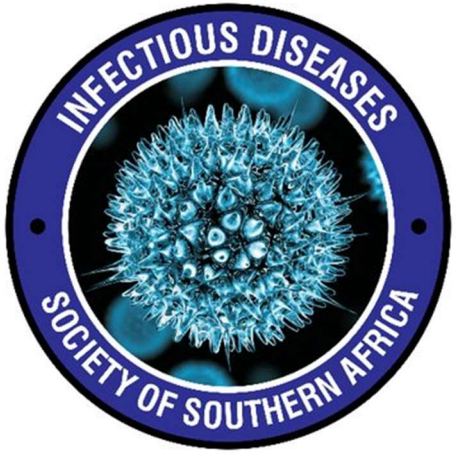
# COVID-19 primary care facility preparedness guide

**8 April 2020**

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# Contents

# 1. COVID-19 equipment required at facility

## 1.1. Equipment list

In order to prepare COVID-19 facility set up and manage patients through appropriate service pathways required and continue necessary community outreach, the facility requires the equipment and consumables identified in Annex 1.

## 1.2. Procurement support

Sub-District managers are to ensure availability and procurement of equipment list in Annex 1**Error! Reference source not found.**.

# 2. Training required by facility staff

## 2.1. Training required

*Table 1: Facility training required*

| **Training topic** | **Where training to be provided** | **Who should receive training** | **Who can provide training** |
|---|---|---|---|
| 1. IPC including hand hygiene, PPE (who to wear PPE and when, which PPE to wear, donning and doffing – see Annex 7), HCW self-isolation if symptomatic | At facility | All facility staff | Facility Manager/Facility doctor or nurse/Referral site doctor or nurse/sub-district doctor or nurse |
| 2. COVID-19 triage system at the facility and adapted patient service pathways | At facility | All facility staff | Facility Manager/Facility doctor/Head professional nurse once set up |
| 3. COVID-19 testing (if done at facility otherwise part of referral system) | At facility | Nurses or doctors designated at facility to carrying out testing | Facility doctor or nurse/Referral site doctor or nurse/sub-district doctor or nurse |
| 4. Referral protocols into facility (from community), within facility (between services) and to referral sites (for testing/emergency care) | At facility | All nurses – most importantly those running second screening station (chest clinic) | Facility Manager or Head professional nurse |
| 5. Decontamination and waste management refresher training including: decontamination of hard surfaces, medical devices and equipment and ensuring PPE managed and disposed of appropriately | At facility | All staff | Facility Manager or designate |
| 6. Facility cleaning refresher training including: appropriate use of disinfectants and detergents, frequency of cleaning stations set out below. | At facility | Cleaners | Facility Manager or designate |

2.2. Training monitoring

Facility manager or designated administrative staff member must keep an updated list of training required and received by each staff member for reporting to and inspection by sub-district

2.3. Support to provide training

Where the facility team requires support to provide the required training, the sub-district manager should be contacted and training support requested.

# 3. Facility set up to ensure appropriate COVID-19 triage and adapted secure patient service pathways at the facility

Table 2 below sets out 7 essential components of facility set up. Each component is discussed in more detail below.
These zones should be labelled according to their colour to make it clear to staff which zone they are entering or exiting.

*Table 2: Essential facility set up components*

| | **Components/stations** | **Zone**<br>**Yellow = COVID-19 medium risk zone**<br>**Orange = COVID-19 high risk zone**<br>**Blue = COVID-19 low risk and protect zone** |
|---|---|---|
| 1 | Single point of entry into facility premises | **Yellow zone** |
| 2 | Patient and HCW sanitation station | **Yellow zone** |
| 3 | 1st Screening station | **Yellow zone** |
| 4 | 2nd Screening station (also called chest clinic) | **Orange zone** |
| 5 | COVID-19 testing station | **Orange zone** |
| 6 | HCW sanitation station at entry into routine services | **Blue zone** |
| 7 | Routine services for COVID-19 symptom negative patients | **Blue zone** |
| 8 | Facility station transfer and exit pathways | **Takes colour from previous station** |

## 3.1. Single point of entry into facility premises

*Location*

- This is not into main buildings of the facility but at the gates to the premises. Only one gate should be used for patients.
- HCWs and staff can use an alternative gate into premises but then it requires its own designated gate official (DGO) to manage and its own sanitation station (see 3.2)

*Staffing*

- Single entry point is managed by *Gate Designated Official (GDO)* – can be a security guard or lay HCW.

*Station set up*

- Ground to be demarcated outside facility gate with lines 1.5m apart on the ground with spray paint/tape.

*Appropriate IPC and PPE use for staff*

- GDO to wear surgical mask (one per shift), non-sterile gloves and disposable apron (to discard when leaving Yellow/Orange zone in facility otherwise one per shift). GDO to attempt not to come closer than 1.5 meters from any patient while managing area outside the gate.
- GDO to wash/sanitize hands each time he/she removes gloves when leaving Yellow/Orange Zone. Also wash or sanitize hands when re-entering Yellow/Orange zone. Should keep exits and re-entries to a minimum during shift.

*Station set up and procedure*

- GDO to manage patients line up in queue outside gate 1.5m on demarcated lines on the ground
- GDO to work outside the gate ensuring patients are lined up and spaced according to lines, moving frequently up and down right to the end of the queue
- **The single point of entry should not be used by patients exiting the facility – see detail in section 3.8 below.**

## 3.2. Sanitation station

*Location*

- Short distance from single entry point, outside facility buildings

*Staffing*

- Sanitation station run by *Sanitation Designated Official (SDO)* - can be a security guard or lay HCW or admin staff member.

*Appropriate IPC and PPE use for staff*

- SDO to wear surgical mask (one per shift), non-sterile gloves and disposable apron (to discard when leaving Yellow/Orange zone in facility otherwise one per shift).
- SDO to wash/sanitize hands each time he/she removes gloves when leaving Yellow/Orange Zone. Also wash or sanitize hands when re-entering Yellow/Orange zone. Should keep exits and re-entries to a minimum during shift.

*Station set up and procedure*

- Sanitation station set up – there are 3 options set out below in order of best option to worst option (but still adequate)
- SDO stands outside the gate 1.5m from the beginning of the queue
- SDO only allows one person to pass to the sanitation centre and only once sanitation complete – allows another patient to move through gate.
    i. Sanitizer spray station
        - No table is required
        - SDO sprays hand sanitizer on each patient's hand and ensures patient full rubs sanitizer over both hands up to wrists.
        - SDO is not to touch patient or let patient touch sanitizer bottle

    ii. Bleach/water solution in water container with tap on edge of table and bucket to catch water after tap turned on
        - Water container is filled with water/bleach solution and placed on a table/chair (see Annex 2)
        - SDO operates tap of water container over each patient's hand and ensures patient fully rubs bleach/water solution over both hands up to wrists.
        - SDO is not to touch patient or let patient touch water container or tap

    iii. Liquid detergent and water container with tap placed on edge of table and bucket to catch water after tap turned on
        - See Annex 2 for image of water container and bucket set up
        - SDO squeezes liquid detergent on patient's hands ensure patient rubs over both hands up to wrists.
        - Operates tap of water container over each patient's hand to wash off detergent
        - SDO is not to touch patient or let patient touch detergent bottle or water container tap

## 3.3. 1st screening station (also called COVID-19 symptom screening station)

*Location*

- Short distance from sanitation point, outside facility buildings and just inside the gate.

*Staffing*

- At least 2 staff members are required to manage 1st screening station.
- *1st screening station queue* marshal (1st SS Queue Marshal): One staff member to manage the queue. Can be a security guard, lay HCW or administrative staff member.
- 1st screening station screener/s (1st SS Screener): A staff member will screen the patients. At higher volume facilities may need 3-5 1st SS screeners. 1st SS screener/s can be lay HCW, enrolled nurse, nursing assistant. Where facility has sufficient professional nurses after staffing 2nd screening station and COVID-19 testing station, this triage can also be run/supervised by a professional nurse. This

would improve quality of screening, enable dispensing of flu packs for those who screen negative but have other flu associated symptoms and advice and education on home isolation.

*Station set up*

- Ground to be demarcated leading from sanitation station to 1st screening station with lines 1.5m apart on the ground
- High volume facilities may need 3-5 1st screening sub-stations within 1st screening station (at least 1.5m apart).
- There can either be one queue line from sanitation station to 1st screening station or there can be multiple lines in front of each 1st screening sub-station. See Annex 3 diagram example.
- 1st screening station should be under cover (if possible) to protect during periods of rain. An open sided gazebo/tent can be used.

*Appropriate IPC and PPE use for staff*

- 1st SS Queue Marshall and 1st SS Screener to wear surgical mask (one per shift), non-sterile gloves and disposable apron (to discard when leaving Yellow/Orange zone in facility or once per shift).
- 1st SS Queue Marshall and 1st SS Screener to wash/sanitize hands each time he/she removes gloves when leaving Yellow/Orange Zone. Also wash or sanitize hands when re-entering Yellow/Orange zone. Should keep exits and re-entries to a minimum during shift.

*Station procedure*

- 1st screening station queue marshal to:
  - Ensure patient's standing 1.5 meters apart on the demarcated lines.
  - Inform the queue of patients what will be asked by the 1st screeners to prepare for being screened
  - Not to come closer than 1.5 meters from any patient while managing queue.
- 1st SS screener/s to:
  - Ask screening questions – **these questions may change and should be updated** – see Guidelines for case-finding, diagnosis, management and public 10 March 2020
  - On 1 April 2020 the following questions should be asked:
    - Cough or fever or shortness of breath or sore throat developed in last 14 days **OR**
    - Significant worsening of chronic cough in past 14 days **OR**
    - Sudden very obvious loss of smell or taste in last 14 days
  - If POSITIVE SCREEN (answers any of the above questions in the affirmative)
    - **hand patient surgical mask**
    - **explain how to put it on**
    - **ensure patient fits it correctly**
    - do not touch patient
    - direct patient to 2nd screening station (chest clinic) along cordoned pathway

- If NEGATIVE SCREEN (answers all of the above questions in the negative)
    - Ask patient if facility visit today is absolutely necessary. Also inform patient of any services that have been closed during the COVID-19 pandemic (*this step could be moved to SDO at sanitation station if queue for 1st screening station is long provided there is a safe exit pathway*).
    - Where patient decides not necessary to attend facility today – direct patient towards exit on cordoned off path to exit (see section 3.8 below). If this station can be managed by a professional nurse and patient has other flu symptoms, can be issued with flu pack (Panado, Vit BCo and Allergex), patient information sheet and advice on home isolation measures.
    - Where patient does need or want to attend facility today - direct to routine health services (see section 3.7 below)
- Where facility runs 24 hour services, the 1st and 2nd screening stations remain vital. These can moved to the entrance of the emergency department, with those symptom-positive kept separate from those symptom- negative (emergency department patients), ideally in a separate waiting area.

## 3.4. 2nd screening station (also called temporary chest clinic)

*Location*

- The best option is an **external tent** where tent is available and facility external space makes this feasible. The tent should be located with a direct cordoned pathway from 1st screening station.
- Other options in the following order from best to worst options listed below (all are adequate)
    - Row of gazebos
    - Cordoned off area outside under cover (e.g. under parking roof)
    - Separate building from main facility services if this exists
    - Separate section of the facility which can be entered from outside and closed off from the remainder of the facility

*Staffing*

- Critical staff are:
    - *2nd screening station* clinician (2nd SS Clinician*):* To further screen and manage patients with COVID-19 symptoms. Should be a professional nurse or doctor. At higher volume facilities may need 2 clinicians.
    - *Patient navigator/runner:* Two staff member is required to navigate patients with COVID-19 symptoms who require routine health services to the required routine health service clinician consulting room (e.g. ANC) or to bring clinician to prepared consulting space (see table 3 below). Patient navigator/runner will also ensure patient does not need to go anywhere else in the facility. He/she will collect patient folders, treatment refills or blood results and bring them to the consulting clinician.
- Depending on staff compliment, the following staff members would also be of assistance

- *2nd screening station queue marshal (2nd SS Queue Marshall)*: One staff member to manage the seated queue. Can be a security guard, lay HCW or administrative staff member.
- *2nd SS cleaner*: See cleaning procedures below (can be shared with COVID-19 testing station)
- Generalist clinician: To provide for other health needs of the patients
- *Administrative clerk*: Where facility requires opening of files

*Station set up*

- Chairs must be placed 2m apart with tape demarcating on the floor where to be placed and chairs should not be moved. Patients must not move between chairs in waiting room but stay on one allocated to them on arrival.
- In high volume facilities, can set up into 2 sections to allow for disinfection of one section while other section is in use.
- The 2nd SS Clinician/s should be placed in a room off the waiting area/gazebo off main tent/cordoned off cubicle within tent/room. Where none of the above possible, at desk at least 2m from the seated queue system.
- 2nd SS Clinician/s should have all necessary equipment at hand – see section 1.

*Appropriate IPC and PPE use for staff*

- All staff in 2nd screening station (chest clinic) and those seeing patients for other health services from 2nd screening station to wear surgical mask (one per shift), non-sterile gloves and disposable apron (to discard when leaving Yellow/Orange zone in facility or one per shift)
- All staff members to wash/sanitize hands each time he/she removes gloves when leaving Yellow/Orange Zone. Also wash or sanitize hands when re-entering Yellow/Orange zone. Should keep exits and re-entries to a minimum during shift.
- Where 2nd SS Clinician required to come into close contact with patient, should wear goggles or visor. The clinician needs to clean all surfaces touched by the patient, including seat, stethoscope, cuffs and/or bed if used. Should discard non-sterile gloves and aprons between each patient interaction, sanitize hands, disinfect googles/visor.
- Cleaners also to wear goggles/visor and disinfect per shift.

*Station procedure*

COVID-19 symptom positive further screening and management procedures

- Three-tiered screening approach required set out in algorithm below

2nd screening station specific cleaning procedures

- The 2nd screening station should be cleaned a minimum of three hourly.
- All chairs in 2nd screening station including in waiting room must be disinfected between use by patients i.e. no patient should sit on chair that has not been disinfected.
- In high volume facilities, 2nd screening station set up in 2 sections of seated queue chairs to allow for rotational cleaning (see 2nd screening station set up). The cleaner should disinfect all hard surfaces, including chairs and surrounding floor area with disinfectant (can you bleach/water solution – see Annex 2)

**COVID-19 symptom positive at 2nd screening station (temp chest clinic)**

**1st screening: Severity of symptoms**

Monitor:

1. Temperature - infrared thermometer
2. Oxygen saturations and pulse - mobile sats machine if possible
3. Respiratory rate

**If severe symptoms: Sats <95%, pulse >120, respiratory rate >25, OR temperature >38.5.**

1. Provide oxygen if available
2. Refer immediately
3. Do not continue screening process

**If CHC** – directly to emergency department (see specific guidance in Annex 8). Testing to be managed by emergency department.

**If PHC** - directly to patient transport

**If mild or moderate symptoms: Sats >95%, pulse <120, respiratory rate <25, AND temperature <38.5 continue with:**

**2nd screening: For COVID-19 testing and isolation or only isolation**

Use NICD continually updated testing criteria.

**At 2 April 2020:** Acute onset of:

1. Cough OR
2. Fever OR
3. Shortness of breath OR
4. Sore throat

*Where facility does not have sufficient PPE, test kits or set up to manage volume of tests required, use NICD criteria for persons most at risk:*

**Above testing criteria plus**

- Travelled outside the country in the last 14 days
- Direct contact with confirmed case
- Works in a healthcare facility caring for patients with confirmed COVID

**If require testing and isolation:**

Educate about:

3. Testing procedure
4. Testing location – onsite or referral site
5. Result communication if onsite
6. Immediate requirement to isolate for 14 days

**Isolation only:**

1. Educate about need to isolate for 14 days.
2. Provide options to patient based on the patient's home circumstances

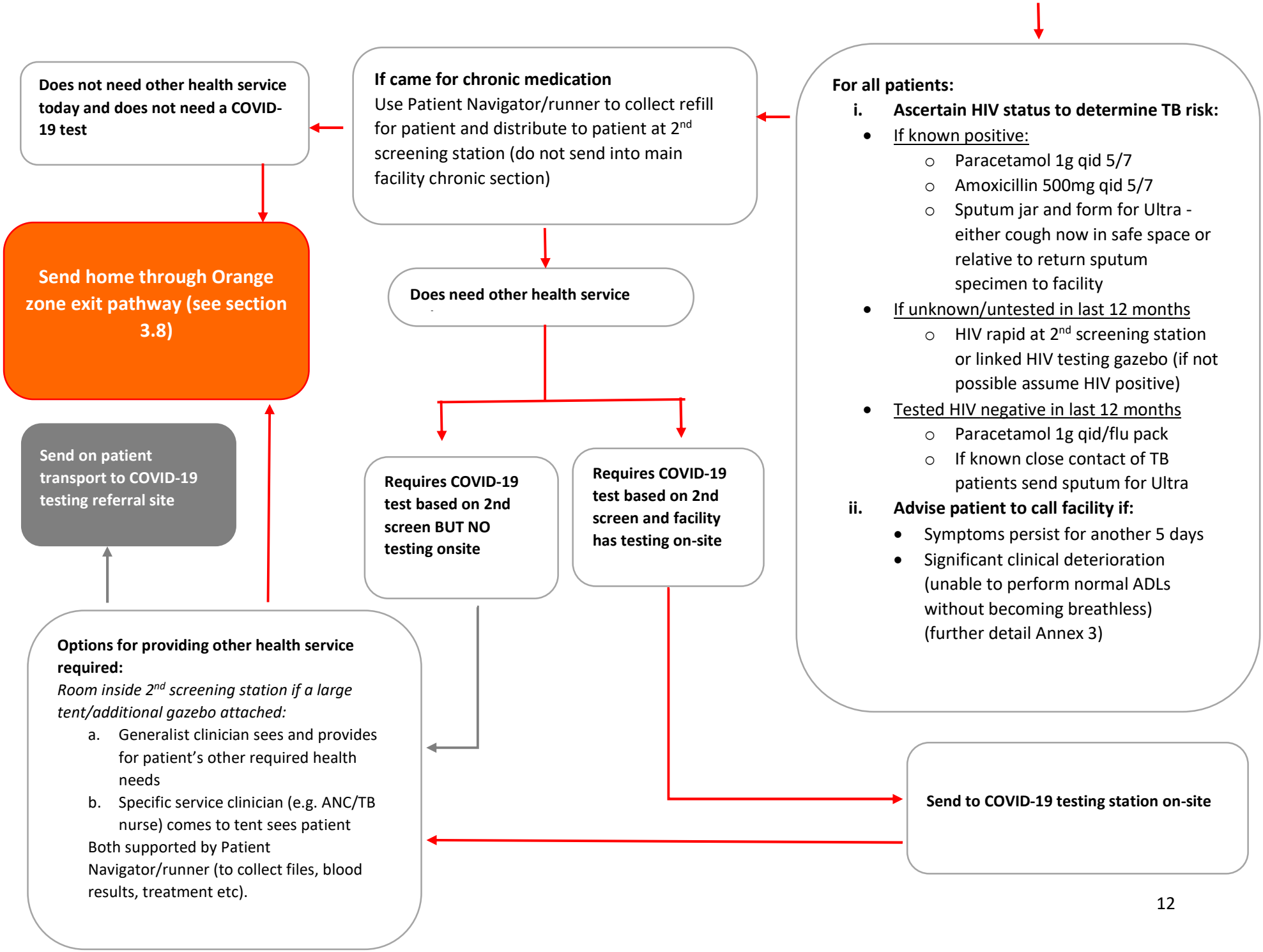
**Irrespective of outcome, continue with 3rd screening**

**3rd screening: Facility attendance due to COVID-19 symptoms OR other service need**

1. Why did you come to the facility today?
   - COVID-19 symptoms
   - For any other health service provided by the facility

If came for another health service reason:

1. Establish necessity of visit: Does it have to happen before 14 days from today?
2. Did you only come to collect chronic treatment refill?


For all patients:
i. Ascertain HIV status to determine TB risk:
If known positive:
Paracetamol 1g qid 5/7
Amoxicillin 500mg qid 5/7
Sputum jar and form for Ultra - either cough now in safe space or relative to return sputum specimen to facility
If unknown/untested in last 12 months
HIV rapid at 2nd screening station or linked HIV testing gazebo (if not possible assume HIV positive)
Tested HIV negative in last 12 months
Paracetamol 1g qid/flu pack
If known close contact of TB patients send sputum for Ultra
ii. Advise patient to call facility if:
Symptoms persist for another 5 days
Significant clinical deterioration (unable to perform normal ADLs without becoming breathless)
(further detail Annex 3)
If came for chronic medication
Use Patient Navigator/runner to collect refill for patient and distribute to patient at 2nd screening station (do not send into main facility chronic section)
Does not need other health service today and does not need a COVID-19 test
Send home through Orange zone exit pathway (see section 3.8)
Does need other health service
Requires COVID-19 test based on 2nd screen BUT NO testing onsite
Requires COVID-19 test based on 2nd screen and facility has testing on-site
Send on patient transport to COVID-19 testing referral site
Options for providing other health service required:
Room inside 2nd screening station if a large tent/additional gazebo attached:
a. Generalist clinician sees and provides for patient's other required health needs
b. Specific service clinician (e.g. ANC/TB nurse) comes to tent sees patient
Both supported by Patient Navigator/runner (to collect files, blood results, treatment etc).
Send to COVID-19 testing station on-site

## 3.5. COVID-19 testing station (if testing at facility)

*Location*

- Easily accessible from 2nd screening station. In order of preference from best to worst option (all adequate)
  - Designated existing sputum collection booth/area at facility if external to facility building
  - Separate well ventilated tent/gazebo outside facility building (more than 5m away from any other station)
  - Open air cordoned off section
  - A room with door directly from outside with ventilation and entry into facility locked

*Staffing*

- Testing Clinician: Professional nurse or doctor. This can be the same person as the 2nd SS Clinician in very low volume facility.
- Depending on volume of tests being done at facility, the following staff members would also be of assistance
  - *Testing station admin support*: One administrative or lay staff member to support clinician with completion of all the forms (see below)
  - *Testing station cleaner:* See disinfect testing station between each test

*Station set-up*

- Requires a table with testing kits, forms (PUI and NHLS lab and COVID-19 specimen forms – see Annex 4)

*Appropriate IPC and PPE use for staff*

- Testing Clinician to wear N95 mask, goggles or eye visor, gloves and disposable gown.
- If more than 1 patient is being tested it is not necessary to change N95 masks and goggle/visor between each patient but apron and gloves should be changed between every patient.
- To wash/sanitize hands between every patient
- Disinfect station between every patient.

*Station procedure*

- Complete the following forms:
  - PUI form
  - NHLD lab form
  - COVID-19 specimen form
- Take nasopharyngeal and oropharyngeal swabs – see detailed testing procedure in Annex 5.
- Ensure COVID-19 specimen test pack at appropriate point for collection for transport to lab and facility manager informed ready for collection.

## 3.6. Sanitation station at entry into Blue zone for HCWs

*Location*

- At entrance into facility building, where access other health services.

*Staffing*

- No staffing is required.

*Station set-up*

- Same as section 3.2 above but no designated full times staffing.

*Station procedure*

- HCWs wash/sanitize own hands after discarding gloves.
- Patient Navigator/runner sprays sanitizer/opens taps/pour liquid detergent on patient with COVID-19 symptoms entering Blue zone to access other routine health service (see section 3.5 above).
- HCW or Patient Navigator/runner disinfects sanitizer bottle or tap after use.

## 3.7. Routine services for COVID-19 symptom negative patients

*Service set up*

- Reduce wherever possible the number of service points the patient needs to visit.
- At all places required to queue e.g. Pharmacy, registry, vital signs or specific service – patient seating 1.5m apart. This should be managed by lay HCW staff to ensure patient compliance.
- Wherever possible reduce amount of time spent at the facility
- Where patient coming for chronic treatment/ART/TB refill only – ensure fast track system, stop all group interaction with patients managed one at a time and where possible consider setting up treatment refill station outside main facility (ideally at venue close by facility (where this is possible the GDO should notify patients waiting in line to enter the facility) – see NDOH "Response to reduce risk among HIV and TB patients within the context of the COVID-19 South African response."

*Appropriate IPC and PPE use for staff*

- Current guidelines – see Annex 9: Healthcare worker staff coming into contact with patients **WITH NO** COVID-19 symptoms: Hand sanitize/wash regularly.
- Where facility has sufficient PPE stock: Apply the following also for patients WITH NO COVID-19 symptoms:
  - Healthcare staff NOT coming within 1.5m of patients: Hand sanitize/wash regularly, keep 1.5m distance from patients.
  - Healthcare staff coming within 1.5m of patients, wear surgical mask, non-sterile gloves and disposable apron (one per shift). For healthcare workers examining patients, change non-sterile gloves and apron to be discarded after examination
- All other staff such as maintenance and administrative staff: Hand sanitize/wash regularly.

## 3.8. Facility station transfer and exit pathways

**Station transfer and exit pathway takes the same colour as the station patient comes from e.g. from 2nd screening station exit pathway is an Orange zone**

Staffing

- Not necessary but helpful to manage correct usage – if additional staff available.

Pathways set up

- A clear pathway from one station to another needs to be set up from:
  - Single point of entry to sanitation station
  - Sanitation station to 1st screening station
  - 1st screening station to:
    - Second screening station
    - Routine services for COVID-19 symptom negative patients
  - 2nd screening station to:
    - Patient transport/Emergency department
    - COVID-19 testing station
- A clear pathway from the following stations to exit of facility required:
  - 2nd screening station – Orange Zone
  - COVID-19 testing station – Orange Zone
  - Routine facility services – Blue Zone

# 4. Other facility set up and planning

## 4.1. COVID-19 emergency management facility committee

- Every facility to set up a COVID-19 emergency management facility committee (EMR facility committee) and must include facility manager and clinician.
- EMR facility committee responsible for managing facility readiness for COVID-19 immediately
- Meet daily until set up and running appropriately
- Liaise with sub-district for support required and report weekly in writing to sub-district

## 4.2. Patient transport

- Driver taking COVID-19 symptom positive patient for testing or severe symptoms to wear surgical mask, A40 suit, gloves.
- Discard PPE, hand sanitize and disinfect vehicle between each patient

## 4.3. Cleaning and waste management

- Strictly adhere to cleaning and waste management protocols
- Discard all PPE as clinical waste
- Discard all waste from Yellow and Orange zones as medical waste
- Discard detergent or disinfectant solutions safely at disposal point
- See further detail in Annex 6

## 4.4. COVID-19 test result management

- If facility tested for COVID-19, a facility-based clinician is responsible for:
    - Following-up result with lab
    - Communicating result to patient and managing patient telephonically
    - Follow protocols for reporting result to sub-district/province and NICD
- This responsibility can be managed by a designated clinician (need not be the same person designated to do COVID-10 testing – dependent on volume)

# Authors and contributors

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Dr Boyles is an infectious diseases sub-specialist currently employed at Helen Joseph Hospital, Johannesburg. He is a researcher at the University of the Witwatersrand and an Associate Professor at the London School of Hygiene and Tropical Medicine. He is the past President of the Infectious Diseases Society of Southern Africa (IDSSA) and lead author of the society guidelines for both acute meningitis and community acquired pneumonia. Dr Boyles spent three months as a front-line responder to the Ebola outbreak in Sierra Leone in 2014/15.

**Lynne Wilkinson**
Ms Wilkinson is a public health specialist with an MSc in Public Health from University College London. Her specific expertise is in differentiated service delivery for both HIV and TB patients. She has set up and run HIV programmes in rural and urban South African since 2005, including MSF's flagship Khayelitsha HIV and DR-TB project. She currently provides technical guidance on differentiated service delivery to sub-Saharan African country governments, global and local partners through the International AIDS Society differentiated service delivery initiative. She is an honorary researcher at the Centre for Infectious Epidemiology and Research at the University of Cape Town and World Health Organization HIV Testing Service Delivery and the South African National Differentiated Service Delivery Technical Working Groups. She also provided emergency response support to the Ebola outbreak in Sierra Leone in 2014/15, specifically setting up, managing holding centres and case management flow.

**Prof Shabir Moosa**
Prof Moosa is a family physician with an MBA and PhD. He is an Associate Professor in the Department of Family Medicine at the University of Witwatersrand. He has extensive experience in rural general practice and the development of family medicine and primary care services in both rural and urban district health services in South Africa and Africa. He project-managed the development of District Departments of Family Medicine across Gauteng and led the Department of Family Medicine in Johannesburg Health District from 2006 to 2011, completing an MBA in that time with research on GP contracting for National Health Insurance (NHI) in South Africa. Prof Moosa is deeply involved in development and research around family medicine and community-oriented primary health care (COPC) in Africa. In 2018 he was tasked by National Treasury to design NHI contracting for GPs to test for feasibilty.

**Dr Madeleine Muller**
Dr qualified in medicine from the University of Pretoria in 1995. In 2009 she joined the NGO Beyond Zero and in 2010 was awarded a Certificate of Special Merit by Rural Doctors of South Africa for work in mentoring PHC clinics in rural Eastern Cape. She has created and implemented a part-time adaptations of the WRHI Advanced HIV and TB course in the Eastern Cape and Limpopo. In 2017 she joined Nkqubela TB hospital and has been mentoring and supporting the creation of the Butterworth Gateway outreach decentralised DRTB site.

# Annex 1 - Facility equipment list

Orange = essential

Green = useful but not essential

| **For facility** | **Community outreach** |
|---|---|
| 1. Masks<br>a. N95 – only sufficient quantity for HCW carrying out COVID-19 test at facility (if provided at facility)<br>b. Surgical – quantity sufficient for HCW and patients indicated below<br>2. Disinfectants and hand sanitizer/bleach/detergent<br>3. Disinfectant equipment - Buckets/Water containers with taps<br>4. Infrared thermometers<br>5. Gloves<br>6. Disposable aprons/gowns<br>7. Goggles (or Visors)<br>8. Triage tent/gazebos (such as those used for HIV Counselling and Testing)<br>9. Cordoning tape<br>10. Spray paint or tape to mark floors<br>11. Mobile saturation and pulse fingertip monitor<br>12. Forms<br>c. PUI form<br>d. NHLS form<br>e. COVID-19 specimen collection form<br>13. Throat swab test kits<br>14. Cooler boxes<br>15. IEC materials<br><br>*When facility starts seeing patients presenting with severe COVID-19 symptoms*<br>18. Oxygen<br>19. Oxygen masks and tubing | 1. Masks –Surgical<br>2. Disinfectant – Hand sanitizer<br>3. Gloves<br>4. Aprons<br>5. COVID-19 IEC materials<br>6. Loudspeakers |

# Annex 2 – Water/bleach solution and set up

Water/bleach concentrations for handwashing and disinfecting surfaces (see also Annex 6)

Using Econo Bleach brand (3.5% Sodium Hypochlorite)

1. Hand washing/ukuhlamba izandla

(300ml Bleach per 20L water = 0.05% Sodium Hypochlorite)

- One and a half cups bleach + 20 litres water

2. Sterilising Surfaces/ukucoca iitafile

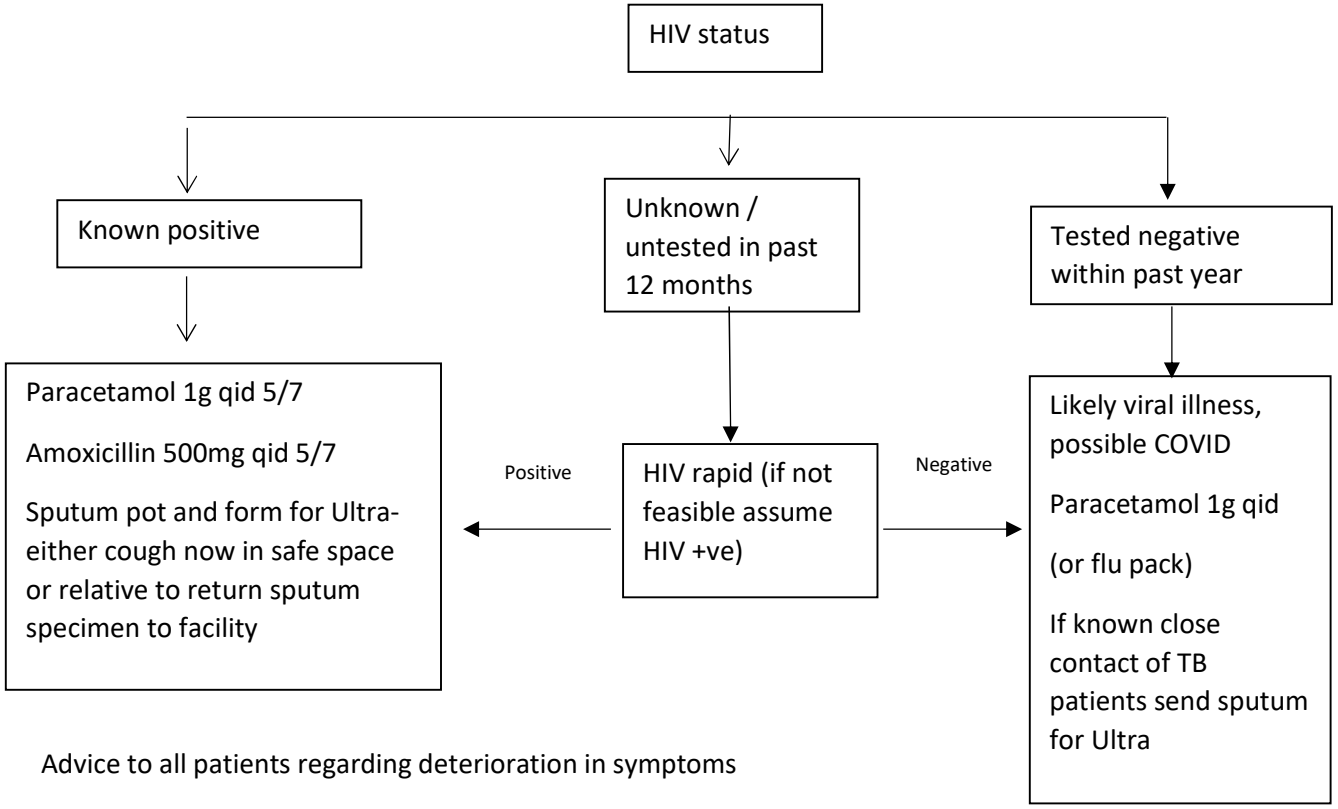
(2900ml bleach per 20L water = 0.5% Sodium Hypochlorite solution)

- 4 x 750ml (big) bottles bleach + 17 litres water
  (first pour in bleach into bucket then add water up to the 20 litre mark)

Examples of water container with tap




# Annex 3 – Clinical management algorithm for COVID-19 symptom positive patients




Advice to all patients regarding deterioration in symptoms

- Call facility if-
  - Symptoms persist for another 5 days
  - Significant clinical deterioration- unable to perform normal ADLs without becoming breathless
- Facility to determine if patient should return-
  - Clinician to apply clinical judgement based on discussion with patient regarding worsening of symptoms

# Annex 4 – Relevant forms

Covid-19 specimen submission form – 1 page

CRDM unique no: CRDM lab no: Trak no: Date received:

## SARS-CoV-2 (COVID-19) Specimen Submission form

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Centre for Respiratory Diseases and Meningitis

For SARS-CoV-2 testing only, for any other diagnostic testing please use this form:
http://www.nicd.ac.za/wpcontent/uploads/2020/02/CRDM_specimen_submission_form_v3_14_Feb_2020_Elect.pdf

| **Patient Information** | | **Submitter Information (contact person for results)** | |
|---|---|---|---|
| RSA identification number or Passport number **(REQUIRED*)** | | Surname | |
| | | First name | |
| Surname | | Hospital/Practice/Facility | |
| First name | | Laboratory | |
| Date of birth | | Country (if SA, Province) | |
| Age (if no DOB) | ☐ Years ☐ Months ☐ Days | Contact number (country code) | + ( ) |
| Gender | ☐ Male ☐ Female | Email address | |
| Province (Patient) | | | |

**Specimen Details**

**Is this a repeat specimen?** ☐ Yes ☐ No

**Specimen collection date:**

**Specimen type:**

| | | |
|---|---|---|
| ☐ Combined NP/OP swab | ☐ Nasopharyngeal (NP) aspirate | ☐ Pleural fluid |
| ☐ Nasopharyngeal (NP) swab | ☐ Bronchoalveolar lavage (BAL) | ☐ Sputum |
| ☐ Oropharyngeal (OP) swab | ☐ Tracheal aspirate (TA) | ☐ Serum |
| ☐ Other, specify: | | |

*Please note that either a RSA identification number or passport number is required to allow linking of repeat specimens. Testing will be delayed for specimens submitted without this information.

**Note:** Please access results via TrakCare

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division in the National Health Laboratory Service

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Version 3, 17 February 2020
CENTRE FOR RESPIRATORY DISEASES AND MENINGITIS
OUTBREAK RESPONSE, DIVISION OF PUBLIC HEALTH SURVEILLANCE AND RESPONSE

# Person under investigation (PUI) form for coronavirus disease 2019 (COVID-19): Request for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) testing

Internal use
CRDM unique no: _____

Tel: (+27) 386 6392/ (+27) 386 6410| Fax: (+27)11 882 9979| **Hotline: (+27)82 883 9920| (+27)66 562 4021**
Forward original forms with the specimen collected.
Email completed specimen submission form and PUI form to ncov@nicd.ac.za

**Today's date:** DD/MM/YYYY **Form completed by (Name, Surname):** **Contact number(s):**

All suspected COVID-19 cases are Category 1 **notifiable medical conditions** under "Respiratory disease caused by a novel respiratory pathogen". Notify as per NMC procedures. If using NMC app provide case ID indicated on alert email.

**Case ID :**

**Is this a:** **New clinical query** ☐ **Contact of a known case** ☐ **If contact of a known case, provide case details:** **Known case first name:** **Known case surname:** **Known case DOB:** DD/MM/YYYY

**Detected at point of entry?** Y☐ N☐ Unkn☐ **If yes, date:** DD/MM/YYYY **Please specify the point of entry:**

## PATIENT DETAILS

**Patient hospital number (if available):**
**First name:** **Surname:**
**DOB:** DD/MM/YYYY **Sex:** Male ☐ Female ☐
**Residency:** SA resident ☐ Non-SA resident ☐ Specify:
**Current residential address[1]:**
**Patient's contact number(s):** Include alternative number
**Please indicate occupation (tick all that apply):** Student ☐ Unemployed ☐ Working with animals ☐ Health laboratory worker ☐ Healthcare worker ☐ Facility name: Other ☐ Specify:

## DOCTOR'S DETAILS

**First name:**
**Surname:**
**Facility name:**
**Contact number/s:**
**Email address:**

## NEXT OF KIN CONTACT DETAILS (alternative contact details)

**First name:** **Surname:**
**Relationship to the patient:** **Contact number(s):**

## CLINICAL PRESENTATION AND HISTORY

**Date of symptom onset:** DD/MM/YYYY **Date of current consultation/admission:** DD/MM/YYYY

**Symptoms (tick all that apply):**

| | | | | | |
|---|---|---|---|---|---|
| Fever (≥38˚C) | Y☐ N☐ | Sore throat | Y☐ N☐ | Myalgia/body pains | Y☐ N☐ |
| History of fever | Y☐ N☐ | Shortness of breath | Y☐ N☐ | General weakness | Y☐ N☐ |
| Cough | Y☐ N☐ | Nausea/vomiting | Y☐ N☐ | Irritability/confusion | Y☐ N☐ |
| Chills | Y☐ N☐ | Diarrhoea | Y☐ N☐ | Other | Y☐ N☐ Specify |

## DIAGNOSIS

- Did the patient have clinical or radiological evidence of pneumonia Y☐ N☐
- Were chest X-rays (CXR) done: Y☐ N☐ If yes, CXR Findings:
- Did the patient have clinical or radiological evidence of acute respiratory distress syndrome (ARDS)? Y☐ N☐



Please refer to www.nicd.ac.za for most recent version of this document before use.

**This section is a prerequisite for testing, therefore, please fill out the below section to the best of your ability.**
**Laboratory testing will be delayed if forms are incomplete or were filled in incorrectly.**
**In the 14 days before symptom onset did the patient (mark all that apply):**

- Have close physical contact[2] with a **known** COVID-19 case? Y☐ N☐ Unkn☐
- If the patient has been in a close physical contact with a known COVID-19 case, please indicate contact setting:

  Healthcare setting ☐ Family setting ☐ Work place ☐ Public transport setting ☐ Other ☐ Specify:_____
- Patient is a healthcare worker (HCW) who was exposed to patients with severe acute respiratory illness, unless another aetiology has been identified to explain the clinical presentation of the HCW? Y☐ N☐ Unkn☐
- Is the patient part of a severe respiratory illness cluster of unknown aetiology that occurred within a 14-day period? Y☐ N☐ Unkn☐
- Patient has visited a health care facility (as a patient or visitor) in a country where hospital-associated COVID-19 cases have been reported? Y☐ N☐ Unkn☐ (if yes, complete travel section)
- Has the patient travelled to/from China or area/s with evidence of sustained SARS-CoV-2 (cause of COVID-19) human-to-human transmission, or a declared outbreak? Y☐ N☐ Unkn☐ (if yes, complete travel section)

**TRAVEL HISTORY**

**If patient traveled outside South Africa in the last 14-days, please complete section below for countries visited**

| Country and city or cities visited | Date of departure (travel to area) | Date of return (travel from area) |
|---|---|---|
| 1. | DD/MM/YYYY | DD/MM/YYYY |
| 2. | DD/MM/YYYY | DD/MM/YYYY |

**UNDERLYING FACTORS/CO-MORBID CONDITIONS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Asthma: | Y☐ N☐ Unkn☐ | Cardiac disease: | Y☐ N☐ Unkn☐ | Chronic kidney disease: | Y☐ N☐ Unkn☐ | Chronic liver disease: | Y☐ N☐ Unkn☐ |
| Chronic neurological/ neuromuscular disease: | Y☐ N☐ Unkn☐ | COPD/ Chronic pulmonary disease: | Y☐ N☐ Unkn☐ | Diabetes: | Y☐ N☐ Unkn☐ | Immuno-deficiency (excluding HIV) | Y☐ N☐ Unkn☐ |
| HIV: | Y☐ N☐ Unkn☐ | Is the patient virally suppressed? | Y☐ N☐ Unkn☐ | Recent viral load: | | On ARVs | Y☐ N☐ Unkn☐ |
| Obesity: | Y☐ N☐ Unkn☐ | Pregnancy: | Y☐ N☐ Unkn☐ | Trimester: | | Tuberculosis: | Y☐ N☐ Unkn☐ |
| Other: | Y☐ N☐ Unkn☐ | Specify: | | | | | |

**TREATMENT/MANAGEMENT**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Patient hospitalised: | Y☐ N☐ Unkn☐ | Admitted to ICU: | Y☐ N☐ Unkn☐ | Ventilation: | Y☐ N☐ Unkn☐ | On ECMO: | Y☐ N☐ Unkn☐ |
| Antibiotics: | Y☐ N☐ Unkn☐ | if Yes, list: | | Tamiflu/ other antiviral drugs: | Y☐ N☐ Unkn☐ | | |
| White cell count total: | | Differential neutrophils/lymphocytes%: | | | | | |

Has the patient been isolated at: Home ☐ Healthcare facility ☐ Not isolated ☐ Other ☐ Specify:

If patient has been isolated at home or at a healthcare facility, please provide date of isolation: DD/MM/YYYY

**OUTCOME (at time of specimen submission)**

| | | | |
|---|---|---|---|
| **Currently hospitalised:** | ☐ | | |
| **Discharged** | ☐ | **Discharge date:** | DD/MM/YYYY |
| **Transferred** | ☐ | **Name of facility:** | |
| **Died** | ☐ | **Date of death:** | DD/MM/YYYY |
| **Other** | ☐ | **Specify:** | |

*[1]If patient is a not a permanent resident, please provide their current residential address while residing in South Africa. [2]Close contact: A person having had face-to-face contact or was in a closed environment with a COVID-19 case; this includes, amongst others, all persons living in the same household as a COVID-19 case and, people working closely in the same environment as a case. A healthcare worker or other person providing direct care for a COVID-19 case, while not wearing recommended personal protective equipment or PPE). A contact in an aircraft sitting within two seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated. [3]Areas with presumed ongoing community transmission of SARS-CoV-2: http://www.nicd.ac.za/diseases-a-z-index/covid-19/*

***Please also complete the contact line list provided and submit with specimen submission form and PUI form to ncov@nicd.ac.za***

# COVID-19 CONTACT LINE LIST

Complete a contact line list for every person under investigation and every confirmed Coronavirus disease 2019 (COVID-19) case

| Details of person under investigation/confirmed COVID-19 case | | | |
|---|---|---|---|
| NICD Identifier | | Date Symptom Onset | DD/MM/YYYY |
| Surname | | Name | |
| Contact number | | Alternative number | |
| Travel (provide details of all: 7 days before onset) | | Travelled by | Bus ☐ Plane ☐ |
| Air/bus line | | Flight/bus # | Seat # |

| Details of health official completing this form | | Today's date | DD/MM/YYYY |
|---|---|---|---|
| Surname | | Name | |
| Role | | Facility name | |
| Email address | | Telephone number(s) | |

Details of contacts (*With close contact[1] 7 days prior to symptom onset, or during symptomatic illness.*)

| | Surname | First name(s) | Sex (M/F) | Age (Y) | Relation to case[2] | Date of last contact with case | Place of last contact with case (Provide name and address) | Residential address (for next month) | Phone number(s), separate by semicolon | HCW?[3] (Y/N) *If Yes, facility name* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | DD/MM/YYYY | | | | |
| 2 | | | | | | DD/MM/YYYY | | | | |
| 3 | | | | | | DD/MM/YYYY | | | | |
| 4 | | | | | | DD/MM/YYYY | | | | |
| 5 | | | | | | DD/MM/YYYY | | | | |
| 6 | | | | | | DD/MM/YYYY | | | | |
| 7 | | | | | | DD/MM/YYYY | | | | |
| 8 | | | | | | DD/MM/YYYY | | | | |

[1] *Close contact: A person having had face-to-face contact (≤2 metres) or was in a closed environment with a COVID-19 case; this includes, amongst others, all persons living in the same household as a COVID-19 case and, people working closely in the same environment as a case. A healthcare worker or other person providing direct care for a COVID-19 case, while not wearing recommended personal protective equipment or PPE (e.g., gowns, gloves, NIOSH-certified disposable N95 respirator, eye protection). A contact in an aircraft sitting within two seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated.* [2] *Chose from: Spouse, Aunt, Child, Class mate, Colleague, Cousin, Father, Friend, Grandfather, Grandmother, Healthcare worker taking care of, Mother, Nephew, Niece, Other relative, Uncle.* [3] *Healthcare worker.*



*Continues on reverse*

Please refer to www.nicd.ac.za for most recent version of this document before use.

Version 5, 14 February 2020

## 9.5 Appendix 5: Collection of nasopharyngeal and oropharyngeal swab and nasopharyngeal aspirate

### Type of swabs

Only nylon or rayon flocked nasopharyngeal and oropharyngeal swabs with perforated, flexible plastic shaft must be used for collection of specimens. There is evidence to suggest some benefit to using flocked swabs for recovery of pathogens over other types. An appropriate size of the nasopharyngeal swab should be used, paediatric swab for children and adult swab for older children and adults. Cotton-tipped, calcium alginate swabs or swabs with wooden shafts should not be used as residues present in these materials may inhibit PCR assays.

### Collecting the nasopharyngeal swab

- Gently insert nasopharyngeal flocked swab into the nostril aiming backwards, along the floor of the nasal cavity, until the nasopharynx is reached. Be careful not to insert swab upwards. If resistance is encountered during insertion of the swab, remove it and try the other nostril. The distance from the nose to the ear gives an estimate of the distance the swab should be inserted
- Gently rotate the swab and hold in place for a few seconds
- Slowly withdraw swab
- Unscrew and remove the cap from the tube with transport medium.
- Insert the swab directly into a vial containing universal transport medium (UTM)
- Break plastic shaft at the break point so that it can fit in the universal transport medium tube
- Close the tube with the lid
- Refrigerate at 2-8 °C

### Collecting oropharyngeal swab (OPS)

- Keeping the same pair of gloves on, and holding the UTM with the nasopharyngeal swab in, take a second flocked swab and open it at the plastic shaft
- Ask the patient to tilt their head back and open mouth wide
- Hold the tongue down with a tongue depressor
- Have the patient say "aahh" to elevate the uvula
- Swab each tonsil first, then the posterior pharynx in a "figure 8" movement
- Avoid swabbing the soft palate and do not touch the tongue with the swab tip as this procedure can induce the gag reflex.
- Insert the swab directly into the same UTM vial containing the nasopharyngeal swab
- Break plastic shaft at the break point so that it can fit in the universal transport medium tube
- Close the tube with the lid

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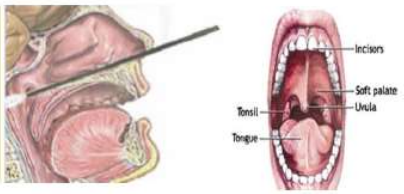


**Figure 1:** How to collect a nasopharyngeal swab (left) and oropharyngeal swab (right)

# Annex 6 – Cleaning and disinfection recommendations

COVID-19 Infection prevention and control guidelines for South Africa (version 1)

| Type | Recommendations | Alternatives |
|---|---|---|
| Patient placement | See engineering controls | Shared toilet facilities to be cleaned regularly (2- 4 hr) |
| Hand Hygiene | Before and after each patient contact (5 Moments of Hand Hygiene)<br>Before wearing PPE<br>After removing PPE | Use ABHR between patients if hands not visibly soiled |
| PPE - for contact and droplet precautions[8]<br>Gloves non sterile, face mask, apron (or gown), goggles or face shield, N95 respirator | | |
| Environmental cleaning | Frequent cleaning 2- 3 times/ day. Water, detergent. Wipe over with disinfectant such as 1:1000 ppm available chlorine or 70% alcohol | Use universal wipes which is a combination of detergent and disinfectant. |
| Terminal cleaning | Remove all linen, healthcare waste and medical equipment and send for disinfection or discard. Clean with water and detergent. Wipe with disinfectant | Use universal wipes which is a combination of detergent and disinfectant |
| Clinical & Patient care equipment | -Dedicated equipment.<br>-Disposable where possible<br>-Shared equipment to be heat or chemical disinfected after cleaning. | None |

| Product | Chlorine available | How to dilute to 0.5% |
|---|---|---|
| Sodium hypochlorite – liquid bleach | 3.5% | 1 part bleach to 6 parts water |
| Sodium hypochlorite – liquid bleach | 5% | 1 part bleach to 9 parts water |
| NaDCC (sodium dichloro-isocyanurate) – powder | 60% | 8.5 grams to 1 litre water |
| NaDCC (1.5g/tablet) - tablets | 60% | 6 tablets to 1 litre water |
| Chloramine - powder | 25% | 20 grams to 1 litre water |

# Annex 7 – Donning and doffing PPE

https://player.vimeo.com/external/400607941.hd.mp4?s=af075e8c9647a23114424834c1e73f866a73e5f7&profile_id=174&download=1



WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITISER AFTER REMOVING GLOVES AND AFTER REMOVING ALL PPE

**SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (DONNING)**

**Wash your hands before putting on the PPE.** PPE should be put on in an order that minimises contamination. The apron, mask, goggles and gloves must be put on in that order. See guidance on each below.

**Apron**

- ***Wash hands***
- Slip it over the head and tie the strings behind the back

**Mask or N95 Respirator**

- Secure each tie or elastic at the middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator by blowing into it (air should not leak out)

**Goggles or Visor**

- Place over face and eyes
- Adjust band to fit comfortably

**Gloves**

- Hold the edge of the glove as you pull it over your hand
- Extend to cover wrist
- Once gloved, do not touch other surfaces

**SEQUENCE FOR TAKING OFF PERSONAL PROTECTIVE EQUIPMENT (DOFFING)**

**Wash your hands before taking off the PPE.** PPE should be removed in an order that minimises contamination. The gloves, apron, goggles/visor, and mask must be removed in that order.* **Wash your hands after taking off the PPE.** Discard PPE in infectious waste container. See guidance below.

**Gloves**

- ***Wash hands***
- Securely grasp the outside of glove with the opposite gloved hand; peel off; discard as infectious waste
- Slide the fingers of the un-gloved hand under the remaining glove at the wrist; peel off; discard as infectious waste

**Apron or Gown* (See Note)**

- ***Wash hands***
- Unfasten or break
- Pull the apron away from the neck and shoulders, touching the inside of the apron only and bring it forward and over the head
- Turn the apron inside out, fold or roll into a bundle and discard as infectious waste

**Goggles or Visor (See Note)**

- Remove goggles/visor from the back by lifting head band or ear pieces
- Place in designated receptacle for disinfecting

**Mask or N95 Respirator**

- Untie or break bottom ties, followed by top ties or elastic.
- Remove by handling the ties only and discard as infectious waste.
- ***Wash hands***

***Note.** When it is practically difficult to remove the apron/gown before the visor/goggles, then the visor/goggles may be removed before the apron/gown.

Figure 6: Poster for donning and doffing of PPE

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# Annex 8- Management and infection control for patients referred to CHC emergency department

## Emergency Department

*Location*

- Ensure area of emergency department dedicated to care of patients suspected of having COVID-19 with barrier separating from other areas of the emergency department

*Staffing*

- Doctor: Clinician working in emergency department, if more than 1, designate a single person to care for COVID-19 suspected patients
- Nurse: Dedicate 1 nurse per shift to work in this area

*Station set-up*

- Room must have oxygen supply, either from the wall or using a cylinder

*Appropriate IPC and PPE use for staff*

- Doctor and nurse to wear surgical mask, goggles or eye visor, non-sterile gloves and disposable gown.
- Must change all above PPE between each patient
- Disinfect station between every patient

*Station procedure*

- Patients require full assessment by doctor beginning with history, examination and vital signs
- Patients likely to require blood tests, ECG and chest X-ray
- Patient may require COVID-19 testing (where possible co-ordinate with Testing station at facility)
- Guideline for the management of patients with severe symptoms of COVID-19 are available:

  https://www.nicd.ac.za/wp-content/uploads/2020/03/Clinical-Management-of-COVID-19-disease_Version-3_27March2020.pdf

# Annex 9 – PPE guidance – who to wear and when

COVID-19 Infection prevention and control guidelines for South Africa (version 1)

| TYPE OF PPE | CLINICAL STAFF (nurses, doctors, EMS) Providing direct care to COVID-19 patients or patients with respiratory symptoms | NON-CLINICAL STAFF (admin staff, catering staff) coming into distant contact with COVID-19 patients and contaminated surfaces | NON-CLINICAL STAFF (cleaners) coming into distant contact with COVID-19 patients and contaminated surfaces | PATIENTS with RESPIRATORY symptoms | PATIENTS without RESPIRATORY symptoms |
|---|---|---|---|---|---|
| Gloves | Non-sterile gloves. Change between patients | Non-sterile gloves. Change when leaving COVID-19 area | Reusable long rubber utility cleaning gloves (ideally up to elbow) Change after completed cleaning contaminated area | None | None |
| Face cover type | **Surgical Mask** for general care of COVID-19 patients<br><br>**N95 respirator** for aerosol generating procedures on COVID-19 suspects/cases | **Surgical mask** when within <1m of a patient with respiratory symptoms (one per shift, if integrity maintained) | **Surgical mask** when within <1m of a patient with respiratory symptoms | **Surgical mask** worn when in contact with others | None |
| Aprons | Change when visibly contaminated. Discard after aerolization procedure | Change when leaving COVID-19 area | After each work session (in absence of clinical contact) | None | None |
| Face shields, or visors, or goggles, or other eye covers | Wash clean, disinfect and reuse | None | Wash clean, disinfect and reuse | None | None |

Table 2: Application for appropriate PPE use