

INFECTION PREVENTION AND CONTROL

PERSONAL PROTECTIVE EQUIPMENT AND ITS RATIONAL USE

COVID-19 Context (SARS-CoV-2)

Personal Protective Equipment: COVID- 19 Pandemic (SARS-CoV-2)

It is well known and publicly known that we are facing a pandemic caused by SARS-CoV-2 (COVID-19), with impacts that may never have been imagined, and that affects all world economies at the same time, and go beyond the field of public health.

The ideal way to prevent the transmission of microorganisms in a health organization, is to use a combination of interventions not only aimed at the use of personal protective equipment (PPE). Intervention actions must also combine isolation, visitation restrictions, correct hand washing, among other measures.

Hand hygiene practice is essential to prevent and control the spread of microorganisms. Health professionals, patients and visitors must be properly educated about the importance of their practice and monitored for its implementation. Routine hand washing before and after using PPE is a fundamental practice to maintain safety.

INFECTION PREVENTION AND CONTROL

Attention:

All professionals should be instructed on how to put on, use and remove all recommended PPE.

One should not circulate through the health service using PPE. These must be removed immediately after leaving the room, ward or isolation area.

Wearing masks when not indicated can generate unnecessary costs and create a false sense of security, which can lead to neglect of other safety measures, such as hand hygiene.

Recommendations for personal protective equipment, according to the type of environment, target person and type of activity:
COVID-19 Context (SARS-CoV-2)

Table 1 presents the PPE recommendations to be used for the prevention and control of the spread of SARS-CoV-2 (COVID-19) according to a publication by the Ministry of Health.

Table 1. Types of personal protective equipment recommended in the covid-19 context.

RECOMMENDED TYPES OF PERSONAL PROTECTIVE EQUIPMENT IN THE COVID-19 CONTEXT, ACCORDING TO THE TYPE OF ENVIRONMENT, TARGET PERSON AND TYPE OF ACTIVITY *			
HEALTH FACILITIES			
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TYPE OF SCENARIO	PERSONAL TARGET THE SCENARIO	TYPE OF ACTIVITY	TYPE OF PPE
Patient's room	Health professionals	Direct patient care	Surgical Mask Cloak Gloves Eye protection (goggles or face mask)
		Procedures that generate aerosols in COVID-19 patients	N95 or FFP2 Mask Cloak Gloves Eye protection Apron
	Hygiene and cleaning professionals	Entry into the COVID-19 patient room	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing organic or chemical materials) Closed work boots or shoes
	Visitors **	Entry into the COVID-19 patient room	Surgical Mask Cloak Gloves
Other areas with patient transit (patios and corridors)	All employees, including healthcare professionals	Any, not involving contact with the patient with COVID-19	No PPE required
Screening	Health professionals Preliminary screening not involving direct contact ***	Health professionals Preliminary screening not involving direct contact ***	Spatial distance of at least 1 meter No PPE required
	Patients with respiratory symptoms	Any	Spatial distance of at least 1 meter Medical mask if tolerated
	Patients without respiratory symptoms	Any	No PPE required
Laboratory	Laboratory technician	Handling of respiratory samples	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing)
Administrative areas	All employees, including healthcare professionals	Administrative tasks without contact with patients with COVID-19	No PPE required
AMBULATORY FACILITIES			

TYPE OF SCENARIO	PERSONAL TARGET THE SCENARIO	TYPE OF ACTIVITY	TYPE OF PPE
Consultation room	Health Professionals	Physical examination of patients with respiratory symptoms	Surgical Mask Cloak Heavy-duty gloves Eye protection
		Physical examination of patients without respiratory symptoms	PPE according to standard precautions
	Patients with respiratory symptoms	Any type	Surgical mask if tolerated
	Patients without respiratory symptoms	Any	No PPE required
	Hygiene and cleaning professionals	After / between consultations of patients with respiratory symptoms	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing organic or chemical materials) Closed work boots or shoes
Waiting room	Patients with respiratory symptoms	Any	Surgical mask Immediate transfer of the person to an isolation room or separate area distant from other people. If not feasible, provide a spatial distance of at least 1 meter from other patients
	Patients without respiratory symptoms	Any	No PPE required
Administrative areas	All employees, including healthcare professionals	Administrative tasks	No PPE required
Screening	Healthcare Professionals	Preliminary screening not involving direct contact ***	Spatial distance of at least 1 meter No PPE required
	Patients with respiratory symptoms	Any	Spatial distance of at least 1 meter Medical mask if tolerated
	Patients without respiratory symptoms	Any	No PPE required

COMMUNITY			
TYPE OF SCENARIO	PERSONAL TARGET THE SCENARIO	TYPE OF ACTIVITY	TYPE OF PPE
Home	Patients with respiratory symptoms	Any (except when sleeping)	Spatial distance of at least 1 meter Medical mask if tolerated
	Caregiver	When entering the patient's room, but not providing direct assistance	Surgical mask
	Caregiver	When providing direct assistance or when handling feces, urine or secretions of the patient with COVID-19	Gloves Surgical Mask Apron (if there is a risk of splashing)
	Health professionals	Direct care to patients with COVID-19	Surgical Mask Cloak Gloves Eye protection
Public areas (schools, shopping malls, stations, etc.)	Individuals without respiratory symptoms	Any	No PPE required

ENTRY POINTS			
TYPE OF SCENARIO	PERSONAL TARGET THE SCENARIO	TYPE OF ACTIVITY	TYPE OF PPE
Administrative areas	All the employees	Any	No PPE required
Screening area	Employees	First screening (temperature adjustment) without involving direct care ***	Spatial distance of at least 1 meter No PPE required
	Employees	Second screening (interview with patient showing symptoms of fever suggesting having COVID-19 and with travel history)	Surgical Mask Gloves
	Hygiene and cleaning professionals	When cleaning the area where fever patients are in the process of being screened	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing organic or chemical materials) Closed work boots or shoes
Temporary isolation area	Employees	When entering the isolation area, but not providing direct assistance	Spatial distance of at least 1 meter Surgical mask

	Health workers / employees	Providing patient transport assistance to a health facility	Surgical Mask Cloak Gloves Eye protection
	Hygiene and cleaning professionals	When cleaning the insulation area	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing organic or chemical materials) Closed work boots or shoes
Ambulance / Transport vehicle	Health professionals	Transport of patients suspected of carrying COVID-19 to the reference health facility	Surgical Mask Cloak Gloves Eye protection
	Driver	When the transport of the patient suspected of carrying COVID-19 takes place in a vehicle with an isolated compartment for the driver	Spatial distance of at least 1 meter Surgical mask
		When assisting the boarding of patients suspected of carrying COVID-19	Surgical Mask Cloak Gloves Eye protection
		Without direct contact with the patient suspected of carrying COVID-19, but there is no separation between the driver's cabin and the patient's compartment.	Surgical Mask
	Patient suspected of carrying COVID-19	During transport to the referral health facility	Surgical Mask if tolerated
	Hygiene and cleaning professionals	After / between the transport of patients suspected of having COVID-19	Surgical Mask Cloak Heavy-duty gloves Eye protection (if there is a risk of splashing organic or chemical materials) Closed work boots or shoes

SPECIAL CONSIDERATIONS FOR THE QUICK RESPONSE TEAMS ASSISTING PUBLIC HEALTH INVESTIGATIONS ****

TYPE OF SCENARIO	PERSONAL TARGET THE SCENARIO	TYPE OF ACTIVITY	TYPE OF PPE
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Community	Rapid Response Team investigators	Interviewing suspected or confirmed patients with COVID-19 or their contacts	No PPE required if done remotely (i.e., phone or video conference) This should be the preferred model
		Face-to-face interview without direct contact with the suspected or confirmed patient with COVID-19	Spatial distance of at least 1 meter Surgical mask <i>The interview must take place outside the home or outdoors and patients wearing COVID-19 must also be wearing medical masks</i>
		Face-to-face interview with asymptomatic contacts of a patient with COVID-19	Spatial distance of at least 1 meter No PPE required <i>The interview must take place outside the home or outdoors. If it is necessary to enter the house, confirm using a thermal scanner that the individual does not have a fever, maintain a spatial distance of at least 1 meter and do not touch anything in the environment</i>

Source: Clinical Management Protocol for the New Coronavirus, Brazil - Ministry of Health.

* In addition to the appropriate use of PPE, frequent hand and respiratory hygiene should always be performed. PPE must be disposed of in an appropriate container after each use and hand hygiene must be carried out before and after using each PPE.

** Visitors must be restricted. If entry into the patient's room with COVID-19 is extremely necessary, the procedures for placing and removing PPE and hand hygiene performed by the untrained visitor should be supervised by a health professional.

*** Includes non-touch thermometers, thermal imaging cameras, and questions / observations with a spatial distance of at least 1 meter.

**** All members of the Rapid Response Team must be trained in how to perform hand hygiene and how to put and remove PPE without being contaminated.

INFECTION PREVENTION AND CONTROL

RATIONAL USE OF PPE

COVID-19 Context (SARS-CoV-2)

The health services that act in the direct confrontation of the pandemic by SARS-CoV-2 (COVID-19) have faced difficulties in the purchase and availability of equipment intended for the individual protection of their teams. The guidelines provided here do not represent an innovation or a contradiction to the “Technical Bulletins” or “Good Practices” for the use of personal protective equipment (PPE), they only act as a recommendation so that the unnecessary use of this equipment is reduced and contingency is established in the in case of shortage of any of the recommended PPE, at this moment of serious threat to public health.

Table 2 shows some contingency measures that can be taken during the crisis caused by SARS-CoV-2 (COVID-19) in case of shortage of PPE. To define the moment when contingency measures are used, in this table the terms **Normal Capacity** (PPE stocks within the expected range, the measures consist of providing assistance to the patient without any change in daily practices) and the **COVID-19 Crisis** (stock of PPE below expectations, the measures used are not always in accordance with the recommended good practices, but need to be performed due to the scarcity of resources and the system's inability to limit the user's access to the health service).

Table 2. Rational use of PPE during a SARS-CoV-2 crisis (COVID-19).

RATIONAL USE OF PPE - SARS-CoV-2 (COVID-19)					
Type of PPE Time	Surgical Mask	N95 masks or PFF2 / PFF3 respirators	Protective goggles	Apron	Gloves
Normal capacity	Use the surgical mask according to the SCIH guidelines and unit routines.	Use the N95 mask or equivalent according to SCIH guidelines and unit routines.	Wear safety goggles in accordance with SCIH guidelines and unit routines.	Use the apron in accordance with SCIH guidelines and unit routines.	Wear protective gloves in accordance with SCIH guidelines and unit routines.
COVID-19 Crisis	<p>Cancel all elective procedures and non-urgent consultations.</p> <p>NEVER attempt to clean the mask already used with any type of product.</p> <p>Surgical masks are disposable and cannot be cleaned or disinfected for later use, because when wet they lose their filtration capacity.</p>	<p>Consider using respirators or N95 masks or equivalent, beyond the expiration date designated by the manufacturer, although these materials may not meet all requirements for which they have been certified.</p> <p>It can be reused by the same professional, provided that mandatory steps are taken to remove the mask without contamination inside.</p> <p>In order to minimize contamination of the N95 mask or equivalent, if available, a face shield can be used.</p> <p>If the mask is intact, clean and dry, it can be used several times</p>	<p>Cancel all procedures, non-urgent and elective consultations in which the use of goggles is essential.</p> <p>Consider using reusable face Shields</p> <p>Consider using face masks and / or goggles, beyond the expiration date designated by the manufacturer - validate with the SCIH / board.</p> <p>Prioritize the use of goggles and face masks for areas where healthcare professionals are most exposed.</p>	<p>Cancel all procedures, non-urgent and elective consultations in which the use of aprons is essential.</p> <p>Consider using cloth aprons for insulation (discard the fabric apron in the presence of visible dirt).</p> <p>Consider extending the use of the same fabric apron by the same healthcare professional in caring for the same patient (discard the fabric apron in the presence of visible dirt).</p>	<p>Cancel all elective procedures and non-urgent consultations.</p> <p>Two gloves should not be used to care for patients, this action does not increase the safety of care.</p>

		<p>during the same shift by the same professional (up to 12 hours or as defined by the Hospital Infection Control Commission - CCIH of the health service).</p> <p>NEVER clean the N95 mask or equivalent already used, with any type of product, because when wet they lose their filtration capacity.</p>		<p>Consider extending the use of the same fabric apron by the same health care professional to more than one patient with a confirmed diagnosis, who are in the same isolation (discard this measure in the presence of another infectious agent transmitted by contact and discard the apron in the presence of visible dirt).</p> <p>When cloaks are not available:</p> <p>Lighter weight aprons</p>	
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