



Guidance on  
Infection Prevention  
and Control measures  
for COVID-19 for  
Emergency Medical  
Services (EMS)



112



health

Department:  
Health  
REPUBLIC OF SOUTH AFRICA





Background



Dispatch /Call Management



Pre-assessment/ Assessment



Transportation



Decontamination



Screening and Triage



Isolation and quarantine



Home care in context of COVID-19



Dead body management



Next Step



**Emergency medical services (EMS) play a vital role in COVID-19 outbreak response and case management by:**

Responding to requests for assistance, triaging patients, and providing emergency medical treatment and transport for suspected and confirmed COVID-19 persons.

Unlike patient care in the controlled environment of a healthcare facility, care and transports by EMS present unique challenges due to:

- The nature of the setting.
- Enclosed space during transport.
- Frequent need for rapid medical decision-making, interventions with limited information, and a varying range of patient acuity and jurisdictional healthcare resources.



- Risk evaluation: triage of the patients prior transport.
- Personnel should establish if the patient is suspected of having COVID-19 or respiratory symptoms ( use standard case definition).
- Activation and pre-notification of responding crew and preparation.
- EMS personnel should have appropriate PPE before leaving for a call out.
- If information about potential for COVID-19 has not been provided EMS should exercise appropriate precautions when responding to any patient with signs or symptoms of a respiratory infection.

The required PPE for EMS personnel can be found in table below:

LEVEL OF CARE	HAND HYGIENE	MEDICAL MASK	RESPIRATOR (N95 OR FFP2)	GOWN	GOGGLE OR FACE SHIELD	GLOVES
Suspected case of COVID-19 1 meter assessment (ambulance crew)	X	X				X
Driving WITH patient compartment isolated	X	X <sub>i</sub>				
Driving WITHOUT patient compartment isolated	X	X <sub>i</sub>				
Suspected or confirmed case of COVID-19 requiring medical transport and NO aerosol-generating procedure	X	X		X	X	X
Suspected or confirmed case of COVID-19 requiring medical transport and WITH aerosol-generating procedure	X		X	X	X	X
Cleaning the ambulance	X	X		X	X	X



- Preparation of personnel, Communication with integrated health service network, Secure route.
- If COVID-19 is not suspected, EMS should follow standard procedures and use appropriate PPE for evaluating a patient with a potential respiratory infection.
- A facemask should be worn by the patient for source control.
- If a nasal cannula is in place, a facemask should be worn over the nasal cannula. Alternatively, an oxygen mask can be used if clinically indicated.
- After completing patient care and before entering an isolated driver's compartment, the driver should remove and dispose of PPE and perform hand hygiene to avoid soiling the compartment.



**If a patient with an exposure history and signs and symptoms suggestive of COVID-19 is transported to a healthcare facility the following actions should occur during transport:**

- Inform the HCF about the PUI so that appropriate infection control precautions may be taken prior to patient arrival.
- When possible, use vehicles that have isolated driver and patient compartments that can provide separate ventilation to each area.
- During transport, vehicle ventilation in both compartments should be on non-recirculated mode to maximize air changes that reduce potentially infectious particles in the vehicle.
- Family members and other contacts of patients should not ride in the transport vehicle, **except for infants, surgical mask should be used for PUI and HCWs and by care giver.**

**Air Medical Transport:** Flight Crew Precautions and PPE, PUI in isolated area, AGP should be conducted before flying to reduce transmission.

### **In case life support during the flight:**

- Use simple and non-rebreather face mask to deliver oxygen
- Manual ventilation devices should be equipped with HEPA filters in vents.
- Mechanical ventilators should provide HEPA filtration capacity or equivalent of airflow exhaust.
- Portable suction devices should be equipped with HEPA or equivalent filter kit.

**Ventilation for Fixed-Wing Pressurized Aircraft, Ventilation for Rotor-Wing and Non-Pressurized Aircraft,** use N95 masks not for cockpit staffs if air not controlled.

**Decontaminate the environment and waste management:** The patient should be positioned as downwind from the cabin and as close to the aircraft exhaust vent as possible.



**If the transport vehicle does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. A respirator or facemask should continue to be used during transport.**

## Post-Transport

Evaluate the PUI, waste, social distance, Doffing and debriefing at HCF and proceed with ambulance decontamination on the appointed area.

## Administration (EMS)

## Protocols and training

All pre-hospital EMS providers should receive education and training and demonstrate competencies for COVID-19 PPE and patient management, risk communication, ambulance supplies and local context.



- **Consider Spaulding criteria:** cardiac monitor, ventilator, first aid box, medications bag, safety of injection, waste management and disinfection of linen.
- **Always cleaning and brushing from outside to inside.**
- **High risk sites:** oxygen knob, stretcher handle, and interior handle of the rear door.
- Clean and disinfect, All surfaces that may have come in contact with the patient or materials contaminated during patient care (e.g., stretcher, rails, control panels, floors, walls, work surfaces).
- Clean and disinfect reusable patient-care equipment before use on another patient, according to manufacturer's instructions.



**Children** should be provided a mask and with care giver.

**The Geriatric Considerations Elderly populations** often have special needs which could affect COVID-19 pre-hospital protocol, including hearing deficits, neurological conditions, Cognitive impairment and other comorbidities.

- **Dead body management:** Body bags are not necessary for packing the body. Wrap the body in the stretcher's sheet or any other linen for transfer to the designated hospital, forensic team or mortuary area.

*PATHO/WHO. COVID-19 Recommendations: Prehospital Emergency Medical Services (EMS). Draft document, Version 4.4 (27 March 2020) <https://iris.paho.org/handle/10665.2/52137>*



## Ambulance decontamination must be performed per protocol

### Before Decontamination and Disinfection:

Following patient transfer, the back doors of the ambulance should be left open so that sufficient air exchange may occur.

Appropriate supplies must be available.

1. Yellow caution tape or alternative system for marking off the decontamination area
2. PPE for personnel performing decontamination
3. Leak proof biohazard bags
4. Garbage bags
5. Spray bottles
6. Disposable rags
7. Alcohol based hand sanitizer
8. Absorbent towels
9. Bleach or alcohol-based cleaning solution or disinfectant wipes

Decontamination team - The vehicle operator and patient care provider or a separate team may be used.

Both approaches have advantages.



## Ambulance decontamination must be performed per protocol

### During disinfection / decontamination

All visibly soiled surfaces should be cleaned and then decontaminated starting from the ceiling of the vehicle and working down to the floor in a systematic process.

All surfaces that may have had contact with the patient or materials that were contaminated during patient care (eg. Control panels, floors, walls, work surfaces, stretcher, rails, etc) must be thoroughly cleaned including the underneath and base of the stretcher.

To conduct cleaning, providers should follow routine cleaning and disinfection procedures for pre-cleaning. This can be done with water and soap. This pre-cleaning must be followed by the application of a high-grade disinfectant to any potentially contaminated surfaces or objects.

Coronaviruses have a lipid envelope which makes a wide range of disinfectants effective. Disinfectant solution options include:

- An EPA-registered disinfectant that is labeled for emerging viral pathogens. These may have descriptions such as “[product name] has demonstrated effectiveness against viruses similar to COVID-19 on hard, non-porous surfaces. Therefore, this product can be used against COVID-19 when used in accordance with the directions for use against [name of supporting virus] on hard, non-porous surfaces.”
- Chlorine-based compounds (bleach, calcium hypochlorite, NADCC tablets) must be at least 0.1% (1000ppm) for 10 minutes on a clean surface.
- Alcohol-based compounds (isopropyl alcohol, ethyl alcohol) must be at least 60-70% alcohol by weight or by volume.
- Regular household disinfectant containing 0.5% sodium hypochlorite (that is, equivalent to 5000 ppm or 1 part bleach to 9 parts water).

Ensure adequate ventilation especially when using chemicals. Doors should remain open while cleaning the vehicle.

Follow contact times on labels of the products used.

If patient care equipment is reusable, it must be cleaned and disinfected according to the manufacturer's instructions.

### Decontamination of spills and disinfection:

Disinfect the outside of any bags containing unused medical equipment as well as the stretcher.

Supervised doffing of PPE can occur into a final biohazard bag, which is closed and disinfected.

### After disinfection/decontamination:

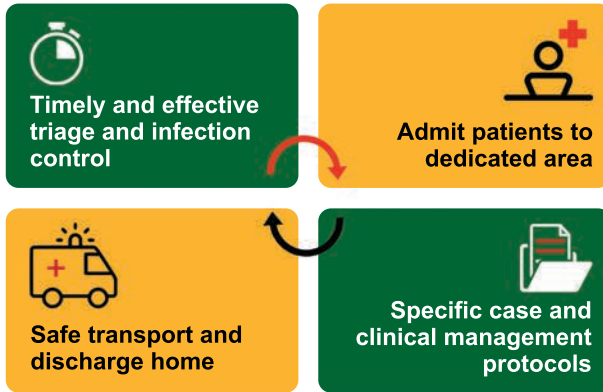
- All waste, including PPE and wipes, should be considered Category A infectious substances, and should be packaged appropriately for disposal.
- Linen should not be shaken. It should be contained and laundered according to standard operating procedures.
- Wash and disinfect linen: washing by machine with warm water (60-90°C) and laundry detergent is recommended for cleaning and disinfection of linens. If machine washing is not possible, linen can be soaked in hot water and soap in a large drum, using a stick to stir, avoiding splashing. If hot water not available, soak linen in 0.05% chlorine for approximately 30 minutes. Finally, rinse with clean water and let linen dry fully in the sunlight.

### Waste:

- All waste must be disposed of according to organization protocols as well as local and national regulations for Category A infectious substances. (Best practice may be to transfer waste to the hospital for disposition).
- Additional cleaning methods may also be used, though are not required (e.g. Ultraviolet germicidal irradiation, chlorine dioxide gas, or hydrogen peroxide vapor). However, these should not replace the manual disinfection.
- Ambulance can then be returned to service.

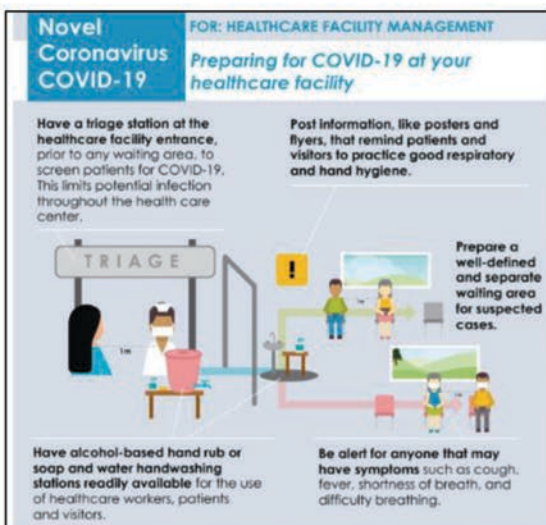


## Triage



Clinical triage is to be used in health care facilities for the early identification of patients with acute respiratory infection (ARI) to prevent the transmission of pathogens to health care workers and other patients.

1. Ensure adequate space for triage (maintain at least 1m distance, staff screening and patients/staff entering).
2. Have hand hygiene alcohol rub and makes available (also according to risk assessment).
3. Waiting room chairs for patients should be 1m apart.
4. Maintain a one-way flow for patients and for staff .
5. Clear signage for symptoms and directions.
6. Family members should wait outside the triage area - prevent triage area from overcrowding.







## Temporary Covid-19 Care away from home:

Please don't panic. Most people with Covid-19 will have mild-moderate symptoms and can be safely treated outside of the hospital. The reason you have been asked to stay at a facility is because you don't have a separate room at home or it's not safe for you to do so. Government and municipalities are providing comfortable facilities where you can be separated from your families until it is safe for you to return.

## Temporary Covid-19 facilities:

- **Isolation facilities** for mild-moderate symptoms where you can recover from Covid-19 (usually 14 days).
- **Hospitals** - for severe symptoms.
- **Transitional facilities** when results are awaited (usually 1 - 2 days).
- **Longer term quarantine facilities** for people who have been close contacts (usually 7 - 14 days).

It's important that all people affected by Covid-19 are separated to limit the spread of the virus. People with confirmed Covid-19 will be in separate facilities. People awaiting tests and contacts may be at the same facility but will be separated.

**Isolation:** When a person with confirmed Covid-19 is separated from others.

**Quarantine:** When a person who does not have Covid-19 but has been in contact with someone who has it is separated from others; or who is awaiting results.

Separation from your families is a difficult experience, but necessary to prevent spreading the virus to your loved ones and community. Your health worker and social services will advise you on the benefits of being cared for away from home.



## THE 5 GOLDEN RULES

1. Wash hands
2. Don't touch your face
3. Keep apart
4. Cover your cough
5. Sick? Stay home



## **Covid-19 caring at home:**

Please don't panic. Most people with Covid-19 have mild-moderate symptoms and can be safely treated at home. People with severe symptoms or who can't safely isolate at home will be referred to a facility.

## **This information applies to:**

- A person with confirmed Covid-19
- A person awaiting test results
- A person who has been identified as a close contact with someone with Covid-19

## **What to do:**

- Move these people to separate rooms or sections of a home. They should have no contact with others in the home.
- Homes with more than one person needing to be separated need to house people separately. If this is not possible contact your healthcare provider or Provincial Hotline.
- If the results are negative they can move around freely.
- If the results are positive the person needs to be separated from the rest of the household for 14 days. This also applies to contacts.
- Do not leave the home. Arrange with friends and your community to drop groceries, meals and medicines at the door. If not possible, then a healthy caregiver may leave the home for essential trips only, using the 5 Golden Rules Of Hygiene and a mask.

## **Home care is only recommended if you:**

- Have mild-moderate symptoms
- Have a separate room
- Have someone to care for you
- Can easily stay in touch with your healthcare provider

## **Seek health care urgently if anyone develops:**

- Difficulty breathing
- Persistent pain or pressure in the chest
- Confusion or unable to wake
- Call ahead. Avoid public transport. Use an ambulance if necessary.



## Home care advice:

- Everyone wash your hands often for at least 20 seconds with soap and water.
- Cough or sneeze into a tissue or your elbow.
- Throw away the tissue into a closed bin.
- Look after your mental health. Stay in touch with family and friends via phone.

## Caregiver:

- Clean frequently touched objects and surfaces.
- Leave food for person at the door. Remove waste and laundry.
- Ask about symptoms regularly.
- Use dedicated items like dishes, towels and bedding for the ill person.
- Wash used items in hot water. Heat helps disinfect items.
- Where available, use hot machine cycles (60 - 100 degrees), tumble-drying and ironing.
- Double-bag rubbish and store for 5 days before putting out for collection.

## Caregivers and others should monitor themselves for symptoms:

- Symptoms include cough, fever, aching muscles, sore throat and difficulty breathing.
- If any symptoms develop, contact your healthcare provider or phone the Provincial Hotline.

## Person separated because of Covid-19

- Rest, drink plenty of fluids, eat healthy food and use paracetamol for fever or pain.
- Stay in a separate room and use a separate bathroom if possible. Open doors and windows. If well enough, make your bed, and set aside rubbish and dirty laundry.
- Wear a mask as advised by healthcare provider.
- Document your symptoms (difficulty breathing, chest pain, diarrhoea) and temperature twice a day. If symptoms worsen or persist beyond 7 days, contact your healthcare provider or Provincial Hotline.

**ONLY STOP SEPARATION IN CONSULTATION WITH YOUR HEALTHCARE PROVIDER OR PROVINCIAL HOTLINE.**



COVID-19 Disease: Infection Prevention and Control Guidelines Version 1 April 2020 □

file:///C:/Users/JEAN%20PAUL/Downloads/RSA\_DOH\_IPC\_guideline\_Covid-19\_Version\_1\_April\_2020.pdf

## Body Bags



### Dead bodies

- The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected throughout.
- To date there is no evidence of persons having become infected from exposure to the bodies of persons who died from COVID-19.
- Before attending to a body, ensure that the necessary hand hygiene and PPE supplies are available for standard precautions including hand hygiene, appropriate use of PPE, and environmental cleaning.
- PPE for routine use will be gloves and apron, however if there is a risk of splashing, face protection, such a face mask, face shield or goggles may be worn.
- After removing all medical devices, ensure that any leaking from orifices are contained.
- Keep movement and handling of the body to a minimum.
- Wrap body in cloth (shroud) or a body bag if leakage is expected and transfer it as soon as possible to the mortuary area.
- There is no need to disinfect the body before transfer to the mortuary area.
- Body bags are not necessary, although they may be used for other reasons (e.g. excessive body fluid leakage); and
- No special transport equipment or vehicle is required





## Death bodies management

- Health care workers or mortuary staff preparing the body (e.g. washing the body, tidying hair) should wear appropriate PPE (gloves, water resistant disposable gown, face mask, eye protection); If the family wishes to view the body, they may do so, using standard precautions.
- They are not allowed to touch or kiss the body.
- Embalming is not recommended to avoid excessive manipulation.
- Adults >60 years and immunosuppressed persons should not directly interact with the body.
- Where a body has to be moved to private mortuaries/funeral undertakers or government/state mortuaries the process should be aligned with the existing guidelines issued by the National Department of Health.

## Postmortem (autopsy)

- If a person died from COVID-19, the lungs and other organs may still contain live virus, and additional respiratory protection is needed during AGA (e.g. procedures that generate small-particle aerosols, such as the use of power saws or washing of intestines).
- Perform autopsies in an adequately ventilated room, i.e. at least natural ventilation with at least 160 L /s/patient air flow or negative pressure rooms with at least 12 air changes per hour (ACH).
- Controlled direction of air flow when using mechanical ventilation. Only a minimum number of staff should be involved in the autopsy.
- Appropriate PPE including a scrub suit, long sleeved fluid-resistant gown, gloves (either two pairs or one pair autopsy gloves), and face shield (preferably) or goggles, and boots.
- An N95 respirator should be used in the case of aerosol-generating procedures.
- The mortuary must be kept clean and properly ventilated at all times.
- Lighting must be adequate. Surfaces and instruments should be made of materials that can be easily disinfected and maintained between autopsies.



## Autopsies

- Instruments used during the autopsy should be cleaned and disinfected immediately after the autopsy.
- Environmental surfaces, where the body was prepared, should first be cleaned with soap and water, or a commercially prepared detergent solution.
- After cleaning, a disinfectant with a minimum concentration of 0.1% (1000 ppm) sodium hypochlorite (bleach), or 70% ethanol should be used.

## Family member:

- Any person (e.g. family member, religious leader) preparing the deceased in a community setting should wear gloves for any contact with the body.
- For any activity that may involve splashing of bodily fluids, eye and mouth protection (face shield or goggles and surgical mask) should be worn.
- Clothing worn to prepare the body should be immediately removed and washed after the procedure, or an apron or gown should be worn.
- The person preparing the body should not kiss the deceased.
- Family and friends may view the body after it has been prepared for burial, in accordance with customs. The belongings of the deceased person do not need to be burned or otherwise disposed of.
- Clothes can be laundered and reused.



Psychosocial support, risk communication and community engagement

Risk evaluation for healthcare workers exposed, at facility and during the transportation

SOP for community based IPC: schools, home, public places, shops

SOP for ambulance and materials disinfection scorecard: rapid risk evaluation

WASH evaluation in healthcare facilities and communities

IPC consideration for point of entries and point of control

Follow these precautions at all times:



**SOCIAL DISTANCING**



**WEAR A MASK**



**WASH HANDS REGULARLY**



**DONT' TOUCH FACE**



**PRACTICE COUGH ETIQUETTE**

