

COVID-19 Outbreak response and investigation in Health Care Facilities

Kerrigan McCarthy

Consultant Pathologist National Institute for Communicable Diseases 25 June 2020

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



Source:

Will be on the NICD website from 26 June 2020 in the COVID-19 section



COVID-19 Outbreak investigation manual

A practical guide and manual for healthcare facilities

(including care homes for the elderly, infirm or mental health care users)

in two parts: Part A: Practical guide Part B: Manual and appendices

DRAFT not signed off

Version 1.

25 June 2020

Writing team: Lesley Bamford, Rebecca Berhanu, Lucille Blumberg, Angela Dramowski, Anchen Laubscher, Caroline Maslo, Elizabeth Mayne, Kerrigan McCarthy, Shaheen Mehtar, Tash Meredith Jeremy Nel, Nilesh Patel, Olga Perovic, Mande Taubkin, Juno Thomas, Anne von Gottberg,

The infection prevention and control audit checklist was prepared by Shaheen Mehtar, Angela Dramowski, Briette du Toit and Ronel Steinhobel

COVID-19 outbreaks in health care facilities

- Broad principles and definitions
- Steps in outbreak investigation and response
- Leadership, co-ordination and communication and management of psychological responses
- Initial responses
 - Determination of the infectious period
 - Identification of contacts
 - Quarantine and isolation
- Working up complex outbreaks
- Prevention



Electron micrographs of SARS-CoV-2, grown in the NICD BSL-4 and photographed by Dr Monica Birkhead, NICD



```
NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES
Division of the National Health Laboratory Service
```

Broad principles and definitions

COVID-19 is an undesirable organism in a health care facility COVID-19 infections in vulnerable persons can lead to excess morbidity and mortality Outbreaks cause immense disruption to health care services





All health care facilities (HCF) will be at risk of undetected COVID-19 infections (symptomatic and asymptomatic) during the COVID-19 pandemic It may not be possible to prevent COVID-19 from entering a facility, but we can

Detect cases early

Ensure that it is very difficult to transmit COVID-19 amongst staff and patients





Broad principles and definitions

- Health care facility
 - A hospital, day ward, general practice, home for aged, indigent or mental health care users
- Health care worker
 - Any person who works on the premises of a health care facility
- An Index case/s
 - A HCW or patient who test positive for COVID-19
- A Health-care associated outbreak
 - Detection of a single or multiple laboratoryconfirmed case/s in a HCW or patient where the diagnosis was not suspected on admission

- A contact of a confirmed case
 - <u>A health care worker contact</u>: any HCW in direct contact with a COVID-19 patient, within 1 meter for 15 minutes or longer, without appropriate PPE (mask and eye protection) and/or experienced failure of PPE.
 - <u>A contact who is a patient (or visitor) exposed</u> during hospitalisation: any patient hospitalised in the same room or sharing the same bathroom as a COVID-19 patient, visitors to the patient, or other patient in the same waiting area or outpatient examination room who spent 15 minutes or longer within 1 meter with the index case;
 - <u>A contact who is a patient (or visitor) exposed</u> <u>during an outpatient visit</u>: Anyone in a closed environment at the same time as a person with a confirmed diagnosis of COVID-19; or anyone within 1m of the COVID-19 patient in any part of the hospital for >15 minutes.

Steps in outbreak investigation and response

• A roadmap

- What is required
- Where are we going?





W NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Steps in outbreak investigation and response

• A roadmap

- What is required
- Whereare wegoing?





W NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Steps in outbreak investigation and response

- How do we co-ordinate and arrange outbreak responses?
 - There are three major components to co-ordinate
 - Epidemiology and clinical management
 - Investigating the extent of cases
 - Quarantine and isolation
 - Putting the epidemiology together
 - Co-ordination and management
 - Leadership, communication, decisionmaking, staffing
 - Infection prevention and control
 - Assessment of IPC practices
 - Identification of gaps in IPC
 - Strengthening IPC practice



NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Leadership, co-ordination and communication

- Leaders need to remember the aims of the investigation
 - To identify source of outbreak so as to
 - To contain and prevent further transmission,
 - To identify gaps in and strengthen the IPC measures which facilitate early detection and response to a case of COVID in a health care facility

- Leaders need to set the tone of the investigation
 - Non-retributive it's not 'someone's fault'
 - Co-operation is the name of the game 'we can all work to keep everyone safe'
 - Learn from our mistakes 'Let's do it better next time'
 - Empathetic 'this is very stressful for us all, here is how we can look after ourselves

Leadership, co-ordination and communication

- Communication is key
 - WHO principles of communication in outbreaks
- Identify stakeholders who need to know
 - Especially staff, organised labour, and patients
- First message to the institution within 12-24hrs
 - What is known
 - What is not known
 - What authorities are doing
 - What we can do to prevent infection and keep calm

PRINCIPLE	DESCRIPTION
TRUST	Communicate in ways that build, maintain or restore trust between health care workers, patients, and key stakeholders.
ANNOUNCING EARLY	Proactive communication is necessary even if information is complete so that affected persons may be alerted, and the threat of disease may be minimised. Early announcement prevents distribution of inaccurate or false information that would erode trust and increase fear.
TRANSPARENCY	Transparency supports the development of trust. The acknowledgement that information is incomplete can be supplemented by details on what authorities are doing to obtain additional data.
REGULAR COMMUNICATION	Frequent communication at appropriate intervals builds trust. Intervals may be determined by the nature of the outbreak, the speed with which the disease is transmitted and the implications for life and livelihood. For example, statements can be release of statements at specific times of day, or emails distributed daily to specific stakeholders.
LISTENING	Listening is an essential component of outbreak investigation. Authorities need to understand how their messages are being heard and interpreted. Authorities need to understand the 'mood' and disposition of their stakeholders so that communication can adequately address their fears and concerns.
PLANNING	A generic outbreak communication plan should be drawn up as part of IPC preparedness. This plan should be tailored to the context at the outset of an outbreak, and adapted as the needs require. The plan should include identification of stakeholders, appropriate communication media, key messages and desired behaviours.



- Convene the outbreak investigation committee
 - Head of the facility (CEO/CMO)
 - IPC specialist
 - Senior matron
 - A senior clinician/medical/ infectious disease specialist
 - Housekeeping/cleaning services
 - Data manager.
 - Human resources
 - Organised labour
- Arrange to meet asap (within 12 hrs)
 - Use a checklist for outbreak investigation as an agenda for the meeting
 - Appendix 1 of NICD COVID outbreak guidelines'

• Arrange for the index case/s to be investigated

COMMUNICABLE DISEAS

- Dates of symptom onset, COVID-19 testing, admission, procedures
- Locations in the health facility on these dates

COVID-19 Institutional Outbreak – Case i	investigation form
Section A: Facility and respondent details	
Name of facility:	Name of person completing form:
Address of facility:	Role of person completing form:
Facility district/province:	Date of form completion:
	Time of form completion:
Section B: Details of COVID-19 case	
First Name:	RSA ID number/passport:
Last name:	_ Age (years and months):
Date of birth:	Sex at birth: Male D Y / N D Female: D Y / N D
Role of person in the institution:	
HCW DY/ND if Y, what kind of HCW?	Patient DY/ND
Doctor 🗆 Y / N 🗆 🛛 Nurse 🗆 Y / N 🗆	If patient, date of admission:
Other D Y / N D State:	

Use Case investigation form from 'NICD COVID outbreak guidelines', Appendix 2

Initial response: Determine the infectious period

- A person is deemed infectious for 48 hrs before symptom onset (or test date if asymptomatic), until 14 days post symptom onset
- Determine the
 - dates that the person was in the facility whilst infectious
 - Where the person was on those dates
- Use these dates to determine who the contacts are



NATIONAL INSTITUTE FOR COMMUNICABLE DISEASE

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 days

Initial response: Implications of the infectious period

- Critical
 - Was index case in the facility for less than 3 days whilst infectious?
 - If yes....
 - Less complicated scenario as there has been no time for onward transmission
 - If no....onward transmission is likely

INDEX CASE	SCENARIO DESCRIPTION	CHALLENGES POSED BY THIS SCENARIO
SINGLE CASE OUT	BREAK	
HOSPITALISED PATIENT	Detected within 2 days of admission to a low COVID risk section of the facility and therefore appropriate IPC measures were not taken.	The early detection of the case implies that primary contacts will not yet be infectious, and therefore the case can be contained.
HEALTH CARE WORKER	The infectious period in the work place is 2 days or less as determined by the onset of symptoms or known date of exposure to a confirmed COVID-19 case	The HCW may or may not have utilise appropriate IPC measures when interacting with colleagues or patients. However the early detection of the case implies that primary contacts will not yet be infectious, and therefore the case can be contained.
MULTIPLE CASE O	UTBREAK	
HOSPITALISED PATIENT	Detected after 3 or more days since admission to a non-PUI ward.	Appropriate IPC measures were not taken. Primary contacts may have transmitted infection to secondary contacts.
HEALTH CARE WORKER	The HCW was present in the facility for 3 or more days whilst infectious (based on onset of symptoms or known date of exposure to confirmed case)	The HCW may or may not have utilised appropriate IPC measures when interacting with colleagues or patients. Primary contacts may have transmitted infection to secondary contacts.
HOSPITALISED PATIENT	A patient who is known to have tested negative whilst admitted or before admission now tests positive for COVID- 19	This suggests an unknown nosocomial source of infection. Contacts should be identified and tested for COVID-19. Source identification may not be possible. This scenario indicates a lapse in IPC and COVID-19 prevention measures.
HEALTH CARE WORKER	The infectious period is not known as the HCW remains asymptomatic	This suggests an unknown community or nosocomial source of infection. Contacts should be identified and tested for COVID-19. Source identification may not be possible.

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASE



contacts

- Identification of all persons in contact with the case whilst infectious
- Conduct a risk assessment for each using WHO tool
 - Close contact not using PPE correctly AND within 1m for 15 minutes, OR direct touch of patient
 - 'Low-risk contact' using PPE correctly with any kind of contact, or not meeting the above definition
- Assessment of symptoms in contact
 - All symptomatic contacts must be tested asap, and put into isolation
 - Asymptomatic contacts need to be tested ONLY if the infectious period is >2 days

Health workers exposure risk assessment and management in the context of COVID-19 virus

Interim guidance 4 March 2020



Coronavirus disease (COVID-19) was first detected in Wuhan city, China in December 2019. On 30 January 2020, the WHO Director General declared that the current outbreak constituted a Public Health Emergency of International Concern.

Current available evidence is that the COVID-19 virus is transmitted between people through close contact and droplets. People most at risk of infection are those who are in contact with a COVID-19 patient and/or who care for COVID-19 patients. This inevitably places health workers at a high risk of infection.

https://apps.who.int/iris/bitstream/handle/10665/331340/WHO-2019-nCov-HCW_risk_assessment-2020.1-eng.pdf

Initial response: Identification and management of

contacts



https://www.nicd.ac.za/diseases-a-zindex/covid-19/covid-19guidelines/symptoms-monitoringand-management-of-essentialworkers-for-covid-19-relatedinfection/

Initial response: Conducting an Infection Prevention and Control audit

- Visit the affected wards with IPC coordinator
 - Review the following components of IPC
 - Administrative
 - Environmental
 - PPE
- Identify gaps
- Propose immediate short-term recommendations

Topic	Yes	No	comment
ADMINISTRATIVE CONTROLS			
Structure			
There is an outbreak response team (OBT)			
There is a written outbreak management plan (ask to see)			
COVID-19 IPC Guidelines are available (ask to see)			
IPC practitioner(s) is part of the OBT			
IPC practitioner is full time, dedicated to IPC			
IPC practitioner has had at least 6 months training in IPC			
Daily meetings of the OBT including an IPC report (see minutes)			
Regular reports to Province or District (see report)			
Procurement structures for IPC equipment (PPE), are in place			
Restricted access control to the facility is in place			
Total answered 'Yes': x/10 x 100=	10) /
IPC Provision in clinical areas			
Alcohol based hand rub (3 litres/wd/ day; or 6 litres/ ICU/ day)			
Running water; liquid soap; paper towels (All stations)			
Adequate number of medical masks (2-3/ HCW/ shift)			• T
N95 respirators for AGP (1/HCW; extended use)			
Goggles/ visors (1/ HCW- extended use)			
Plastic aprons (2-3/ HCW/ shift; single use only)			
Gowns (2-3/ HCW/ shift; for aerosol generating procedures, single shift use only)			
Supply of Gloves (16-20/ HCW/ shift, single use only			
Signage for Droplet/ Contact precautions (COVID-19)			
IPC information leaflet for patients, visitors and staff			
Total answered 'Ves': x/10 x 100-	10	1	

General Information	Name of auditor	
Name of Healthcare facility	Date of visit	
District/ Province:	Total beds (#)	Total COVID-19 (dedicated)(#)
Bed allocation in HCF (total)		
ICU beds		
Clinical staff (patient: staff ratio)		
Nurses		
Doctors		
 Physiotherapist 		
Pharmacy		
Other		
Non clinical staff working in clinical areas		
Porters		
Cleaners		
Security		
Administrative staff		
Other		
No of HCW infected with COVID-19 to date		
There is an Occupational Health Dept or designated person on site		

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

> Appendix 6 in NICD COVID-19 Outbreak guidelines on NICD website from tomorrow.

Initial response: Conducting an Infection Prevention and Control audit

- Cohorting and moving patients and HCW
 - COVID-19 positive patients
 - Isolate all patients who are COVIDpositive and infectious
 - If >1 patient is COVID-19 positive, these can be cohorted
 - Exposed patients (i.e. who are contacts)
 - Isolate for 14 days, issue with masks
 - Monitor for symptoms
 - Cohorting NOT advised

- Environmental decontamination
 - Wipe down frequently touched surfaces.
 - Defogging not necessary

Product	Chlorine available	How to dilute to 0.1% (1:1000ppm) (for COVID cleaning)
Sodium hypochlorite – liquid bleach	3.5%	1 part bleach to 32 parts water (e.g. 30ml bleach in 970ml water)
Sodium hypochlorite – liquid bleach	5%	1 part bleach to 47 parts water (e.g. 20ml bleach in 980ml water)
NaDCC (sodium dichloro-isocyanurate) – powder	60%	1.7 grams to 1 litre water
NaDCC (1.5g/tablet) – tablets	60%	1 tablet to 1 litre water
Chloramine – powder	25%	4 grams to 1 litre water

Working up complex outbreaks

- If index patient/s have been infections and in the health care facility for >2 days, onward transmission may have occurred
- All CLOSE contacts should be swabbed for COVID-19
- A line list should be made
- An epidemiological curve should be created
- Generate hypotheses regarding possible sites of infection and ask more questions





Working up complex outbreaks

 Put these together with IPC audit findings to generate hypotheses to identify where the breach in IPC took place



	positive pa	tients at l	lospital X	1																							
VISUALI	SATION O	F TIMELIN	ES																								
	KEY									WARD	a	dmit	ted i	nurs	ing i	n the	war	d									
	Date of te	sting		t						In quar	antine																
	Positive te	est		т						MICU																	
	Date of ad	mission		colo	ı					COVID	ward																
	infectious	period								SICU																	
	Symptom	onset		s						Surgica	l ward	1															
	Assympto	matic		ns						Surgica	l ward	2															
										SCCU																	
		-									_			3322243													
Pt ID	# contacts (HCW)	# contacts tested	# positive contacts	Mar	rch											April											
Pt ID	# contacts (HCW)	# contacts tested	# positive contacts	Mar 30	r ch 31	1	2	3	4	5 (5 7	8	9	10	11	April 12	13	14	15	16	17	18	19	20	21	22	2
Pt ID	# contacts (HCW) 18 (4)	# contacts tested 18	# positive contacts 0	Mar 30	r ch 31	1	2	3 tT	4	5 (5 7	8	9	10	11	April 12	13	14	15	16	17	18	19	20	21	22	2
Pt ID A B	# contacts (HCW) 18 (4) 49 (20)	# contacts tested 18 22	# positive contacts 0 1	Mar 30	rch 31	1	2	3 tT	4	5 (5 7	8 stT	9	10	11	April 12	13	14	15	16	17	18	19	20	21	22	2
Pt ID A B B1	# contacts (HCW) 18 (4) 49 (20) 17 (10)	# contacts tested 18 22 8	# positive contacts 0 1 0	Mar 30	7 ch 31	1	2	3 tT	4	5 (5 7	8 stT	9	10	11	April 12	13	14	15 st	16 T	17	18	19	20	21	22	2
Pt ID A B B1 C	# contacts (HCW) 18 (4) 49 (20) 17 (10) 45 (24)	# contacts tested 18 22 8 15	# positive contacts 0 1 0 1	Mar 30	7 ch 31	1	2	3 tT	4	5 (5 7	8 stT	9	10	11 st	April 12	13	14	15 st	16 T	17	18	19	20	21	22	2
Pt ID A B B1 C C1	# contacts (HCW) 18 (4) 49 (20) 17 (10) 45 (24) 17 (12)	# contacts tested 18 22 8 15 17	<pre># positive contacts 0 1 0 1 0 1 0 0</pre>	Mar 30	r ch 31	1	2	3 tT	4	5 (5 7	8 stT	9	10	11 st	April 12	13 T InsT	14	15 st	16 T	17	18	19	20	21	22	2
Pt ID A B B1 C C1 D	# contacts (HCW) 18 (4) 49 (20) 17 (10) 45 (24) 17 (12) 38 (16)	# contacts tested 18 22 8 15 17 17	<pre># positive contacts 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</pre>	Mar 30	r ch 31	1	2	3 tT	4	5 (5 7	8 stT	9	10	11 st	April 12	13 T InsT	14	15 st	16 T	17	18	19	20	21	22	2

Working up complex outbreaks: ward, unit or facility closure?

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

- Ward/unit closure and definitely facility closure is an **extreme measure**
- Consider the following before closure: (2 or more 'yes' answers would make closure a consideration

	FACTOR UNDER CONSIDERATION	YES	NO
1	Are there multiple COVID-19 cases in patients or amongst HCW in the ward/unit?		
2	Were there two or more undetected and infectious COVID-19 cases in the ward or unit simultaneously?		
3	Are there sufficient staff trained in IPC who are able to work in the ward?		
4	Are there sufficient clinical staff to support ward/unit activities?		
5	Is there sufficient administrative and general assistance to support ward activities?		
6	Do audit findings indicate that IPC practices including hand hygiene, environmental cleaning and use of personal protective equipment are satisfactory in all respects?		

Reporting and declaring the outbreak closed

- An outbreak may be 'closed' when 2 successive incubation periods have passed without a new case being detected
 - Assuming adequate surveillance and detection methodology in place
- BUT
 - During the pandemic, no facility is essentially 'free of risk' as cases may continually be brought into the facility from the community

• Daily, interim and final outbreak reports

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASE

- Daily summaries from the Outbreak Response team lead
- Interim report once the outbreak is decleared over
- Final report once all data is in, and hypotheses are closed

SECTION	A GUIDE TO CONTENT.
EPIDEMIOLOGY AND SURVEILLANCE	Update and interpretations of
	Line lists
	Epidemiological curves
	 Transmission diagrams
	Further investigations required to identify source
LABORATORY TESTING AND RESULTS	Laboratory results from cases and contacts
INFECTION PREVENTION AND CONTROL	Findings from IPC assessments
	New processes and procedures to prevent transmission of additional cases
	Training and refresher activities
HEALTH WORKFORCE MANAGEMENT	Update regarding persons in quarantine or in isolation
	Staffing arrangements to support continuity of service
COMMUNICATION	Media reports
	Engagement with organised labour
	Engagement with local and provincial authorities



Prevention is key

Administrative controls

- Understanding risks to your facility
- The decision where to screen your patients?
- How to screen patients
- Who will screen patients
- Procedures for management of persons who meet case definitions for testing
- Is testing for COVID-19 in this facility necessary or shall I refer clients to a lab?

Environmental controls

- Ensuring adequate ventilation
- Cleaning the environment





COVID-19 Disease: Infection Prevention and Control Guidelines Version 2 (21st May 2020)

Personal protective equipment and risk reduction

- Provision of appropriate equipment and tools
- When to wear what masks
- Encouraging handwashing
- Procedures for IPC when collecting specimens.



- The two-fold aims of prevention
 - Early detection of cases
 - Symptom screening for all staff on entry
 - Consider random staff testing esp in high risk areas
 - Pre-screening of elective admissions
 - Making transmission in the facility difficult
 - Social distancing
 - Universal masking
 - Hand sanitising
 - Engineering interventions

		Administrative interventions		Engineering interventions		Equipment
	Visito	rs and Patients	1.	Ensure adequate natural or mechanical ventilation for	Visi	tors, Patients and Staff
	2	Screen all visitors for COVID-19 symptoms		areas where aerosol-	Uni	versal masking
	3	Restrict hospital admissions to essential stavs		generating procedures are	1	Require all outpatients
	υ.	Restrict hospital dampsions to essential stays		performed often e.g. ICU's		and visitors to wear a
	4.	De-escalate non-urgent admissions and postpone elective		performed often eighted b		non-medical (cloth) mask
		procedures	2.	Increase the frequency of		while inside the HCF
	5	Triage and screen all patients for COVID-19 symptoms before		surface and equipment	2.	Require all inpatients
	2.	entering the HCE according to guidelines		cleaning and disinfection in		with or without
	6.	Triage patients with possible COVID-19 symptoms to a separate		the HCF.		symptoms of acute
		assessment area	3.	Increase the availability of	×.	respiratory infection to
				alcohol hand rub at the		wear a surgical mask.
	7.	Admit PUI and COVID-19 infected patients to dedicated isolation		point of care and ensure	2	
		wards		access to soap, water and	3.	Require all nealthcare
	8	Avoid movement and transfers of natients and staff between		handtowels.		workers to wear masks at
	0.	wards	_			all times whilst in the
			4.	Provide dedicated areas for		lacinty
	9.	Implement a standardised COVID-19 symptom/exposure checklist		cleaning and disinfection of	4.	All administrative staff
		for admissions		re-usable PPE e.g. visors		and support staff with
	10	Screen all hospital inpatients daily for COVID-19 signs and		and goggles		limited patient contact,
		symptoms	5.	Create greater physical		use non-medical (cloth)
		- finipeoins		separation between beds to		masks.
	11.	For inpatients, maintain a low threshold to isolate, re-assess and		reduce droplet		
		screen for SARS-CoV-2 if developing pyrexia of unknown origin or		contamination of surfaces	PPE	policies and training
		new respiratory symptoms		e.g. convert a 6-bed to a 4-	1.	Ensure all staff are
	12.	Consider testing all new ICU admissions for SARS-CoV-2; if		bed cubicle; or use		DDE policios
		laboratory capacity allows, consider testing of all patients on		partitions or screens	2	Ensure a stable supply of
		admission.		between beds in ICUs	2.	adequate quality PPF
			6.	Implement strict physical		adequate quality in c
	Staff	As fear as a scribble, succide as we are a first fit has some COVID and		distancing in the workplace	3.	Provide ongoing training,
	1.	As far as possible, avoid movement of staff between COVID and		i.e. on ward rounds, in tea		PPE buddies and visible
	2	Consider staff off duties for extens parieds before returning to		rooms, the cafeteria, staff		reminders of how to don
	2.	consider start of duties for extene periods before returning to		meetings		and doff PPE in COVID
	3	All staff to undergo repeated training regarding COVID-19 risk	7.	Close public cafeteria		areas.
	J.	reduction		seating areas.		
	4	Ensure agency staff or locums are familiar with the HCE's COVID-	8.	Keep medical notes outside		
		19 policies		of the patient cubicle; keep		
	5.	Encouraged all staff receive influenza vaccination to reduce		paper notes in a plastic file		
		frequency of flu-like illnesses and absences		and prescription charts in		
	6.	Perform daily self-monitoring for COVID-19 symptoms using a		plastic sleeves that can be		
		form, an app or a		wiped over with 70%		
	7.	buddy symptom checking system.	•	Encure tea rooms are		
	8.	Ensure staff are familiar with how to report symptoms to their	5.	spacious and well-		
		line manager		ventilated and stagger tea		
	9.	Support staff to travel to and from work in ways that minimise		times to avoid crowding		
		community exposure to COVID-19		to arona a orranig.		
1			1			

Personal Protective

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



What are we learning?

Outbreaks and public health events have shown us

- The people that service our health care system
 - ARE responsive, and
 - DO have capacity to change and adapt
 - CAN do what is required if the motivation is sufficient
- Preventive health services need major emphasis and investment.
- Health promotion and wellness messaging is critical
- Community engagement and ownership are essential to achieve co-operation with social distancing



Having worked through a number of larger public health crises in our country, I've learned that every outbreak leaves a legacy behind it that allows us to harness the good, or the gift, that there was in that outbreak in terms of the way we organise ourselves as people, and the way we look after and care for ourselves.

> - Dr Kerrigan McCarthy, Specialist Pathologist, NICD

Learn more to Be READY for #COVID19: www.sacoronavirus.co.za

NICD Hotline: 0800 029 999 WhatsApp 'Hi' to 0600 123 456





Acknowledgements: Lesley Bamford, Rebecca Berhanu, Lucille Blumberg, Angela Dramowski, Anchen Laubscher, Caroline Maslo, Elizabeth Mayne, Kerrigan McCarthy, Shaheen Mehtar, Tash Meredith Jeremy Nel, Nilesh Patel, Olga Perovic, Mande Taubkin, Juno Thomas, Anne von Gottberg

THANK YOU