Care Pathways and the Organisation of Care Processes

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EPA = Teamwork

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An overview on the history and concept of care pathways as complex interventions

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Summary
Care pathways, also known as clinical pathways, critical pathways or integrated care pathways, are used all over the world. Although they are used internationally, there are still a large number of misunderstandings. The goal of this paper is to provide an overview on the history of pathways and how pathways are actually perceived and defined. Pathways are more than just a document in the patient record. They are a concept for making patient-focused care operational and supporting the modelling of patient groups with different levels of predictability. Pathways are a method within the field of continuous quality improvement and are used in daily practice as a product in the patient record. This paper explains these different issues and provides an extensive list of references that should support pathway facilitators, clinicians, managers and policy-makers in their search for excellence.
What is **Quality of Care**?

- Six dimensions of the Institute of Medicine
  - Safety ➔ Veilig
  - Efficiency ➔ Efficiënt
  - Effectiveness ➔ Effectief
  - Timely ➔ Tijdig
  - Equity ➔ Gelijk
  - Patient Centered ➔ Patiënt Centraal
Quality

- Overuse ➔ te veel
- Underuse ➔ te weinig
- Misuse ➔ het foutieve
The Quality of Health Care Delivered to Adults in the United States

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BACKGROUND
We have little systematic information about the extent to which standard processes involved in health care — a key element of quality — are delivered in the United States.

METHODS
We telephoned a random sample of adults living in 12 metropolitan areas in the United States and asked them about selected health care experiences. We also received written consent to copy their medical records for the most recent two-year period and used this information to evaluate performance on 439 indicators of quality of care for 30 acute and chronic conditions as well as preventive care. We then constructed aggregate scores.

RESULTS
Participants received 54.9 percent (95 percent confidence interval, 54.3 to 55.5) of recommended care. We found little difference among the proportion of recommended preventive care provided (54.9 percent), the proportion of recommended acute care provided (53.5 percent), and the proportion of recommended care provided for chronic conditions (56.1 percent). Among different medical functions, adherence to the processes involved in care ranged from 52.2 percent for screening to 58.5 percent for follow-up care. Quality varied substantially according to the particular medical condition, ranging from 78.7 percent of recommended care (95 percent confidence interval, 73.3 to 84.2) for senile cataract to 10.5 percent of recommended care (95 percent confidence interval, 6.8 to 14.6) for alcohol dependence.

RAND:
- 30 condities
- 439 indicatoren
- 54.9%

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COPD study: is there room for improvement

Adherence to guideline and Delphi

Adherence usual care (%) vs. Level of agreement by experts (%)

- NOT OK
- OK
- OK?
Correlation between adherence to guidelines and level of agreement between experts
Correlation between adherence to guidelines and level of agreement between experts

Adherence to guidelines (%) vs. Level of agreement between experts (%)
Correlation between adherence to guidelines and level of agreement between experts

Adherence to guidelines (%) vs. Level of agreement between experts (%)
Correlation between adherence to guidelines and level of agreement between experts

Level of agreement between experts (%) vs. Adherence to guidelines (%)
Correlation between adherence to guidelines and level of agreement between experts

Level of agreement between experts (%) vs. Adherence to guidelines (%)
Adherence guidelines at patient level
A brief overview of the history of CP

1987: Clinical Pathways / Critical Pathways
- Link with DRG finance system
- Focus on Key – Interventions & Cost – LOS

1990’s: Integrated Care Pathways
- Link with Clinical Guidelines
- Focus on Detailed Patient Record

2004+: Care Pathways
- Link with Value
- Focus on Co-ordination & Management of care process

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Is VALUE a buzzword or not?

\[ \text{VALUE} = \frac{\text{QUALITY}}{\text{COST}} = \frac{\text{Outcomes} \times \text{Patient Experience}}{\text{Direct Costs} \times \text{Indirect Costs}} \]

\[ \text{Value} = \frac{\text{Quality}^*}{\text{Payment}^†} \]

* A composite of patient outcomes, safety, and experiences
† The cost to all purchasers of purchasing care

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**The Value Based Care Equation**

The Right Dollars to Care for the Population $+$ Optimize the Care for the Patient Population $=$ Profit/Loss of the Value Based Care Contract

- Understand the conditions and severity of the conditions of the population
- Ensure correct coding of the conditions and severity of the conditions of the population
- Ensure the payments for the conditions are adequate and appropriate to care for the population
- Identify top priorities (biggest bang for buck) for improvement resources to address.
- Design and implement improvement workgroups to decrease cost and improve patient outcomes
- How well did you understand the conditions of the population?
- How well did you optimize care for the population?

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The “elevator story” of care pathways

• Organization of care is COMPLEX and asks more than only optimal “medical” care

• We have to build TEAMS: 1) shared goals, 2) who know what to do, 3) understand each other roles, 4) know how to communicate & coordinate and 5) have respect for the available (limited) budget

• So we need some kind of MUSIC SCORE for multidisciplinary teams and have great musicians

• Care pathway projects have (at least) 3 ACTIVE COMPONENTS:
  • An overview of the available evidence based key interventions
  • A feedback report on the actual performance
  • A step by step implementation by the team

• Care Pathways can have a positive EFFECT
| Area responsible for care—may be used for tracking outcomes & patient satisfaction |
|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Patient:         | DRG#:            | Date Admit:      | Date Path Began: |
| Diagnosis:       | Targeted LOS     | Expected LOS:    | Actual LOS:      |
| Care Element     | Day 1            | Day 2            | Day 3            | Day 4            | Day 5            | Day 6            | Day 7            | Day 8            |
| Care Unit        |                  |                  |                  |                  |                  |                  |                  |                  |
| Consults         |                  |                  |                  |                  |                  |                  |                  |                  |
| Test/Labs        | m u              | Optional checklist: m=met, u=unmet |
| Treatments       | m u              |                  |                  |                  |                  |                  |                  |                  |
| Medications      |                  |                  |                  |                  |                  |                  |                  |                  |
| Assessments      |                  | Nursing responsibility |                  |                  |                  |                  |                  |                  |
| Symptom/Pain     |                  |                  |                  |                  |                  |                  |                  |                  |
| Control          |                  |                  |                  |                  |                  |                  |                  |                  |
| Activity/Safety  |                  |                  |                  |                  |                  |                  |                  |                  |
| Teaching         |                  |                  |                  |                  |                  |                  |                  |                  |
| Nutrition        |                  |                  |                  |                  |                  |                  |                  |                  |
| Discharge Planning |                |                  |                  |                  |                  |                  |                  |                  |
| Intermediate Patient Outcomes |
| Variance Code/ Comments—See Back of Pathway |
| Trending & Variance Summaries | "Milestones" |
EPA Definition Care Pathway, Part 1

A care pathway is a complex intervention for the mutual decision making and organization of care processes for a well-defined group of patients during a well-defined period.
This means ... not easy

• A complex intervention!

• They are health service interventions that are not acting as single drugs or surgical procedures but have many potential “active ingredients”.

• A complex intervention combines different components into a whole that is more than the sum of its parts.


Lower complexity  Higher complexity
EPA Definition Care Pathway, Part 2

Defining characteristics of care pathways include:

I. An explicit statement of the goals and key elements of care based on evidence, best practice, and patients’ expectations and their characteristics;

II. the facilitation of the communication among the team members and with patients and families;

III. the coordination of the care process by coordinating the roles and sequencing the activities of the multidisciplinary care team, patients and their relatives;

IV. the documentation, monitoring, and evaluation of variances and outcomes; and

V. the identification of the appropriate resources
EPA Definition Care Pathway, Part 3

The aim of a care pathway is to enhance the quality of care across the continuum by improving risk-adjusted patient outcomes, promoting patient safety, increasing patient satisfaction, and optimizing the use of resources.
Level of standardization

POLL 1: CAN BE organised

• What % of your patients can be organized via the CHAIN model?
  • Less than 10%
  • 11%-25%
  • 26%-50%
  • 51%-75%
  • 76%-90%
  • More than 90%
POLL 2: **IS organized right now**

• What % of your patients IS organized via the CHAIN model right now?
  • Less than 10%
  • 11%-25%
  • 26%-50%
  • 51%-75%
  • 76%-90%
  • More than 90%
Time for some questions!
Levels of pathways

International / National / Regional Level (not organization specific)

Local level (organization specific)

Patient level (organization & patient specific)

Model pathway (prospective)

Operational pathway (prospective)

Assigned pathway (prospective)

Completed pathway (retrospective)

Pathways as continuous quality improvement

Deming & Juran: Every improvement is done project by project and step by step …

Phase 1: Screening if pathway is appropriate tool for the situation
Phase 2: Project Management
Phase 3: Diagnose the problem (“as-is”)
Phase 4: Development of pathway
Phase 5: Implementation of pathway
Phase 6: Evaluation of pathway
Phase 7: Continuous Follow-up

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The complex intervention of pathways

While implementing “a pathway”, at least

3 active ingredients are necessary:

- Information on the latest evidence (evidence based health care)
- Feedback on the actual organization of your care process (process & outcome indicators)
- Development & implementation strategy is a change process and it takes time (teamwork, no one-man show)
E-P-A Evolution in Care Pathway Thinking

2000
- B-DCPN

2004
- E-P-A (group of friends)

2007
- CPSET
- E-P-A definition

2008
- EQCP
- E-P-A

2010
- Lean
- Team Work

2011

2014
- CP4ACS
- CP4CRC

2017
- BIC4CRC

Active components:
- Group learning
- Feedback
- IT
- Patient involvement
- EBM (individual CP)
- 30 step approach

Small sample, local OXO
- Explorative
- cRCT
- Process Evaluation, ITSD
- BIC

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Evaluating 20 years of care pathways

• «Care pathways have a tremendous appeal as a potential tool of quality improvement»

• «Hospitals leaders concluded that the competitive environment did not allow the luxury of waiting for rigorous tests of the effectiveness of care pathways»

Source: Pearson SD. 1999
The strength of evidence
Conclusions: need for stronger evidence

• «Despite the appealing logic of this approach, a healthy skepticism should remain about pathways true potential to improve quality»

Source: Pearson SD. 1999
Actual evidence on clinical and economical effectiveness of CPs
The strength of evidence

- Meta-analysis
- Systematic Reviews
- cRCT

- Experimental Studies
- Observational Studies

- Meta-Analysis, Guidelines
- Systematic Review
- Randomized Control Trial
- Cohort Studies
- Case Control Studies
- Case Series
- Case Reports
- Editorials, Opinions, and Ideas
- Animal Research
- In Vitro Research

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In brief ...

- Studies published:
  - 21 observational, no controls
  - 19 before/after
  - 12 quasi-experimental
  - 8 RCT
  - 10 (+1) cRCT
  - 7 Systematic reviews
  - 11 Metanalysis
What we actually learned...

- Model pathways
  - They are based on evidence based key interventions (the entire Medical literature!)

- Operational pathways
  - Cluster Randomized Controlled Trials:
    - Mainly significant positive impact on clinical outcomes in hospitals
    - No significant evidence of impact in out-of-hospital settings
    - No significant evidence of long lasting results after implementation
  - Metanalysis and Systematic Reviews:
    - Better outcomes (reduction in in-hospital complications, reduced length of stay)
    - Decrease in hospital costs/charges.

- Assigned/completed pathways
  - Case studies (?): 0

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Relation Care Pathways – Coordination - Outcome

Coordinating Mechanisms
- Clinical Pathways
- Case Managers
- Interdisciplinary Rounds
- Staff Focus

Control Mechanisms
- Selection
- Performance Measurement
- Rewards
- Conflict Resolution

Relational Coordination
- Communication
  - Frequent
  - Timely
  - Accurate
  - Problem Solving
- Relationships
  - Shared Goals
  - Shared Knowledge
  - Mutual Respect

Outcomes
- Quality
- Efficiency

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Clinical/Care pathway as continuous care process improvement intervention

Patient Characteristics & Expectations

Improvement Process

PLAN
DO
STUDY
ACT

Standardised Structure

Organisation of Care Process & Performance Scores

Organisation of Care Process & Performance Scores
Time for some questions!
More information

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#carepathway