with Barcode to improve patient medication safety is the goal that makes the concept closer to the user needs. To achieve the expected benefits, in addition to the technology development, the most important thing is based on the study findings to enhance the willingness of medical personnel to participate in the system, so that the use of the system can be efficiently integrated into daily clinical work.

Disclosure of interest: None declared.

ISQUA2023-ABS-3076

'KANO MODEL' AND 'DESIGN THINKING' BASED INNOVATIONS TO REDUCE INPATIENT ANXIETY DURING EYE SURGERY

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Introduction: Preoperative anxiety may lead to stress and dissatisfaction [1-3]. Overall prevalence of preoperative anxiety reported in some studies is in range of 60–80% in western population but some researchers showed a wider range, which is 11–80% [4].

We came across Kano model (Annexure - Figure 1) and Design thinking (DT) for innovative solutions.

Methods:

- **a) Hospital anxiety and Depression Scale (HADS-A)** was used to measure the levels of anxiety among patients. Presence of anxiety was rated as not present for scores less than 7, possible between 8 and10, and probable greater than 11. Questions asked- Q1. What made you feel anxious? Q2. What do you think can help reduce your anxiety levels?
- **b)** In **Kano model,** patients inputs were classified into performance, attractive, indifferent, and reverse. Responses received were classified as Indifferent, Must be, Primary satisfiers, and Attractive.
- **c)** We used QFD (**Quality Function Deployment)/ House of Quality)** to understandcustomer expectations and decide what changes should be incorporated in current design and processes. Expectations were translated into technical requirements.
- **d) Design thinking** was used to identify and innovate new solutions (Refer Annexure - Figure 2). Two cross functional teams were formed and began i) **Empathizing,** ii) **Defining** problem, iii) **Ideating** solutions, iv) **prototyped** solutions v) pilot **tested** v) then **implemented**.

Results: Kano model categorizes various patient attributes (Annexure - Figure 3). Out of **10 attributes** evaluated by patients. There were 2 Indifferent, 2 Must be, 2 primary satisfiers, 4 Delighters. **QFD (House of quality)** - solution set varied from playing soothing music, better staggering of patients, better scheduling of surgeries, improved coordination between staff,

communication trainings, etc. (Refer Annexure - Figure 4). With **Design thinking technique** solutions like showing sugical information videos, welcome kit, Happy wall with patients happy experiences on a sticky note, etc. were implemented. Percentage of patients who were anxious before surgery fell to **38%.** Overall inpatient satisfaction: initially 93%, now **98%.** Average anxiety level of patients on a scale of 0-10 (0 being lowest and 10 highest) was initially **6.3**, &post implementation phase: **2.6.**

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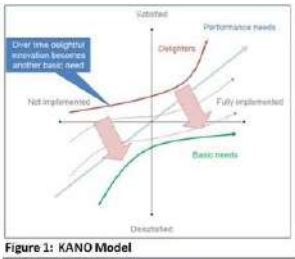

Figure 1: KANO Model

Figure 2: Design thinking process

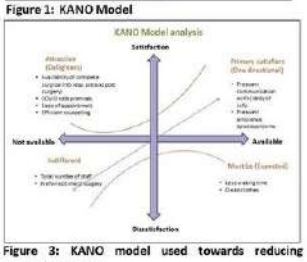

Figure 3: KANO model used towards reducing inpatient anxiety

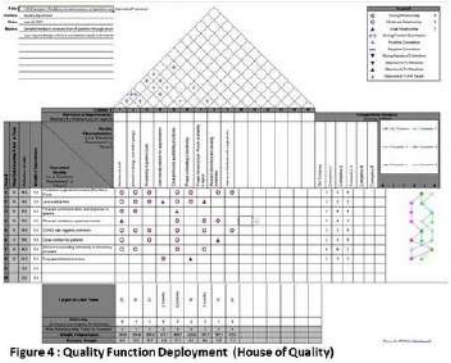
Figure 4 : Quality Function Deployment (House of Quality)

Conclusion: While healthcare organisations continue to ideate on ways to reduce anxiety, in an organisation like ours, to prioritize amidst resource constraints, the KANO model helps us understand what areas to focus on. Design thinking as a low cost prototype helps in enabling receive quick feedback on potential solutions.

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ISQUA2023-ABS-3085

ACCESS AND AFFORDABILITY OF HEALTHCARE FOR AUSTRALIANS LIVING WITH CHRONIC DISEASE: THE HEALTH OF UNIVERSAL COVERAGE

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Introduction: Australia describes its health system as providing universal health coverage through Medicare. According to the WHO, universal health coverage means that there is equitable access to high quality care when needed and without causing financial stress for patients and families [1]. The Australian Health Consumer Sentiment Survey (AHCSS) undertaken in December 2018, showed that Australians living with chronic conditions were significantly more likely to skip doses of medication or not fill prescriptions, miss appointments with doctors, and dentists because of cost [2]. Our objective was to compare results from 2018 with the most recent AHCSS undertaken in 2021 during the COVID-19 pandemic. People with chronic conditions were our focus due to their high healthcare needs.

Methods: Working together, the Consumers Health Forum of Australia, the Australian Institute of Health Innovation, and the NHMRC Partnership Centre for Health System Sustainability, co-designed the AHCCS. The survey, supported by the Commonwealth Department of Health and the Australian Commission on Safety and Quality in Heath Care, was undertaken in December 2018 (N=1024; 18-88 years) and again in October 2021 (N=5100, 18– 92 years). The samples were randomly selected from the general Australian population and were representative by age group, gender, and geographical location. A person was deemed to have a chronic condition if they had one or more of the following: arthritis, asthma, back pain or back problems, cancers, cardiovascular disease, diabetes, kidney disease, pulmonary disease, mental disorders, osteoporosis, or another long term-condition lasting or expected to last over 6 months.

Results: In both years the proportion of respondents with at least one chronic condition was 59%. Although access through digital modalities increased significantly (47% in 2021, 12% in 2018; $P<0.01$), accessing care in the evening or on weekends was significantly more difficult in 2021 (34% in 2021; 24% in 2018; $P<0.05$), and even more difficult for people with chronic conditions (36% in 2021; 28% in 2018; $p<0.05$). People with chronic conditions were also significantly more likely to say they could not pay for needed healthcare or medicine in the last 12 months (2018: 14% vs 3%, $P<0.05$; 2021 8% vs 3%, $P<0.05$). Almost a quarter of respondents in both years reported not filling a prescription or skipping doses of medicine

and in approximately 50% the reason given was: "…*because I could not afford it*…". Of people who did not visit a doctor when they needed to, approximately 12% in both years said they could not afford it. In both years, over 30% of respondents with chronic conditions felt that they would not be able to afford needed healthcare if they were to become seriously ill.

Conclusion: Results from the AHCSS (2018 and 2021) suggest that healthcare access and affordability continues to be a concern especially for Australians with chronic conditions have even greater difficulties accessing and paying for care, leading to increasing out-of-pocket costs. With funding reforms currently planned to "fix" Medicare, it is imperative to repeat the AHCSS periodically to monitor impacts of policy change on health consumers.

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Workforce, Policy, and Governance

ISQUA2023-ABS-3091

FROM MATERNAL DEATH REVIEW TO QUALITY SAFE MOTHERHOOD PROGRAMMING: STRENGTHENING THE LOCAL HEALTH SYSTEM TO REDUCE MATERNAL DEATHS IN CAVITE, PHILIPPINES

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Introduction: Preventing maternal deaths has always been a challenge to the Province of Cavite, Philippines. While consistently lower than the national average, the province's maternal mortality ratio (MMR) has been erratic since early 2010s, reaching 54 per 100,000 live births in 2016. Unpredictability in this indicator kept the province on their toes and brought to surface the need to strengthen health systems to ensure quality maternal care and safe motherhood instead of just being reactive and sporadically applying interventions. The need to work on systems was even more highlighted by substantial limitations in referral mechanisms, high cases of home births, and inconsistent access to contraception, among others. To ensure application of evidence-based interventions in reducing maternal deaths, the province purposefully utilized the results of regular maternal death reviews (MDRs).

Methods: Cavite regularly conducts MDRs not just to identify the causes of maternal deaths but to also examine the health systems gaps that hinder quality safe motherhood programming and service delivery. The province systematically and purposefully reviewed the results of MDRs from 2014 to 2018 covering 229 cases to identify the most common causes of these deaths and the local health systems problems that enabled these causes of deaths to occur. The lessons generated from this review were utilized in improving health policy and systems, social and behavior change, and service delivery interventions on maternal and childcare.

Results: The analysis of MDR results showed that 69% of the reviewed maternal deaths resulted from pregnancy related complications, while 31% were post-partum related. Meanwhile, the most common contributory factors to these deaths were unplanned pregnancy, poor detection and management of high-risk pregnancy, and poor access to both basic and comprehensive emergency obstetric and newborn care. Hence, over the last five years, the province implemented various interventions, including: passage of a "no home delivery" policy, mainstreaming birth planning and pregnancy tracking, streamlining referral system, training healthcare providers from birthing facilities in essential intrapartum

and newborn care (EINC), and strengthening the capacity of referral facilities in providing comprehensive emergency obstetric and newborn care.

The interventions resulted in improved referral practices as shown by significant reduction in uncoordinated referrals, gradual increase in antenatal care visits, and improved birth planning. Pre-pandemic, the province's MMR decreased to 40 deaths per 100,000 live births, and further went down to 30 in 2020 and 18 in 2021.

Conclusion: Retrospective analysis of MDR results helps identify specific health systems gaps that enable the common causes of maternal deaths to persist. Addressing these gaps leads to strengthened safe motherhood programming and quality service delivery, leading to improvements in maternal health indicators.

To maximize the utilization of MDRs, it is essential that discussions and investigations do not only identify the causes of deaths but also examine the contributory factors to these deaths at the health systems, community, health facility, and individual levels. Moreover, MDR results should be accurately and properly documented for future retrospective analysis.

Disclosure of interest: None declared.

ISQUA2023-ABS-3104

VIETNAM NATIONAL SURVEY ON MEDICATION ERROR INCIDENT REPORTS

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Introduction: Introduction: Medication harm is the leading cause of avoidable harm, it accounts for nearly 50% of overall avoidable harm in medical care.

Objective: This study aimed to analyze medication error (ME) incidents that were submitted through the hospital incident reporting system from 2019 to 2022 at all healthcare settings in Vietnam to identify the most common errors related to medications and outline some strategies to prevent medication errors from occurring. Findings drawn from this study help provide evidence-based data for improvement on the occasion of the ceremony of World Patient Safety Day 2022, with the theme “Medication without harm”.

Methods: Design: A retrospective, cross-sectional and quantitative survey was designed to collect medication error reports from hospitals in Vietnam. Ministry of Health, Vietnam cooperated with Hung Vuong Hospital to build the incident reporting software so that we can collect medical events database from these hospitals. Medication error reports were analyzed based on the medication name, event type, description (adapted from the Vietnamese national patient safety incident reporting system).

Results: Results: Findings showed that 571 hospitals in Vietnam had implemented the incident reporting system. During the four years (from 2019 to 2022), the total number of incident reports in healthcare settings in Vietnam was 105612. Medication incidents reported was 10149 events. The most commonly cause was wrong-drug (1775 incidents). Among total errors, 1308 ‘wrong-dose errors’, 631 ‘shortage of medicine errors’, 556 ‘prescribing errors’, 552 ‘wrong-time medication errors’, 208 ‘contraindicated drug error’, 157 ‘way of using drug’, 153 ‘storage drug errors’, 74 ‘dispensing errors’ and 61 ‘administration errors’ and other causes (6141 incidents). With regard to adverse drug events, these prescribing errors (handwriting problem) account for almost 39.8% of medication errors. Data indicated that 28.9% of medication errors was due to administration errors, 19.2% related to medical diagnosis, 7.7% of dispensing errors, 4.4% of inappropriated compliance errors such as not following protocol or rules established for dispensing and prescribing medications.

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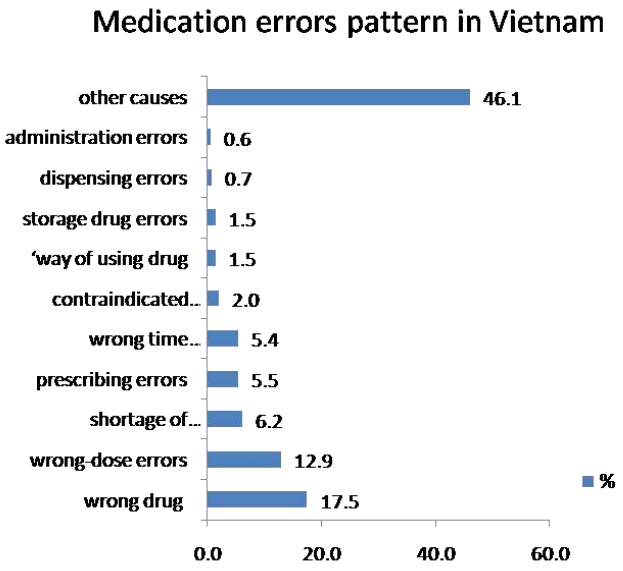

Conclusion: Medication error can happen while prescribing, administering and monitoring medicines to patients. Medication harm can be avoided by skilled health professional who are well-trained on prescription, administration and monitoring standards, with proper coordination among the clinical team, and by educating the side effects of the medication and proper way of consumption of medication to the patients. Patients must speak with a health care provider regarding to the use of medications.

Disclosure of interest: None declared.

ISQUA2023-ABS-3110

COMPARING THE EFFECTIVENESS AND COST-EFFECTIVENESS OF SELF-MANAGEMENT INTERVENTIONS IN FOUR HIGH-PRIORITY CHRONIC CONDITIONS – CONCLUSIONS OF THE COMPAR-EU PROJECT

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Introduction: Population ageing and increasing chronic illness burden have sparked interest in innovative care models. While self-management interventions (SMIs) are drawing increasing attention for its enhancement of patient centred care and potential health systema expenses savings, evidence of their efficacy is mostly based on pairwise meta-analysis, generally derived from randomised controlled trials (RCTs) comparing interventions versus a control or no intervention. As such, relevant efficacy data for comparisons among different SMIs that can be applied to specific chronic conditions is scarce. Therefore, the relevance of the available evidence for decision-making at clinical, organizational and policy levels is limited.

COMPAR-EU, a HORIZON EU project developed in the last five years, aimed to identify, compare, and rank the most effective and cost-effective SMIs for adults with four high-priority chronic conditions: type 2 diabetes, obesity, chronic obstructive pulmonary disease, and heart failure.

Methods: In the first phase of the project, we developed and validated a taxonomy of SMIs, and a Core Outcome Set for each condition, together with patients and other stakeholders. These activities informed a series of systematic reviews and network meta-analysis about the effectiveness of SMIs. We also performed a cost-effectiveness analysis of the most effective SMIs, and a contextual factors evaluation. We finally developed online decision-making tools for each condition tailored to a range of relevant stakeholders.

Results: After analysing 1,679 RCTs, the COMPAR-EU project confirmed that SMIs overall have a positive impact on patients' outcomes, compared to usual care. Furthermore, we have identified the most effective SMIs for type 2 diabetes, obesity, chronic obstructive pulmonary disease, and heart failure and we have analysed whether these interventions are cost-effective in different contexts (modelled for different timelines and in a selection of European countries), and identified the most relevant contextual factors. Based on these results we have developed summaries of findings, evidence to decision frameworks, recommendations, patient decision aids and other products for each specific analysis which are included in a platform in public domain (www.self-managment.eu).

Image:

Conclusion: Self-management interventions prove to be effective and can be cost-effective in specific settings. However, the identification of specific SMIs that are most effective and cost-effective would benefit from more rigorous research in SMI RCTs and an increased systematization of the field (selection of outcomes, reporting about the intervention and usual care, etc.). Plans for continuing this initiative for self-management will also be discussed in the session.

Disclosure of interest: None declared.

ISQUA2023-ABS-3113

PATIENT SAFETY MONITORING IN DUTCH HOSPITALS; PREVALENCE OF POTENTIALLY PREVENTABLE ADVERSE EVENTS IN DECEASED PATIENTS

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Introduction: Adverse events (AEs) are inseparable from the provision of healthcare. However, some AEs might be preventable and are therefore an accurate indicator for the level of patient safety. An AE is deemed preventable when the given care is below the level of expected quality for healthcare providers or systems. Insight into AEs – and especially preventable AEs – provides guidance for further development of patient safety and quality improvements. In the Netherlands, we have a history of monitoring AEs in a nationwide study every 4 years since 2004. This current research aimed to investigate the nature, severity and prevalence of (potentially preventable) adverse events in deceased patients in Dutch hospitals in 2019 and to compare these results to the previous years.

Methods: This is a retrospective record review study of a representative, random sample of patients deceased in Dutch hospitals in 2019. The records have been reviewed in a two-phase process. In the first phase records have been reviewed for triggers for adverse events by trained nurses. Records in which a trigger was identified have been thoroughly reviewed in the second phase by trained medical specialists to confirm the occurrence of an AE. In addition they assessed its nature, preventability and contribution to the patient's death.

Data were collected in a database approved for clinical data collection and all current applicable privacy legislation for research was taken into account over the course of this research. Data analysis was performed with StataMP 16.

Results: In total 2,998 records have been reviewed. Records were collected from 20 hospitals across the Netherlands and all major medical specialisms were represented. The median age of the sample was 78 years [IQR 69-85], patients had a median stay of 4 days [IQR 2-8] in hospital and it were mostly acute admissions (89.0%). Overall, in 14.6% (95% CI 13.3-16.0) of the deceased patients an adverse event had occurred. 4.2% (95% CI 3.5-5.0) of the patients experienced a potentially preventable AE and in 3.1% (95% CI 2.5-3.8%) of the patients the AE potentially contributed to the patient's death. Extrapolated to the total Dutch hospital population this relates to 1,018 potentially preventable deaths in 2019. The figures for potentially preventable events are comparable to the previous years (Figure 1). However, the total number of adverse events has significantly increased over the past years,

9.9% (95% CI 8.9-11.0) in 2015 and 14.6% (95% CI 13.3-16.0) in 2019 respectively.

The causes of AEs in 2019 were related to different elements of the clinical process. The majority of AEs were related to medication (32.0%), nursing (22.9%) and surgical interventions (21.1%). In case of preventable AEs and AEs contributing to the patient's death, the diagnostic process and surgical interventions played an important role.

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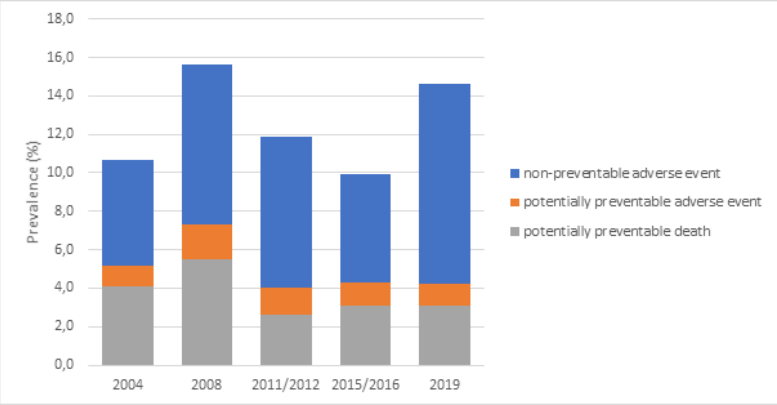

Conclusion: Over the past years the prevalence of potentially preventable AEs and AEs contributed to patient's death seem to stabilize, whereas the total number of AEs has increased. This might be due to the more complex inpatient populations and/or challenging working environments for healthcare providers. These latest insights are input for future patient safety innovations.

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Disclosure of interest: None declared.

ISQUA2023-ABS-3114

IMPACT OF INTEGRATED STRATEGIES AND IMPLEMENTATION: THE RESILIENCE OF HEALTHCARE EMPLOYEE DURING THE PANDEMIC YEAR

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Introduction: The safety of patients is closely relied on the status of the healthcare employee who provide the medical treatment. During the pandemic year, the board of directors of the hospital develop and implement a series of strategy aimed on enhance the resilience of employees, paying attention to the physical and mental health. Therefore, the implementations were launch; the overall strategy is divided into four system-integrated dimensions strategies as intervention to enhance the resilience of employees.

Methods:

1. **Four system-integrated dimensions strategies as intervention to enhance the resilience of employees.**
   - Provding the welfare such as Children's daycare, professional counseling etc, giving employees all-round support.
   - Improving employees' anticipatory responses to reduce stress when facing anxious family members of patients.
   - Mutul support among teams. The effective implementation of TeamSTEPPS can increase the centripetal force of teamwork, the ability to coordinate and support each other, reducing the chance of emotional exhaustion and burn-out.
   - Support, positive attitude, and understanding provided by the superior. Safety-Walk-Rounds every three months to understand the potential risks and difficulties encountered by in employees daily clinical work.
2. **Questionnaire:** The resilience of employees was assessed by Patient safety culture score to measure the 8 dimensions of the patient safety culture, during pandemic year from 2020 to 2021. The survey received 2700 respondents including physicians, nurses, and non-clinical staff. The questionnaires were evaluated for descriptive statistics, repeated analysis of variance by using SPSS 25.0 statistical analysis software.

Results: After various implementations were conducted in year of 2020, the result showed that the score of the resilience dimension in the year of 2021 was statistically significantly higher than the 2020, represented by 29.06% rose to 30.60 %. Emergency and critical care departments such as: intensive care unit, emergency department, anesthesiology department, and obstetrics have higher score than peer department; among them; the

emergency department had excellent performance in terms of resilience dimension, rising from 19.27% to 49.59%, showing effectiveness of continuous promotion of *TeamSTEPPS* in the past decade.

Conclusion: Enhance the resilience of healthcare employee requires integrated strategy, good welfare are minimal requirement, the support from every member in the system can sufficiently enhance the resilience of employees; when employees have a good physical and mental status, and then patient safety can be improved.

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Disclosure of interest: None declared.

ISQUA2023-ABS-3115

TRANSFORMATIONAL LEADERSHIP AND SOCIAL CAPITAL AS LONG-TERM DETERMINANTS OF PATIENT SAFETY: A PARSONIAN APPROACH

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Introduction: Health and safety, especially patient safety, are central concerns in healthcare. In the past, researchers concentrated on special measures to promote safety. Fewer studies focused on general prerequisites of safety management. Drawing on Parson's adaptation (A), goal attainment (G), integration (I), and latent pattern maintenance (L) (AGIL) -scheme, we argue that safety management needs two components to succeed: an integrated group (I-factor) and leaders with goals and the ability to align the group to these goals (G-factor). Both factors together form the GI-factor.

Methods: Based on a 2008 survey of medical directors of German hospitals (N=551). We administered a social capital scale (proxy for integration) and a transformational leadership scale (proxy for goal attainment). Via median-splits, we created three groups with low (G&I low), medium (G low/I high and vice versa) and high (G&I high) GI-factor. Survey data were aligned with 2012-2019 quality reports in a longitudinal study to test if hospitals with a low GI-factor had more patient safety abnormalities.

Results: A high GI-factor was associated with significantly lower quality defects, lagging by several years. A consistently significant correlation with reported quality deficiencies in inpatient German health care was evident from 2016 onward. This trend persisted when controlled for other organizational characteristics.

Conclusion: Apparently, healthcare organizations have to meet two conditions to build up long-term patient safety: (1) goal setting and attaining, and (2) social integration. It is important for hospital managers to sustainably ensure better health care by building up the social infrastructure for health and safety.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-3121

PREVENTIVE RESILIENCE: THE ROLE OF THE AGENCY CAPACITY OF LONG-TERM CARE ORGANIZATIONS

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Introduction: The COVID-19 pandemic has strained health care organizations (HCO) such as long-term care organizations (LTCO) and placed new demands on them, in addition to the old chronic demands. The resilience of HCO depends in part on their ability to cope with these demands, in order to diminish them directly in a preventive manner. In particular, COVID-19 has been a great resilience test for long-term care facilities and their leaders. The hypothesis of this analysis is that this preventive resilience is fostered in part by the general ability of a LTCO to act and react collectively as a social system, which is the agency capacity of an LTCO.

Methods: We conducted a pooled cross-sectional study on long-term care organizations in Germany during the first and second wave of the pandemic (April 2020 and December 2020–January 2021). The sample consisted of 503 (first wave) and 294 leaders (second wave) of long-term care organizations. The top managers of these nursing facilities were asked to report their perceptions of the agency capacity of the LTCO, measured by the AGIL scale, and the extent to which the facility is confronted with general non-pandemic demands and pandemic-specific demands.

Results: This study found that the demands nursing homes are confronted with have increased from survey cycle one to two. In particular, the general demands increased quite dramatically, along with the pandemic-specific demands. Interestingly, the agency capacity, measured by the AGIL scale, did not decline but increased between survey cycle 1 and 2. The results of the regression analysis showed a significant association between the AGIL scale and perceived general demands during SARS-COV-2 pandemic. This association did not differ between the first and second survey cycle. This indicates that the association was quite stable over the course of the two first waves of the pandemic. Additionally, the regression results showed a non-significant association between AGIL and pandemic-specific demands. This association also did not differ between the first and second survey cycle.

Conclusion: The results tentatively support the idea that fostering the agency capacity of

nursing facilities increases the ability to cope with known chronic demands in times of extraordinary stress. LTCOs have had to face two challenges during the COVID-19 pandemic: coping with the pandemic stress and coping with normal non-pandemic organizational stress. Our hypothesis was that high AGIL capacity (agency capacity) enables long-term care organizations to fight the non-pandemic organizational stress as well as the pandemic-specific strain. Our study delivered mixed results with regard to these two hypotheses. We obtained empirical support for the hypothesis that AGIL capacity reduces chronic organizational demands. We obtained no empirical support for the hypothesis that functional capacity reduces acute pandemic-specific organizational strain. Because of the constraints of this study, these results are preliminary results, more hypothesis generating than hypothesis testing. The results show that nursing managers could do a better job if they also focus their attention on the social basis of collective problem-solving management. Installing structures and processes that enable flexibility, adaptability and efficacy (A), goal setting and attainment (G), social integration (I), and knowledge and value transfer (L) is a necessity for coping successfully with chronic organizational strain. It seems not as helpful in the case of acute organizational strain, such pandemic-specific demands.

Disclosure of interest: None declared.

ISQUA2023-ABS-3127

INCREASING CLIENTS ACCESS TO ANTIRETROVIRAL MEDICATION FOR PEOPLE LIVING WITH HIV – EARLY LESSONS ON THE IMPLEMENTATION OF THE AUTOMATED MEDICATION DISPENSING SYSTEM IN ESWATINI

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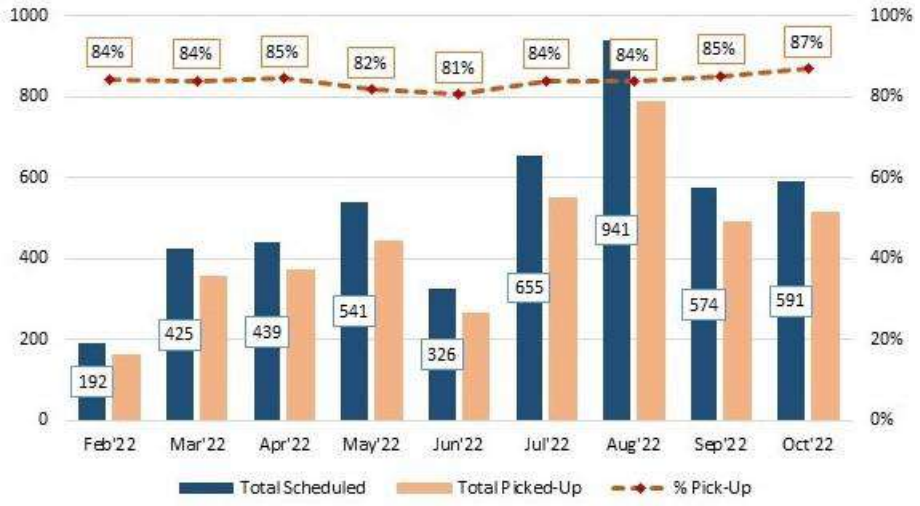
Introduction: Eswatini is one of only two countries to achieve the UNAIDS 95-95-95 HIV targets. While the HIV prevalence remains high at 27% in adults, the overall incidence has declined to 1.4%. Sustaining these remarkable gains in the face of disruptions to the health system such as the SARS-COV-2 pandemic and civil unrests requires innovative approaches to service delivery to reach all population groups, especially the marginalized and vulnerable at-risk populations. We share early lessons from the implementation of an automated medication dispensing system (AMDS) in Eswatini, called LulaMeds™, as an approach to increase access to anti-retroviral medication for people living with HIV.

Methods: Through collaborative stakeholder engagement, LulaMeds™ was installed at four major health facilities in two regions of Eswatini – Lubombo and Manzini. Clients adhering well on treatment and virally suppressed were enrolled by trained healthcare workers were offered the option to access their medications from the system. Implementation commenced initially with HIV clients but will later incorporate other services, and feedback about the system is obtained from clients. Descriptive methods are used to present preliminary findings from the implementation of LulaMeds™.

Results: Between February to October 2022 a total of 2,797 adult clients on ARV treatment had been successfully enrolled. The majority of those who picked up parcels were women (64.8%, N=1262), aged between 35 – 49 years (59%, N=1161), and on a dolutegravir-based regimen (97.1%, N=1861). Of the 4,684 medication parcels that were expected for pick up from LulaMeds™, 3,937 parcels (84%) were picked up. Of the collected medications, 46% were dispensed for 3–5 months while 35% collected medications dispensed for 6+ months. All parcels not picked up from the cabinets (n=747, 16%) were subsequently collected at the dispensary. A sample of 33 clients who used the system indicates that 24 (72%) stated the system is very easy to use, 22 (67%) liked the system while 15 (45%) liked the convenience of being able to pick up their medication anytime.

Image:



Conclusion: Preliminary data suggests acceptability of LulaMeds™ to clients on ART in Eswatini. Data from this ongoing study is expected to inform recommendations on the feasibility and scale-up of these systems as part of a continuum of care for PLHIV in Eswatini. These systems also have the potential to be used for other medications such as non-communicable disease (NCD) medications, thus strengthening overall service delivery.

Disclosure of interest: None declared.

ISQUA2023-ABS-3129

IMPLEMENTATION OF QUALITY MANAGEMENT IN REHABILITATION AND GERIATRICS DEPARTMENT AT UNIVERSITY HOSPITAL OF GENEVA (SWITZERLAND)

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Introduction: Objectives: Hospitals are faced with an increasing production of national reports on many quality indicators. The challenge for hospitals is to use them for continuous quality improvement by the frontline. In 2018, we developed a dynamic clinical indicators dashboard (ID). The use of quality indicators in management involves their dissemination to employees, an analysis of the results and the implementation of improvement actions.

Goals: Implementation of an operational concept of quality management involving the frontline in interprofessional team at a huge department.

Methods:

Step 1: conceptualization of the process: The dynamics rest on the appropriation of the results by all the collaborators through a display of indicator report (graphics). The analysis of the results is done by persons designated according to the indicator (Nurse Manager (NM), referent nurse, doctor…). Each month, these results are discussed during a 15-20 minute session in an interprofessional team and, if necessary, improvement actions are identified. This update is planned and led by NM. A summary document relating the session is then displayed next graphics.
Step 2: Design of the report and automation from the ID
Step 3: Training of managers in the technical use of the ID and in the analysis of indicators
Step 4: pilot launch in January 2019 in one units
Step 5: Spread the programme in 2020 in all rehabilitation and geriatric department (include 6 services and 35 units with 20 average bed in each units).

Results:

1. Impact on process and results indicators: We highlight better control of the processes by reducing variability and improving detection rates for the risk of pressure ulcers (Braden scale), fall and pain on admission as well as all patients stay.

We also decrease nosocomial unit pressure ulcer rate by 37% (Table 1)

2. Implementation of improvement actions
3. Team dynamics: The display of the results, their analysis and the discussions during the monthly team meetings allow: A-Improved communication. B- Better knowledge of the resources available. C- Search for practical and concrete solutions. D- Visibility of the impact of improvement actions: strengthening of involvement and motivation of staff.
4. Sharing ideas for improvement between units, services
5. Standardization of practices within the departement by restoring meaning to the clinic
6. Enhanced collaboration and coordination with Departmental Units and Pain Network, wound specialists, infection prevention and control specialist, etc.

Image:

Table 1

Indicators	2019	2022
Detection rate risk of pressure ulcers	91.3 %	93.9 %
Nosocomial units pressure ulcer rate	5.1 %	3.2 %
Admission pain detection rate	64.5 %	80.4 %
All stay pain detection rate	66.4 %	80 %
Detection rate risk of Fall	68 %	91 %
Fall rate (1000 days / patient)	12	12

Conclusion: This structured feedback shows very encouraging results both in terms of the impact on process and result indicators, as well as on team dynamics. A generalization of the approach at the institutional level (113 care units) is ongoing at the request of the medical director and the care director who validated the approach and actively support it.

Disclosure of interest: None declared.

ISQUA2023-ABS-3137

ACCESSIBILITY ON PRIMARY HEALTH CARE SERVICES AND FACILITIES OF PHILIPPINE GOVERNMENT EMPLOYEES AND THEIR IMMEDIATE FAMILY

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Introduction: According to the World Health Organization (2018), primary health care (PHC) refers to the initial-contact, accessible, continuous, comprehensive, and coordinated care that is available and accessible at a person's time of need. It offers a range of economic benefits, particularly on its potential to improve health outcomes, health equity and the health system. Hence, this paper aims to determine the accessibility of PHC services and facilities of government employees and their immediate family, perceived contributing and inhibiting factors to access, and causes of concern for accessing PHC.

Methods: This descriptive cross-sectional study utilized the initial data gathered from the online survey. It was administered from October 20 to 24, 2022, with respondents representing 10 out of 17 regions in the country from all branches of the government with the majority coming from national government agencies and local government units offices. A total of 287 respondents were surveyed with 99% who gave their consent.

Results: A majority (70%) received health benefits from PhilHealth. 32% of employees received medical assistance benefits from their employment; percentage of permanent employees receiving benefits 1.8 times higher than those of non-permanent, and immediate family 35% less than the employees. Less than one-third of employees avail health services at least once a year and 27% have to travel longer than 30 minutes to avail health services. Majority of health services are not known to be available; with the low availability, there is even lower access to these services. Only 73.9% availed PHC services within the past year, with top 3 reasons include consultation, vaccination, and acquisition of medicines. Availability, accessibility, and affordability were the main perceived contributing factors while unavailable resources, unneeded health services, and poor past experience were the main barriers to access.

Conclusion: Government employees have low access to PHC. Availability of health services is also not known to employees, thus affecting their access. There is a limited access to PHC

for the non-permanent employees and immediate family members. Increased accessibility would require improved health seeking behavior, expanded PhilHealth coverage, and enhanced health service delivery.

Disclosure of interest: None declared.

ISQUA2023-ABS-3150

IN SORROW THOU SHALT BRING FORTH CHILDREN? IMPROVING THE AVAILABILITY OF EPIDURAL ANESTHESIA FOR WOMEN IN LABOR

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Introduction: The goal of the study was to improve the availability of epidural anesthesia for women in labor in Soroka University Medical Center, a tertiary 1100 bed medical center.

Methods: The study took place in June 2021 - December 2022. At baseline, according to national surveys, about 33% of women giving birth at Soroka were given epidural anesthesia. However, we suspected that many of these women, half of whom are Arab Bedouin, were reluctant to have epidural anesthesia for cultural and/or religious reasons. A quality improvement project was initiated, including (1) adding a component to the medical record where the women's preferences were documented; (2) an additional anesthesiologist was allocated in all shifts and during all workdays, including weekends; (3) communication between midwives and anesthesiologists was facilitated using a designated WhatsApp group; (4) A computerized report to track compliance with the administration of epidural anesthesia was developed.

Results: The rate of documentation in the designated computerized component increased from 44% in June 2021 to 93% in December 2022. The rate of administration of epidural anesthesia increased from 73% to 99%. The mean time between request for epidural anesthesia to administration in October-December 2022 was 33±31 minutes (median: 26 minutes). Time to epidural anesthesia was similar during morning, evening and night shifts (31±22, 34±30 and 35±39 mins, respectively, $p>0.05$) and between workdays and weekends (34 ± 34 mins and 32 ± 24, $p>0.05$). In a patient satisfaction survey, 90% were satisfied with the availability of anesthesia in 2022, as compared with 86% in 2021.

Conclusion: A multifaceted intervention to improve the availability of epidural anesthesia was successfully implemented. The next step planned is to explore cultural and religious barriers to epidural anesthesia during labor.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-3156

ANALYSIS OF BURNOUT DIMENSIONS AMONG NURSES IN BRAZILIAN HOSPITALS

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Introduction: The complexity of healthcare organizations recognizes that nursing work conditions directly alter factors such as the work environment, professional satisfaction, burnout syndrome, quality of care, and patient safety. For several reasons, it is currently evident the overload of work in health services, with direct impact on the dimensions included in the Maslash Burnout Inventory (MBI): emotional exhaustion, depersonalization and professional accomplishment. This study aims to demonstrate the high risk perceptions related to these dimensions for nurses in Brazilian hospitals.

Methods: The research was applied by means of the MBI in 1011 nurses, distributed among six private and public administrative institutions, with Certification for Distinction of Nursing Service by IQG, located in the states of Amazonas, Minas Gerais, Mato Grosso do Sul and Rio de Janeiro, in Brazil, in the period December 2020 and June 2021.

Results: We highlight the results of high risk for nurses in the dimensions of the MBI, being 20.57% for emotional exhaustion, 24.13% for depersonalization and 79.03% with low professional achievement. Professionals between 1 and 3 years of training are the most impacted by these feelings, representing 19.56% for emotional exhaustion, 23.14% for depersonalization and 74.66% for low professional accomplishment. Regarding the position, in the dimension of emotional exhaustion, 20.00% are administrative, 17.77% are assistance and 18.42% are management; in the dimension of depersonalization, 17.78% are administrative and 18.20% are assistance; in the dimension about low professional accomplishment, 93.33% of the administrative professionals and 69.52% are assistance. The most challenging work area is urgent and emergency care (24.83% for emotional exhaustion; 30.16% in depersonalization; 81.44% with low professional accomplishment). Professionals who work in the administrative area and pediatric/neonatal intensive care have low professional fulfillment, 85.33% and 90.00%, respectively. Having more than one job shows high risk of emotional exhaustion (18.91%) and depersonalization (21.53%) for nurses.

Conclusion: Paying attention to the work environment and work overload is a way to develop patient safety in a healthcare organization, because it raises nurses' feelings on the

assistance result of their professional performance, valuing it and decreasing the risk of burnout syndrome diagnosis. Critical sectors of the organizations should be monitored with more intensity because they are characterized as more stressful environments, increasing the risks to the professionals, such as urgency and emergency and pediatric/neonatal intensive care.

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ISQUA2023-ABS-3169

DISENTANGLING VARIATION IN QUALITY OF CARE: A SYSTEMATIC REVIEW

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Introduction: Much effort is being put in mitigating unwarranted variation in quality of care. Many interventions are aimed at hospital level, without knowing how much variation can be attributed at that level. Appropriately targeting these efforts requires information about the 'level' (e.g., patient, physician, hospital) to which observed variation can be attributed. This study aims to synthesize the results of quantitative studies analyzing variation in quality indicators at multiple levels, with the emphasis on studies that provide an estimate of between-hospital variation.

Methods: Embase, Medline, Web of Science, Cochrane, and Google Scholar were systematically searched from January 2010-February 2022. We included studies that reported a measure of level-specific variation in quality relative to total variation, like an intraclass correlation coefficient (ICC).

Results: Of 5360 studies reviewed, 28 studies met the inclusion criteria. Across included studies, casemix-adjusted variation was studied for multiple diseases using 88 indicators in total. Major disease categories were cardiovascular disease (N=21 indicators), hip/knee surgery (N=17), infections (N=11), and malignancies (N=8). Analyzed indicators pertained to intermediate clinical outcomes (N=49), final clinical outcomes (N=20), processes of care (N=6), patient-reported experiences (N=9) and patient-reported outcomes (N=3). All studies reported an estimate of between-hospital variation (N= 88 indicators), with 5 studies also analyzing variation at the physician-level (N=32 indicators). Variation that could be partitioned to provider levels was highest for process-indicators (mean ICC=25%; range across indicators 3%-73%), followed by intermediate clinical outcome indicators (mean ICC=4.9%; range across indicators 0.09%-39.7%). Variation that could be partitioned to hospitals (mean ICC=5.3%, range across indicators 0%-73%) was generally higher compared to variation partitioned to physicians (mean ICC=2.7%, range across indicators 0.1%-12.7%).

Conclusion: Although variation in quality indicators could often be attributed to the hospital or physician level to a significant degree, for both levels the proportion is often small relative to residual (patient-level) variation. All included studies adjusted for patient characteristics to some degree, most variation remained unexplained due to unobserved

factors, probably this is at patient level. Variation reduction strategies aimed at care providers will only be effective if there is sufficient variation at that level, after adequate adjustment for patient characteristics. This is more often the case for indicators that can be influenced, i.e. process indicators.

Disclosure of interest: None declared.

Workforce, Policy, and Governance

ISQUA2023-ABS-3170

NON-ROTATING SHIFT SYSTEMS FOR SAFETY PERSONNEL

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Introduction: Shiftwork is the major feature of today's working life across a broad range of occupations. Shiftwork is designed to make use of all 24 hours of each day in order to provide service to be available 24 hour per day, 7 days per week. The objective of this study is to evaluate security and protective services employees working in non-rotating shift systems of 8- hour and 12-hour schedules.

Methods: The security staff and police officers from Public Safety Department of New Jersey Institute of Technology (NJIT) participated in this questionnaire survey study. The questionnaire survey and the study design were approved by both the Institutional Review Board (IRB) of NJIT and the chief of Public Safety Department. Participation was voluntary, and all participants were guaranteed confidentially and anonymity. The raw data from the survey were compiled using Microsoft Excel and later analyzed using a MINITAB15 Statistical Software by conducting a Tukey test.

Results: Participants are aged between 18 and 50 and are predominantly male with a percentage of 74%. The participant has an average (the standard deviation) of combined present and previous shift experience of 5.68 (SD=0.85) years. Average (the standard deviation) overtime hours per week is 9.75 (SD=9.91). Participants rated their workload between 3 (average) and 5 (extremely heavy). The ratings of workload are not significantly different between any of the groups studied.

Image:

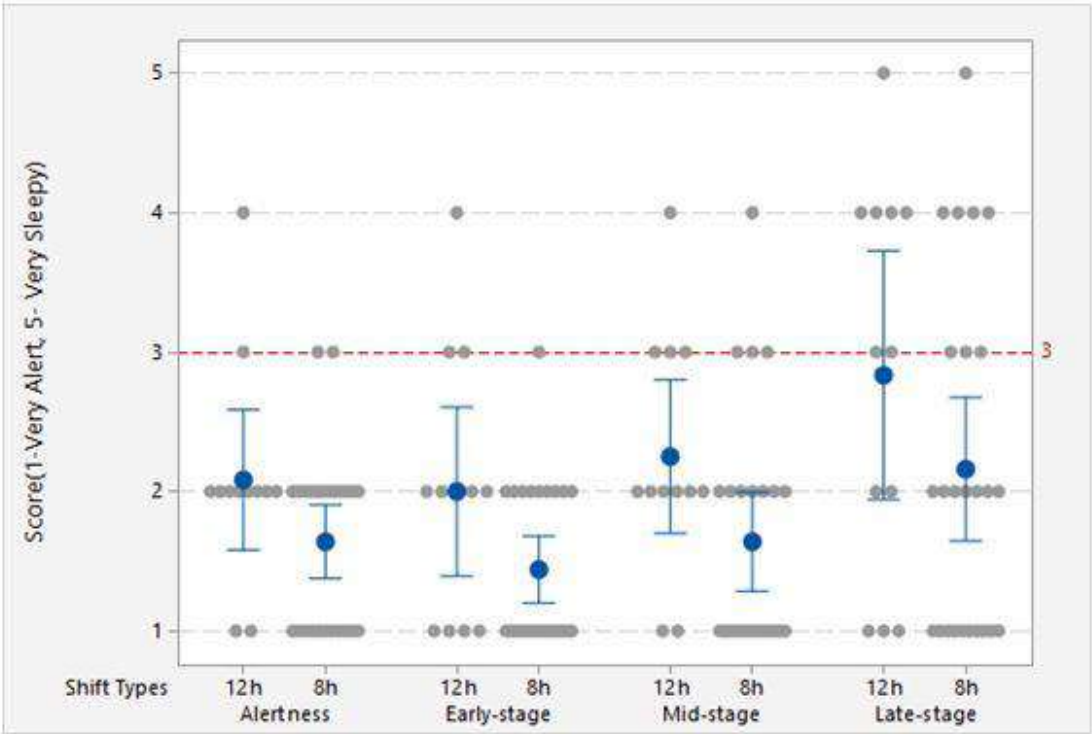

Figure 3.1 Individual Value Plot of alertness ratings in the entire shift and, early, mid-stage and late-stage of shift for 8 h and 12 h shifts with 95% CI for the mean.

Conclusion: The overall objective of this study was to evaluate non-rotating shift system outcomes, specifically; alertness, sleep and wellness outcomes of 8 h and 12 h non-rotating shift types. The results of the study strongly support that decreasing level of alertness, and increasing sleep and health problems are associated with 12 h shift. These findings are similar to those of previous researchers highlighting the negative effects of 12 h rotating shift on workers (Wilson and Rose, 1978; Tepas, 1985; Takahashi et al., 2008).

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Disclosure of interest: None declared.

ISQUA2023-ABS-3173

IMPLICATION OF LEAN KANBAN PULL METHODOLOGY FOR IMPROVING PATIENT EXPERIENCE, QUALITY OF CARE AND REDUCING WASTE OF APPOINTMENTS IN DIABETES CLINICS

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Introduction: Booking in the Chronic Illness Clinic for Diabetic patients was based on the nearest available appointment for new patients. The follow-up patient was scheduled after 3-6 months, according to the hba1c control. The time for the visit was 20 minutes for all patients.
Patients who miss their appointments and come to reschedule another- which is usually given as the nearest available appointment- overwhelm the appointment system, affecting the availability of appointments for all patients. The result was poor control of patients' diabetes (hba1c>9 to 21% in (January 2021), awful patient experience and waste of resources.

Poorly controlled patients may need more time in the clinic to probe their problems. Unifying the clinic time to all patients, regardless of their individual needs, is inappropriate.

Methods: The Methodology used is the lean Kanban Pull system to initiate the appointments monthly, depending on the estimated need, and allocate different appointment duration according to their latest hba1c. The appointments will be created according to the estimated total hours needed monthly.

Start using a new database registry for the CIC and change the appointment system, allowing us to allocate more visit time to uncontrolled patients (Hba1c>9) to 30 minutes, on the other hand, reducing the time allocated for well-controlled patients (hba1c<7) to be 10 minutes for each. This was done parallel to other interventions aiming to improve the overall patient experience and proper use of appointment time.

Results: Attendance at the CIC clinic improved from 68% to 85%. Appointment slots increased from 7% to 40% in May 2022.45% of patients who have hba1c above nine and are given 30 minutes appointments had their Hba1c reduced to below 9 with an average reduction of hba1c of 3% over the last year. Patients with Hba1c<7 have not been affected by the reduction of their clinic time to 10 minutes; instead, there was a reduction of average Hba1c from 6.6% to 6.2% (6% improvement) over the past year. The overall uncontrolled Hba1c>9 per cent has been reduced from 21% in January 2021 to 11.8% in September 2022.

The patient satisfaction survey has 88.8% positive satisfaction feedback.

Conclusion: Improving the appointment system through the Lean Kanban pull methodology has markedly improved the overall quality of care and patient satisfaction and reduced appointment waste in diabetes clinics, recommending implementing it on a broader scale and different chronic illnesses managed on an OPD basis.

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ISQUA2023-ABS-3179

SAFETY CULTURE: THE IMPORTANCE OF HARMONIOUS, ROBUST AND BRIEF MEASUREMENT

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Introduction: Safety culture is increasingly recognized as a basis for the delivery of safe and high-quality care [1]. The importance of having a positive safety culture in healthcare is widely accepted in the literature and represented in accreditation and regulatory standards. [2] Accordingly, the need for robust assessment of safety culture has become evident and survey tools have proliferated [3]. A recent literature review identified 88 different safety culture surveys [3], with concern being raised by the OECD that enthusiasm for developing safety culture surveys may have outpaced the development and utilisation of appropriate tools [4]. Further, obtaining sufficiently high response rates of safety culture surveys has become increasingly challenging, with the complexity and length of the survey identified as two contributing factors to low response [5]. Building on previous work by the Australian Commission for Safety and Quality in Health Care (ACSQHC) and other international initiatives to promote harmonization in the evaluation of safety culture [4], the aim of this project was to develop and validate a short question set, covering core domains of safety culture, and designed for use as a "temperature check" of safety culture across Australian hospitals and internationally.

Methods: We first conducted a secondary analysis of previously collected survey data on the A-HSOPS 2.0 from nine Australian hospitals. Using this data, we reduced the data set to six items, using the following strategy: (i) elimination of redundant and poorest fitting items from confirmatory factor analysis, (ii) ensuring coverage across priority areas identified by the ACSQHC's expert advisory groups (EAG); and (iii) ensuring items had applicability for both clinical and non-clinical staff. A literature review of short surveys of safety culture was also conducted, evaluating the utility of these surveys in terms of reported psychometric properties, ease of completion by hospital staff, and for coverage of the priority areas.

Results: Our secondary analysis of psychometric properties of the A-HSOPS 2.0 led to a reduced six-items. Moreover, these items cover many of the priority dimensions identified by the EAG for measurement of patient safety culture in Australian hospitals. Through targeted literature searching, we also identified two additional items that have been recurrently used to evaluate patient safety culture in very brief measures. Finally, we made some minor amendments to the terminology and response options some items, in

discussion with the EAG.

Conclusion: From the work conducted thus far, we have developed a short eight-item safety culture survey. The next stage will be to validate the short survey in a sample of Australian hospitals, with data due to be collected in 2023. The overarching objective is for the final validated short survey to be consistently included in hospitals' annual organisational surveys, as a 'temperature check' of core aspects of patient safety culture. A harmonious, robust and brief safety culture measure, combined with patient safety indicators and other outcome/process measures, will increase our understanding of the overall "health" of our hospital systems.

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ISQUA2023-ABS-3183

DEVELOPING NATIONAL ROADMAP TO IMPROVE HEALTH SYSTEM QUALITY MANAGEMENT IN ARMENIA

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Introduction: In 2021, the Government of the Republic of Armenia (RoA) proposes to commence health reform to facilitate the attainment of Universal Health Coverage (UHC). This reform aims to ensure the provision of essential services at an affordable price, protect households from catastrophic health spending, and improve the efficiency of health spending and the quality of healthcare services. To achieve and support this national goal of Armenia, the Health Insurance Review & Assessment Service (HIRA) in Korea evaluated the current state of quality management programs in Armenia and provided recommendations and the way forward to improve the quality of care at the national level by developing an operational roadmap for the measurement and evaluation of the quality of care in Armenia.

Methods: First of all, data collection, analysis, and comprehensive review were conducted through a desk review of relevant policy documents, academic papers, and statistical data on the Armenian healthcare system. Then, the HIRA team consulted a wide range of the key stakeholders involved in the decision-making to improve the quality of care including the government, academia, and stakeholders. Given the unprecedented COVID-19 pandemic, the inception workshop and the field studies were virtually held to investigate the current status, challenges, opportunities, and the way forward to derive an operational roadmap to provide quality healthcare services throughout Armenia.

Results: In order to improve patient safety and quality of care, it is important to promote quality improvement activities in hospitals. We suggest introducing an administrative or financial incentive system rather than a punishment or disincentives based on the quality measurements to bring such cultures of quality. In addition, the results on quality of care should be disclosed to the public to ensure the patient's right to know, to the healthcare providers to identify the current state and problems, and to the government to make data-driven policies and contracts with hospitals. The quality measurement project provided involves a year-long preparation period during which the necessary infrastructure is built, and thereafter it will be implemented in stages: Preparation stage (1 year); pilot program stage (2 years); stable stage (2 years); and expansion stage (thereafter).

Conclusion: Before conducting a measurement of Quality of Care, it is essential to develop the standards for each item and review the applicability of developed standards through pilot evaluation. Then a detailed plan for a longer period for the confirmed items and the mid-to-long-term plan in a step-by-step approach needs to be provided to achieve the highest possible quality and safety of care. The initial measurement of quality of care is to be conducted as a pilot program for the first year in order to build a foundation for improving the quality of hospitals, identify quality problems, and establish baselines to achieve quality improvement objectives. The next step for the second and third years focuses on stabilizing the overall measurement process by supplementing the problems identified in the pilot stage, increasing the number of healthcare providers subject to measurement, and expanding the scope and items of quality of care on annual basis. Then, the focus during the expansion period for the Year 4-5 will be on increasing the target hospitals for quality measurement, broadening quality domains, supporting quality improvement activities of hospitals in various forms, and creating an environment to improve patient satisfaction.

Disclosure of interest: None declared.

ISQUA2023-ABS-3188

COMPARISON OF LONG-TERM OUTCOMES IN PATIENTS AFTER ACUTE MYOCARDIAL INFARCTION WITH AND WITHOUT OUT-OF-HOSPITAL CARDIAC ARREST – A NATIONWIDE-BASE STUDY

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Introduction: *Background:* Out of hospital cardiac arrest (OHCA) is one of catastrophic results of acute myocardial infarction (AMI). This study was aimed to evaluate the long-term outcome of patients, who suffered AMI complicated or uncomplicated OHCA.

Methods: This is a nationwide, propensity score-matched, case-control study included 186,112 patients who were admitted due to AMI. Propensity score matching in a ratio of 1:4 by age, sex and comorbidities was adopted. Finally, 2,798 AMI with OHCA patients and 11,192 AMI without OHCA patients were respectively enrolled in our analysis.

Results: Compared with patients who got AMI not complicated by OHCA, the patients with AMI complicated OHCA had higher mortality rate, even regarding age, gender, and presence of comorbidity, like hypertension and type 2 diabetes. AMI complicated OHCA patients had higher ratio of ventricular fibrillation (39.85% vs 0.31%, P<0.0001), lower percentage of medication therapy, lower percentage of revascularization (percutaneous coronary intervention: 29.59% vs 37.92%, P<0.0001, coronary artery bypass graft: 4.72% vs 9.68%, P<0.0001) and higher percentage of using intra-aortic balloon pump (15.62% vs 9.69%, P<0.0001). Cox regression model showed that OHCA, renal failure, and diabetes conferred 2.29-fold, 1.33-fold and 1.23-fold excess risk of long-term mortality rate. Within AMI complicated OHCA patients, the Cox regression model showed PCI, CABG, usage of any anti-platelet agent, angiotensin converting enzyme inhibitor (ACEI)/angiotensin receptor blocker (ARB), statin and beta blocker conferred 0.58-fold, 0.54-fold, 0.65-fold, 0.65-fold, 0.62-fold and 0.64-fold decreased risk of long-term mortality.

Conclusion: This study demonstrated that first AMI patients complicated OHCA have higher mortality rate than the patients without OHCA. PCI, CABG, usage of any anti-platelet, ACEI/ARB, statin and beta blocker have impact of decreased risk of long-term mortality in AMI complicated with OHCA patients.

Disclosure of interest: None declared.

Digital Health

ISQUA2023-ABS-3223

NABH DIGITAL HEALTH STANDARDS

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Introduction: COVID pandemic, advances in medical technology, government initiatives and changing consumer preferences have all led to an increased need for digitization of healthcare service delivery.

As this digitization becomes more ubiquitous, it's imperative that standardized objective measurable elements are developed to assess the maturity and service delivery levels of different healthcare institutions.

Method: Considering the unique features of Indian Healthcare delivery institutions, a novel set of standards and objective elements was sought to be prepared, which inter alia can also help improve the patient care and quality in long term. A systematic literature research was performed to identify existing digital health standards as have been drafted by health accreditation agencies in other countries (e.g US, Australia). Reference was obtained from existing and past NABH standards. Deep consultations were held with different HMIS and EMR vendors who provide these services to different hospitals in India. Further, experience was sought from users of these services in Hospitals, wherein professionals with experience in patient data and care management, and in hospital management were interviewed. Opinion was also sought from different assessors to understand the implementation considerations and from other health informatics experts.

Once drafted these standards were pilot tested in both small, mid-sized and large sized hospitals, in urban and rural settings, in different parts of India.

The objective of these standards is to measure the adoption of digital technology in providing patient care. These standards are divided into different chapters based on different clinical and non – clinical touchpoints. Further, these standards contain 180+ objective elements, which are in-turn divided as core, commitment, achievement, and excellence, to assess maturity at different levels.

Considering the fragmented nature of health delivery in India, these standards are expected to provide a quality rating for different hospitals based on their level of technology adoption. This quality rating will help reduce the information asymmetry present in Indian healthcare and help patients make an informed choice of hospitals.

These standards apply to all kinds of delivery institutions which may be of different bed capacity, ownership, service specialty or location. A heightened awareness and adoption of these standards can help India achieve the SDG 3.8 goal of Universal Health Care in an expedited manner.

NABH is committed to the cause of digital health in India particularly Ayushman Bharat Digital Mission (ABDM) which is a flagship programme of Government of India for digitizing healthcare.

Conclusion: The mission aims to provide the digital framework and infrastructure in healthcare. NABH plays crucial role in promoting the adoption of digital health solutions ensuring that hospitals and health care and contribute to the success of ABDM.

Coproduction with staff and service users

ISQUA2023-SES-1570

HOW DO HEALTH PROFESSIONALS SEE PATIENTS AND THEIR CO-PRODUCTION? THE CASE OF MATERNAL AND CHILD HEALTH (MCH) BOOK USE IN INDONESIA

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Session Description: Maternal mortality in Indonesia remains a hot issue in health care in developing countries such as Indonesia. Based on Sampling Registration System (SRS) data in 2018, around 76% of maternal deaths occur in the labor and postpartum phase with a proportion of 24% occurring during pregnancy, 36% during labor and 40% postpartum, where more than 62% of maternal and infant deaths occur in hospitals. Thus, hospitals have an additional task to reduce maternal and infant mortality through the National Program to Reduce Maternal and Infant Mortality Accreditation Standards of the Ministry of Health.

However, this task will not be carried out optimally without the support of frontline staff and especially pregnant patients. In line with the principle of co-production, pregnant patients are expected to actively participate in improving their pregnancy health by utilizing health education materials in the MCH Book. Similarly, the frontline staff in maternal care, the use of the MCH Book is a useful means of information exchange between providers.

Implementing the MCH Book in Indonesia has not yet been seen as an opportunity for patients and staff's co-production in improving patients' pregnancy outcomes, whether morbidities or mortalities. Therefore, we surveyed health professionals to capture their perspectives regarding patients' and staff co-production behaviour. Our survey found that, according to health professionals' perspectives, pregnant patients have not been actively reading the MCH book and asking questions about things that are not understood. On the other hand, health professionals also perceived that they lacked compliance to fill out MCH Book.

Session Format:

- Presentation (20 minutes)
- Discussion (25 minutes)

Target Audience: Policymakers, researchers, health professionals, senior health care managers, clinicians, counselors, and patients.

Objectives: After this session, participants will be able to:

- Understand the strategy of Indonesian maternal health strategy to improve pregnancy outcomes
- Understand how health professionals see patients' and staffs participation regarding the use of the Maternal and Child Health Book to improve pregnancy outcomes
- Understand the opportunity of co-designing the Indonesia Maternal and Child Health Book.

Research: We distributed an online questionnaire to capture health professionals' perspectives regarding MCH Book usage in Indonesia. The questionnaire included items developed from the literature regarding aspects of patients' and staff co-production behaviour. From 531 responses, we excluded incomplete answers and non-health profession responses. The final data included 484 responses from OB/GYN, general practitioners, other specialist physicians, midwives, and nurses. Descriptive analysis results were presented in a spider-web diagram.

Suitability: Our survey results indicated that MCH Book Implementation in Indonesia remains a challenge despite the huge benefits offered. Patients do not routinely use and read the MCH Book. Health professionals also lacked compliance to fill out and encourage patients to actively use and read the MCH Book.

We presented this topic at the ISQua Conference to gain insights from experts and fellow colleague worldwide on opportunities for improvement of the MCH Book materials and implementation strategies.

The peculiarity of this session is to increase the focus on SDGs efforts, provide a relaxed but serious discussion atmosphere based on maternal and child health problems and later brought to their respective countries to be discussed. The more input from various professions will be better since it is a sociological, literacy, public administration issue as well as health. This issue requires design in its implementation including digital coordination. Inputs are expected at least 24 hours after the session after the participants consider their suggestions.

Integrated Care

ISQUA2023-SES-1703

INTEGRATED CARE INITIATIVES, IMPLEMENTATION AND ITS EFFECTIVENESS – TAIWAN EXPERIENCES

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Session Description: The patient-centred integrated care model is the trend of current medical care. The Joint Commission of Taiwan implements a disease-specific care certification (DSC), develops the integrated care model, promotes hospitals to form cross-disciplinary care teams, improves patient participation and strengthens patients' self-care capabilities. There are 15 disease categories have been developed.

In this session, we will take diseases with high burden of disease such as cardiovascular disease, kidney disease and cerebrovascular accident as examples. To share the care effects of certified institutions, including the reduction of in-hospital mortality, the improvement of self-care ability and the average hospitalization rate. We aim to establish this system as a reference care model internationally.

Session Format: Presentation

Target Audience: Senior health care managers, policy makers, clinicians

Objectives:

1. Understand the establishment and implementation of an integrated care system.
2. Understand how to improve patient participation in the healthcare process.
3. Understand evidence-based integrated care outcomes.

Research:

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Suitability:

1. The presentation will share the experience of external certification to promote integrated care from the perspective of certification surveyors and institutions.
2. Presenters will share with their experiences to attest to the effectiveness of implementing integrated care.
3. The presentation took a number of common diseases in the world as examples, it provides a care model for policy makers and medical personnel to promote integrated care.

Workforce, Policy and Governance

ISQUA2023-SES-1854

APOLLO LEARNING TOGETHER ('SOMETHING TO TEACH, SOMETHING TO LEARN') – A PLATFORM FOR VITALIZING CLINICAL GOVERNANCE

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Session Description: The 'Apollo Learning Together (ALT)' is a unique online platform, that strengthens the Clinical Governance Meeting (CGM) structure across Apollo Hospitals, the largest healthcare provider in India. In order to assure high standards of clinical care and service performance, 23 Clinical Governance Committees (CGC) were established with the goal of fostering collaboration between consultants and unit leadership. ALT aims to ensure that meetings for the mandated committees are conducted insightfully, as per the defined frequency and standard format across 40 hospitals of the large hospital network.

The leadership of every hospital that is conducting a CGM requires Medical Heads from other Apollo Hospitals to virtually attend and review their meeting. This distinctive external monitoring mechanism not only helps in improving the meeting quality and regularity but also enables sharing of best practices and expertise. The ALT platform not only improved the performance of the Clinical Governance at Apollo Hospitals but also established it as a learning organization in which excellence in clinical care can flourish with improved outcomes.

Session Format: The following shall be session format:

Presentation - 25 minutes
Group work- 10 minutes
Audience interaction – 10 minutes

Target Audience: The suggested target audience is:

Policy Makers
Members of the Medical Governance
Physician Leaders
Senior Healthcare Leaders
Emerging Healthcare Leaders
Senior Healthcare Managers

Objectives: The key takeaways shall be:

1. Formulating an optimal structure for the Clinical Governance and Clinical Governance Committees for their organisation
2. Develop an insight on strategies and formats for high performing clinical governance meetings
3. Understand as to how physician engagement, shared learning and participative management is instrumental in effective Clinical Governance
4. Understand evaluation systems for Clinical Governance Committee meetings
5. Appreciate as to how strengthening clinical governance in large hospital networks nurtures and prepares the healthcare organization for improved patient outcomes, service performance and clinical excellence

Interaction with participants shall enable discussion, exchange of ideas and experience sharing with participants from healthcare systems across the world. Applying their suggestions and inputs will help to further improve the existing ALT Platform.

Research: The ALT platform was launched in the month of February 2022 in 40 hospitals of the Apollo Hospitals Group. The following is some of the data that supports the initiative:

1. The compliance to uploading the Clinical Governance Meeting Calendar on ALT dashboard increased from 8% in February 2022 to 100% in December 2022
2. The number of Clinical Governance Meetings conducted increased from 20 in February 2022 to 140 in December 2022
3. The percentage of meetings that were reviewed and evaluated increased from 10% in February 2022 to 95% in December 2022
4. The impact of improvement in the functioning of Clinical Governance was evident through the two clinical outcomes dashboards of Apollo Hospitals, ACE 1 (Apollo Clinical Excellence 1) and ACE 2 (Apollo Clinical Excellence 2).

The ACE 1 scores increased from 88 in 2021 (baseline year) to 91 in 2022 (year of implementation of ALT).

The ACE 2 scores increased from 83 in 2021 (baseline year) to 88 in 2022 (year of implementation of ALT).

Complexity, Emergencies and Sustainability

ISQUA2023-SES-2356

BUILDING SUSTAINABLE CHANGE IN IMPROVEMENT OF CARE IN LOW INCOME COUNTRIES: EXPERIENCES FROM THE MOZAMBIQUE PARTNERSHIP WITH IRELAND AND PORTUGAL

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Session Description: Mozambique has faced exceptional challenges to achieve quality and safety in healthcare with resource scarcity, COVID-19 interruptions, and two devastating hurricanes over 2019-2022. The Ministry of Health has developed a sustainable model through working in partnership with the Irish Public Health Service (HSE) to co-produce quality improvement solutions in Mozambique since 2016. The partnership aims to develop sustainable quality improvement (QI) capability within the workforce.

Key findings will be presented including:

- Partnerships are based on respect and understanding of context and constraints.
- Priorities for collaboration are identified by local leads.
- For sustainability, interventions are human resource rich but financial resource light.
- Solutions are planned together with the teams on the ground who define the challenges and develop their solutions.

Session Format: Interactive workshop in which the complexities of working in LMICs can be explored with attendees so that they leave with solutions to apply in their own setting.

Running Order:

- Introduction by Chair - 5 mins
- Presentations on Mozambique programme - 30 mins
- Facilitated workshop with participants - 45 min
- Summary and concluding remarks - 10 mins.

Target Audience: The workshop is aimed at healthcare workers, health care managers, and people implementing WHO strategies on Universal Health Coverage (UHC), QI and Patient Safety

Objectives: After this session, participants will be able to:

1. Identify the challenges for developing a QI and Patient Safety programme in Low and Middle Income Countries.
2. Develop a framework for co-production of solutions for a QI programme intervention.
3. Know how to translate the theories of QI and Patient Safety into action, particularly in a low resource context.
4. Integrate the learning into an actionable and sustainable programme.

Research: At the workshop we will present the programme and describe some of the successes over the past few years in hospitals across Mozambique.

One example we will present is the decrease in the mortality rate at the Medical Ward at a central hospital in Maputo over the past 6 years. In the first part of the programme 2017-2019, the aim was to decrease number of deaths within 24 hours of admission. This reduced from 58 deaths in 2017 to 8 deaths in 2019. Once there had been a significant decrease in the number of deaths within 24 hours of admission, the focus moved to decrease the number of deaths within the first 48 hours, to ensure that patients were not dying in the next 24 hours and that there was a real improvement. Data from 2020 to 2022 will be presented which demonstrates this stretch goal and the improvement in decreasing mortality in the first 48 hours of admission.

Suitability: This session presents an approach to improving quality and safety in LMICs in the face of COVID-19 and other health systems challenges. It also reflects the post COVID experience and the need to build resilience in health systems to gain improvement.

The session highlights the value of a partnership approach between countries. We believe that this is a unique collaboration between three countries – Mozambique, Ireland and Portugal (who joined in 2021) to develop sustainable change to improve quality and safety. The focus is on coproducing solutions and building capacity rather than providing aid resulting in dependency.

This session explores key factors for sustainable quality improvement programmes, based on capacity building of multidisciplinary teams working at the frontline of healthcare.

The presentation will demonstrate how the Global South can benefit from a partnership with the Global North with learning both ways and ongoing development of improvement despite low resources.

Additional lessons include:

- Improvement Science and Patient Safety methodologies can be adapted while remaining faithful to the theory. The complexity and messiness of change must always be considered and be openly managed.
- Another key feature is how to provide long-term technical cooperation for sustainable change in quality and safety of care by responding to the needs of the people on the ground and adapting to the local context. The Ministry of Health plays a vital leadership role in establishing partnership relationships and ensuring

alignment with country needs and priorities.

- The three way partnership will be evident in the presentation process
- Real improvements in patient outcomes will be presented
- The challenge of sustainability will be explored.

Coproduction with Staff and Service Users

ISQUA2023-SES-2980

LESSONS LEARNED FROM IMPLEMENTATION OF A PATIENT ENGAGEMENT FRAMEWORK IN THE PRIMARY HEALTHCARE SYSTEM IN QATAR

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Session Description: The session describes a formal patient engagement framework developed and fully implemented in the primary healthcare system in Qatar. The need for the framework and for generating evidence of the effects of its implementation were prompted by the intent of PHCC to maintain accreditation of the primary health care centers by Accreditation Canada. The patient engagement framework concentrates on involving patients in our healthcare delivery system for making contributions to how our health centers deliver primary care services. Several examples of evidence of the effects of implementation of the framework are described in the session. Lessons learned are summarized in terms of key success factors of what was achieved along what need to further strengthen in the framework in order enhance patients and families experience at all levels of health care delivery.

Session Format: The 60-minute session shall include:

- 40-minute presentation
- 20-minute Question and Answer session.

Target Audience: Senior health care managers, policy makers, clinicians, patients.

Objectives: - Understand the key elements of the patient engagement framework in primary care

- Appreciate the key success factors for patient engagement framework implementation
- Share the lessons learned from the implementation of patient engagement framework in Primary care.

Research: The main driver for the Patient engagement framework and for generating evidence of the effects of its implementation were prompted by the intent of PHCC to maintain accreditation of the primary health care centers by Accreditation Canada. The recent version of Accreditation Canada Qmentum standard is heavily focused on patient

centered care and patient engagement at service and design level which required that we change our way and consider users voice in all what we do.

Suitability: - This topic is suitable for this session beacuse its fits the theme of patient centered care.

- A comprehensive framework with implementation results which will help the organsiations aiming to nurture a culture of Patient centeted care
- To draw lessons from our organisation experience.

Universal Health Coverage and Equity

ISQUA2023-SES-3024

IMPROVING CARE FOR PATIENTS WITH INTELLECTUAL DISABILITY

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Session Description: People with intellectual disability experience poorer health and challenges in accessing and receiving safe and quality health care. Recognising the significant disparities in this population, in 2018 the Ministry of Health, NSW Australia funded the creation of intellectual disability health services after the initial pilot programs demonstrated success in outcomes. Together with the Agency for Clinical Innovation Intellectual Disability Network the presentations highlight the various initiatives, evaluations and learnings from the journey. Use of co- production principles will be outlined during these presentations as well as lessons learnt in how health executives, researchers and clinicians have rallied around these children and young people working on improvements for safer and better care.

Session Format:

Presentation 1

The development of a clinical network to bring patients, clinicians, and managers together to support the design and implementation of innovation in healthcare for people with intellectual disability. (15 mins)

Since the intellectual disability health network was formed in New South Wales, Australia, within the Agency for Clinical Innovation, we have seen how coproduction has shaped the network's governance and outputs through the stages of evaluation of the network and its activity across acute, community and primary care. The clinical network focus is on intellectual disability, but the processes of coproduction and evaluation apply across many settings.

Presentation 2

The development of adapted care pathways and CPD-QI initiatives for improving care for children with intellectual disability (15 mins)

A strategy for incorporating reasonable adjustments for children with intellectual disability who have difficulty with accessing health care services was developed due to the recognition of gaps that exist in the health system affecting safety and quality of care. Using behaviour change and adult learning principles, this presentation outlines initiatives in setting up adapted care pathways and service improvement activities within a tertiary children's hospital.

Presentation 3

Pilot evaluation of resource and education package for health staff caring for inpatients with intellectual disability (15 mins)

The Specialist Intellectual Disability Health Team seeks to build capacity of health professionals to improve the care of patients with an intellectual disability. Health professionals report experiencing stress, low confidence, fear and anxiety when caring for patients with an intellectual disability and responding to behaviours of concern. Negative local inpatient experiences shared by carers and staff prompted initial discussion, followed by consultation with health stakeholders including clinician, carer and consumer representatives. A resource was developed to increase staff understanding and confidence when caring for patients with an intellectual disability. Evaluation of pilot sessions delivered with acute paediatric nurses shows an increase in self reported clinician confidence, understanding of and use of reasonable adjustments.

Presentation 4

Building capability in NSW health services for people with intellectual disability: the Essentials. (15mins)

This unique resource was launched in 2019 in New South Wales (NSW), Australia, within the Agency for Clinical Innovation. It includes a self- assessment tool to guide services in how they can deliver services inclusive of people with intellectual disability. Actions and resources were developed across nine domains: workforce, communication, data, systems, mental health, hospitalisation, integration of services both within NSW Health and external to NSW Health and specialised health services. Since then, based on feedback and collaboration with health services from across Australia, the Essentials has linked key recommended actions to national health service accreditation standards and introduced actions on workshopped themes such as virtual care, trauma informed care and co designing health services.

Target Audience: Clinicians, patients, and senior health managers

Objectives: Learning Objectives

- Understand the needs of persons with intellectual disability, the disparity in health status and outcomes compared to the normal population
- Understand reasonable adjustments and how this is achieved through the development of integrated service/ care models/ education programs
- Understand the importance of giving voice to the person with intellectual disability,

their parents, and carers to inform service development and refinement

Running the session will provide the presenters opportunity engage with the wider health service providers, researchers, and advocates to highlight the challenges that patients with intellectual disability experience in health care safety and quality; raise the profile of Australian based Intellectual Disability hubs and the Agency for Clinical Innovation Intellectual Disability network and the Sydney Children's Hospitals network of the work that has been done in accreditation, policy, research and service delivery in improving safety and quality of care for this population. There is also a need for wider advocacy for the empowerment of patients with intellectual disability, their parents and carers with developmentally appropriate ways to provide feedback reliably and authentically to inform service improvement initiatives.