







Preparing the Workplace for Coronavirus

DENTISTRY AND GENERAL MEDICAL PRACTITIONERS

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Division of the National Heralth Laboratory Service

Healthy, Safe and Sustainable Workplaces

PROMOTING DECENT WORK THROUGH CUTTING EDGE RESEARCH SERVICE DELIVERY AND TRAINING

Improve and **TEACHING** promote workers' health and safety & TRAINING **SPECIALISED SERVICES** Catalyst for a mind set change towards greater prevention **KNOWLEDGE** GENERATION Inform regulation, OCCUPATIONAL policy and **HEALTH** standards **Public and private** OUTBREAK sectors of the RESPONSE economy **ADVISORY** Formal and **SERVICES** informal economies

HOW TO STAY INFORMED: THIS SITUATION IS RAPIDLY EVOLVING Please check for updates on the NHLS, NIOH , NICD, and NDOH websites

www.nhls.ac.za | www.nioh.ac.za | www.nicd.ac.za | www.nicd.ac.za | www.nicd.ac.za |

Latest updated information on the spread of COVID-19 https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

Advice and guidance

https://www.who.int/emergencies/diseases/novel-coronavirus-2019 https://www.ilo.org/beijing/information-resources/publicinformation/WCMS_736744/lang--en/index.htm



Background



Global burden of COVID-19- 30 March 2020:

Confirmed cases :715 660 Deaths:33 579

Geographic distribution of COVID-19 cases worldwide, as of 30 March 2020



https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases

COVID - 19 burden in SA as of 30 March 2020





RECENT NEWS & UPDATES



- Biases in terms of the group selection
- Under estimate of the burden of COVID -19 in SA, doubling time of 3 days
- 13 health care workers already infected

Microbiology and epidemiology- Corona virus

- enveloped, singlestranded positive-sense RNA viruses.
- covered with club-shaped glycoproteins which look like 'crowns', or 'halos' – hence the name 'coronavirus.'
- <u>+</u>40 species
- A lot of them are responsible for the common cold
- usually cause selflimited upper respiratory tract infections.



Epidemic Potential

Coronaviruses are jumping increasingly from animals to humans, creating new threats



Source: Timothy Sheahan, University of North Carolina

- Corona viruses cause diseases in mammals, birds and humans
- Zoonotic corona viruses
 - SARS-CoV (2002-2003 global outbreak; spread to 37 countries within 2 weeks of original outbreak reporting; 8,098 probable cases and 774 deaths)
 - MERS-CoV (first ID-ed in 2012; >2400 lab-confirmed cases with
 850 deaths; high mortality; mostly contained within the
 Middle East, but has been detected in 17 other countries.)

How it spreads?

How does COVID-19 spread?



Droplet spread

Update on persistence of COVID-19



- COVID-19 virus has a fragile outer membrane it is less stable in the environment and can be killed by simple disinfectants
- There is no evidence, to date, on survival of the COVID-19 virus in water or sewage. Based on its structure, it probably does not survive long.
- It is not certain how long COVID-19 virus survives on surfaces: studies have shown survival on inanimate surface – 12 hrs - 6 days
- Survival time in the environment depends on -pH
 - Innoculum size
 - Dryness
 - Temperature
 - Exposure to disinfectants
 - -Type of surface
- Common disinfectants such as 70% ethanol and bleach can kill the virus



How is SARS-CoV-2 transmitted?

- · Viruses attach to specific proteins on the surface of human cells
- SARS-CoV-2 attach to proteins on the surface of epithelial cells in the upper airways called Angiotensin Converting Enzyme
- 'carrier droplets' need not be very small as bigger particles can enter the upper airways
- After attachment, they are able to enter the cell and cause disease.



Transmission

- Basic reproductive number was estimated 2.5
- 1 infected person can infect 2.5 people
- Flu 1:1.5 people
- SARS1 1:3.5 people
- Measles 1:15 people
- Generally not infectious during incubation period
- More infectious when symptoms show (e.g. coughing & sneezing)





Incubation period



Exposure

Symptoms

Coronavirus (COVID-19)

COVID-19 is a new coronavirus that has been identified as the cause of an outbreak of respiratory illness globally.



OCCUPATIONAL HEALTH

Division of the National Heralth Laboratory Service

Symptomatic persons :Case definition

acute respiratory illness with sudden onset of the following:

- cough,
- sore throat,
- shortness of breath or
- fever [≥ 38°C (measured) or history of fever]

AND

- In the 14 days prior to onset of symptoms,
- Were in close contact with a confirmed or probable case of SARS-CoV-2 infection;

OR

History of travel to areas with presumed ongoing community transmission of SARS-CoV-2

OR

- Worked in, or attended a health care facility where patients with SARS-CoV-2 infections were being treated OR
- Admitted with severe pneumonia of unknown aetiology

Keep updated on the NICD website as this may change



Diagnosis





- http://www.nicd.ac.za
- TOLL-FREE NUMBER 0800 029 999

Asymptomatic persons are not tested Testing is not done to determine exposure or give the 'all clear'

Outcomes

- 80% of persons have mild-moderate disease (common 'flu' or cold)
- 15% of cases require hospital admission
- 5 % of cases become critically ill and require ICU of which 2% die
- Persons with underlying co-morbid illness are especially vulnerable
 - Older age group
 - Heart disease
 - Diabetes
 - Chronic respiratory disease
 - Hypertension
 - Cancer
 - HIV and TB?

Contact Tracing

Any person who has had **close contact with a confirmed case** while the confirmed case was **ill** or in the **7 days preceding illness**:



PATIENT Sumptons? dates: contacts:



Face-to-face or close environment

HCW or other person providing care while not wearing recommended PPE

CDC's 2 row seating guidance

Close contacts under monitoring should be advised to:

- Close contacts MUST self-quarantine at home for 14 days after exposure to the confirmed COVID-2019 and take their temperature daily
- Remain at home
- Avoid unnecessary social contact or travel
- Remain reachable for monitoring

Quarantine

- Quarantine = separating asymptomatic persons who are exposed from non-exposed persons
- Isolation = separating a sick individual with a contagious disease from healthy individuals
- Quarantine
 - effective in limiting and slowing the introduction of a novel pathogen into a population
 - in a home or in a designated facility
- Depending on level of risk, and intensity of the exposure, different levels of quarantine will be employed, for example
 - If a health worker **wearing appropriate PEP** is exposed to a confirmed case, the health worker would be allowed to work but would be requested to self-quarantine if symptoms develop within 14 days.

Treatment

- Currently no specific treatment for disease caused by SARS-CoV-2 infection
- Early supportive therapy and monitoring
- Closely monitor patients
- Understand the patient's co-morbid condition(s) to tailor the management of critical illness and appreciate the prognosis.
- Contact tracing.
- Info available on the WHO website and NICD guidance
 document, NDOH guidance



Vaccinations

- Currently no vaccines for COVID-19 however
- Advisable to take the flu vaccine to prevent influenza and unnecessary

testing for COVID-19





POTENTIAL SOURCES OF EXPOSURE IN THE WORKPLACE (general practice and dental practice)

Community acquired workplace workplace

Self employed persons

Who is at risk of infection

- Every person may be at risk of exposure to COVID-19, however..
- The risk is higher for workers interacting with persons that may be potentially infected: Dental practitioners and General Practitioners !
- Immunocompromised workers are at higher risk of infection e.g. pre-existing conditions such as
 - asthma
 - diabetes
 - heart disease
 - Cancer
 - TB



High exposure risk group workers

- Airline operations (e.g. airline cabin crew, aircraft cleaners, mechanics)
- Boarder control (e.g. security officials, and other boarder officials)
- **Health care** (e.g. EMS workers, nurses, doctors, other medical staff)
- Laboratories (e.g. medical technologists, scientists, laboratory aids and researchers)
- Pathology and funeral services (e.g. mortuary attendants, autopsy technicians and funeral directors)
- Solid waste and wastewater management (e.g. waste pickers, water treatment plant workers)
- Carers and teachers



Occupational categories that may be exposed in dental and general medical practice

- Front line staff
- Persons interacting with people
- Cleaners
- Security worker
- Visitors



Legislation pertaining OHS in the workplace

Legislation	Provision	
Occupational Health and Safety Act (OHSA) 85 of 1993	 Health and safety Of persons at work, of persons in connection with use of plant and machinery, protection of persons other than persons at work against hazards to health and safety arising out of or in connection with activities of persons at work 	
Compensation for Occupational Injuries and Diseases Act (COIDA)	Provides for medical cover and compensation for occupational injuries and diseases in all workplaces (not covered by ODMWA)	

Hazardous Biological Agents Regulations of the OSH Act

Key sections

- Information and training
- Duties of persons who may be exposed (s.3)
- Risk Assessment (s.4)
- Monitoring exposure in the workplace
- Medical surveillance (s.8)
- Records (s9)
- Control of exposure to HBA (s.10)
- PPE and facilities (s.11)

OCCUPATIONAL HEALTH & SAFETY SYSTEM (Minimum recommendations)

- Service delivery:
 - Risk assessments (direct contact, droplets etc.)
 - Incident management programme (management reporting system) and appropriate follow up
 - Programme of continuous improvement
- OHS Training programme (information sharing sessions, presentations, etc.)
- CPD and appropriate platforms with colleagues in the same/environment
 - minimise meetings, consider online or virtual platforms

Mitigation of risk in the workplace

Primary prevention

- Minimise risks of transmission in the workplace. HRA including controls (Engineering, Administrative and PPE)
- Business continuity and pandemic preparedness Policies
- Education and Training /HP (risk communication)

Secondary Prevention

- Identify persons at risk early and respond appropriately
- Medical Surveillance

Tertiary prevention

- Rehabilitation
- Respond appropriately to a case of COVID amongst staff- incident investigation and contact tracing
- Compensation/COIDA
- Leave

Back to basics....

Hazard identification & Risk assessment

A workplace specific Risk Assessment

- Determine the RISK of EXPOSURE to COVID-19
- Communicate to all in the workplace (workers and visitors) workers
- Include all other hazards
 - Biological, Physical, Chemical, Ergonomic
 - Psychosocial exposure to long working hours, psychological distress, fatigue, occupational burnout, stigma, physical and psychological violence



Back to basics.... Hazard identification & Risk assessment

Different workers have different risk exposures: based on job specific risk assessments

- Dental assistant
 - Dental nurse
- Dental hygienist
 - Receptionist
 - Cleaner
 - Dentist
- General Practitioner
 - Physiotherapist
 - Security guard



Mitigation of risk in the workplace

Primary prevention

- Minimise risks of transmission in the workplace.
 HRA including controls (Engineering, Administrative and PPE)
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Prevention strategies

- Infection prevention and control including hand and respiratory hygiene practices
- Correct donning and doffing and disposal of PPE
- Advise workers on self-assessment, symptom reporting and sick leave policies if exposed
- Influenza vaccinations to prevent possible co infection with influenza
- Hierarchy of controls (measures aimed at mitigating the risk from exposure to a hazard)



Hierarchy of controls



Engineering controls

Isolating employees from work related hazards.

- Reduce exposure to hazards without relying on worker behaviour and can be the most cost-effective solution to implement
- For SARS-CoV-2 include:
 - Installing high-efficiency air filters.
 - Increasing ventilation rates in the work environment (isolation rooms)

Elimination

Substitution

- **Installing physical barriers** (e.g. clear plastic sneeze guards especially in areas like reception, triage or pharmacy- waiting areas)
- Specialized **negative pressure ventilation-** in settings where aerosol generating procedures are done (e.g., airborne infection isolation rooms in healthcare settings; specialized autopsy suites in mortuary settings, etc.)
- Controlled access to high risk areas
- Surface cleaning devices are recommended (e.g. UVGI).

Administrative Controls

ORGANISATION

A workplace plan of action for preparedness

Clear infection prevention and control and standard precautions

Elimination

- Controlled access to practices, avoid overcrowding high risk areas and laboratories
- Adequate staff to patient ratios, appropriate working hours and breaks need to be maintained- avoid overcrowding
- List all high risk of exposure procedures and plan accordingly: Aerosol generating procedures (nebulisations, CPR, intubation)
- Ensure proper signage and risk communication to staff and visitors to health facilities
- Review of cleaning and disinfection material and supplies
 procedures
- Established public health reporting procedures should be swiftly followed
- A blame free working environment needs to be provided

HPCSA announcement Telemedicine

Caring For You Through COVID-19 We are now doing Phone Consults at our practice

Coronavirus symptoms? Phone NICD HOTLINE

If you have been advised to come to the Doctor, please <u>stay in your car and call us first</u>, --- --- do not come into the practice rooms.



Administrative Controls : PROCEDURE

Elimination

- Clear infection prevention and control and standard precautions
- Telephone screening
- Telephonic consultation.... (HPCSA announcement)
- Appropriate and rapid triage and proper patient placement
 - **Controlled access** to high risk areas and laboratories
 - Ensure **proper signage** and **risk communication** to staff and visitors to health facilities
- Cleaning and disinfection procedures- frequency based on surface
- Review waste management practices and procedures

Preparing the practice

- Displaying large posters at the entrance to GP surgeries and a prominent notice on websites and online booking systems
- Using pre-recorded messages on telephone systems
- Sending patients SMS (text) messages
- Asking screening questions to patients as they arrive at reception:
 - ✓ Do you have a high temperature or cough or breathlessness?
 - ✓ Have you been in close contact with someone with coronavirus infection?
 - ✓ Have you travelled lately (been to any of the high risk areas in the last 14 days?

Preparing an isolation room

- Plan in advance which room is most appropriate for isolation
- \checkmark Ideally located away from the waiting area
- ✓ Located away from other consultation rooms
- ✓ No carpeted floors or soft furnishing (difficult to decontaminate)
- ✓ A reserved toilet facility, preferably close to the isolation room

Isolating patients with suspected COVID-19

- Isolate
 - ✓ The individual patient
 - ✓ Their waste & and their belongings
 - in a room with the door closed and window open
 - ***(switch off any air conditioning)***
 - patient not to touch anything or anyone when walking to the toilet and to wash hands thoroughly afterwards
 - Reassure the isolated patient them and provide updates(conversation through the closed door)
- Avoid entering the isolation room
- Ensure that they have a cellphone or access to a telephone line

Educate and inform employees (risk communication)



- Give people facts about how the disease is transmitted
- Infection prevention and control including hand and respiratory hygiene practices
- Correct donning and doffing and disposal of PPE
- Advise workers on self-assessment, symptom reporting and sick leave policies if exposed
- Influenza vaccinations to prevent possible co infection with influenza
- Understand travel risks and make informed decisions re risk-benefit of travelling
- Public Hotline number 0800 029 999

Dentistry





- production of airborne material during dental procedures is obvious
 - during tooth preparation with a rotary instrument or air abrasion,
 - during the use of an air-water syringe,
 - during the use of an ultrasonic scaler and
 - during air polishing.
- Ultrasonic scalers and high-speed handpieces produce most airborne material
- create a visible spray that contains large particle droplets of water, saliva, blood, microorganisms, and other debris.
- spatter travels only a short distance and settles out quickly, landing on the floor, nearby operatory surfaces, dental health care personnel or the patient.
- Highest risk of exposure to COVID- 19 to the health worker
- Ultrasonic scalers and high-speed handpieces produce more airborne contamination



Start with the HRA...

- Identify all hazards:
 - including exposure to infections, hepatitis,
 - Chemicals
 - Ionizing radiation,
 - Noise,
 - Ergonomics
 - Injuries,
 - Latex allergies
 - psychological and stress challenges and more.



- The advice globally has been to postpone elective procedures, surgeries, and non-urgent dental visits
- If dental practitioners elect to open should be limited to urgent and emergency visits only during this period of the pandemic.



- Difficulty identifying asymptomatic COVID 19 infected patients
- Most procedures are aerosolizing and high risk
- Supplies of PPE are very low

What Constitutes a Dental Emergency?

The ADA recognizes that state governments and state dental associations may be best positioned to recommend to the dentists in their regions the amount of time to keep their offices closed to all but emergency care. This is fluid situation and those closest to the issue may best understand the local challenges being faced.

DENTAL EMERGENCY

This guidance may change as the COVID-19 pandemic progresses. Dentists should use their professional judgment in determining a patient's need for urgent or emergency care.

Dental emergencies are potentially life threatening and require immediate treatment to stop ongoing tissue bleeding, alleviate severe pain or infection, and include:

- Uncontrolled bleeding
- Cellulitis or a diffuse soft tissue bacterial infection with intra-oral or extra-oral swelling that potentially compromise the patient's airway
- Trauma involving facial bones, potentially compromising the patient's airway

Urgent dental care focuses on the management of conditions that require immediate attention to relieve severe pain and/or risk of infection and to alleviate the burden on hospital emergency departments. These should be treated as minimally invasively as possible.

- · Severe dental pain from pulpal inflammation
- Pericoronitis or third-molar pain
- Surgical post-o Please say that again dressing changes
- Abscess, or localized bacterianmection resulting in localized pain and swelling
- · Tooth fracture resulting in pain or causing soft tissue trauma
- Dental trauma with avulsion/luxation
- Dental treatment required prior to critical medical procedures
- Final crown/bridge cementation if the temporary restoration is lost, broken or causing gingival irritation
- Biopsy of abnormal tissue

Other urgent dental care:

- Extensive dental caries or defective restorations causing pain
 - Manage with interim restorative techniques when possible (silver diamine fluoride, glass ionomers)
- Suture removal
- Denture adjustment on radiation/ oncology patients
- Denture adjustments or repairs when function impeded
- Replacing temporary filling on endo access openings in patients experiencing pain
- Snipping or adjustment of an orthodontic wire or appliances piercing or ulcerating the oral mucosa

DENTAL NON EMERGENCY PROCEDURES

Routine or non-urgent dental procedures includes but are not limited to:

- · Initial or periodic oral examinations and recall visits, including routine radiographs
- Routine dental cleaning and preventive therapies
- Orthodontic procedures other than those to address acute issues (e.g. pain, infection, trauma)
- Extraction of asymptomatic teeth
- Restorative dentistry including treatment of asymptomatic carious lesions
- Aesthetic dental procedures

Contact Patients Prior to Clinically Urgent/Emergency Dental Treatment

- Call all patients before their scheduled appointments
 - screen for symptoms of respiratory illness over the phone
 - If the patient reports signs or symptoms of fever or respiratory illness, advise them to see the medical practitioner/call NICD hotline
 - Defer non-urgent procedures
 - For emergencies- limited clinical staff should be present to decrease exposure.
- People with COVID-19 who have completed home isolation clearance can receive emergency dental care. This is defined as:
 - Date of the first positive COVID-19 diagnostic test and have had no subsequent illness



In the waiting room....



- Limit the number of staff on duty
- If reception staff is necessary, consider barrier between them and the patients
- Ensure a functional booking system to prevent walk in patients
- Minimize time in waiting rooms and encourage distancing of 1-2 m if waiting is necessary
- Patient waiting in their car until they are called
- Limit transport and movement of patients outside of the room
- Limit the visitors accompanying the patients into the rooms
- Prioritize cleaning and disinfection of the rooms of patients on contact precautions ensuring rooms are frequently cleaned and disinfected focusing on frequently-touched surfaces and equipment in the immediate vicinity of the patient
- instruct patients to follow Respiratory Hygiene/Cough Etiquette recommendations.

In the chair:



- Engineering controls:
 - Ensure appropriate patient placement in an airborne infection isolation room (AIIR)
 - high efficiency air filters
 - If unavailable, place the patient in a private room with the door closed will reduce the likelihood of airborne transmission
 - Increase ventilation rates
 - Use surface cleaning devises
 - Consider the use of rubber dams to prevent aerosol generating particles
- Restrict susceptible healthcare personnel from entering the room
- Strict infection control procedures
 - sterilization,
 - surface disinfection
 - Handling sharps
 - Retraining







- Patients and staff need to observe Respiratory Hygiene/Cough Etiquette
- Hand hygiene
- Use personal protective equipment (PPE) appropriately. Don mask upon entry into the patient room or patient space.
- Use personal protective equipment (PPE) appropriately,
 - including a fit-tested NIOSH-approved N95 or higher level respirator for healthcare personnel.
 - Eye protection-
 - gloves, gown, aprons if gowns not fluid resistant
 - Correct donning and doffing needs to be observed

Remove and dispose of contaminated PPE and perform hand hygiene

Ensure adequate and appropriate PPE is available.

- Consider the ff based **on a risk assessment**:
 - A single pair of disposable patient examination gloves
 - Disposable isolation gown
 - Respiratory protection (i.e., N-95 respirator),
 - Eye protection (i.e. goggles or disposable face shield that fully covers the front and sides of the face).
- Aerosol generating procedures
 - respirators, eye protection, gloves, gowns and aprons if the gowns are not fluid resistant
- Used PPE should be considered contaminated and discarded in accordance with safe practice
- Surgical masks should be available for patients with respiratory symptoms that are being cared for in the community
- Not recommended asymptomatic individuals to wear a mask of any type

Personal Protective Equipment (PPE)

An effective measure within a complete package of mitigation and control strategies



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Secondary Prevention

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Tertiary prevention

- Rehabilitation
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Medical surveillance

- To ensure early detection of COVID 19 disease and facilitation of testing and treatment and prevent transmission from potentially contagious HCP to patients and other colleagues
- Hospitals should maintain a record of all staff
 providing care for confirmed COVID-19 cases
- This can include:
 - monitoring for symptoms
 - rapidly isolation and tested should symptoms develop particularly if they are in contact with confirmed cases.
- This should be determined according to the risk
- At the guidance of the company OMP

Employee Monitoring

Self-monitoring

- HCW should monitor themselves
- fever by taking their temperature twice a day and remain alert for respiratory symptoms
- should be provided a plan for whom to contact if symptomatic

Active monitoring

- the state or local public health authority
- with potentially exposed people to assess for the presence of fever or respiratory symptoms

• self-Monitoring with delegated supervision in a

HCP perform self-monitoring with oversight by their healthcare facility's occupational health

Exposed health care worker



https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html



If the HW tests positive for COVID 19

HW should self- isolate

Be treated by their health care provider

All cases should be reported to Compensation Commissioner if applicable

Return to work



Resolution of fever without the use of fever-reducing medications and

- Improvement in respiratory symptoms and
- Negative results of an assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥24 hours apart (2 negative specimens)

Non-*Testbased strategy*

Test-

based

strategy

- At least 3 days have passed since recovery defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms and,
- At least 7 days have passed since symptoms first appeared

Work restrictions:

- Wear a facemask at all times until all symptoms are completely resolved or until 14 days after illness onset
- Be restricted from contact with severely immunocompromised patients until 14 days after illness onset
- Adhere to hand hygiene, respiratory hygiene, and cough etiquette
- Self-monitor for symptoms, and seek reevaluation from occupational health if respiratory symptoms recur or worsen

https://www.cdc.gov/coronavirus/2019-ncov/healthcare-facilities/hcp-return-work.html



Minimise risks of transmission in the workplace – MUST BE SAID AGAIN!

- Isolate affected patients and limit contact and movement
- Review the HRA and the hierarchy of controls
- Promote regular and thorough handwashing by employees, contractors and customers
- Ensure good infection control and standard precautions
- Respiratory hygiene
- Avoid touching your face, especially while working.
- Encourage / insist that symptomatic persons stay away /

self isolate

https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf

If you suspect you have been exposed to COVID-19

- Alert your supervisor and occupational health clinic immediately
- If you are experiencing symptoms, inform your health care provider about any contacts and recent travel to areas affected by COVID-19

Enquiries : info@nioh.ac.za

For more information contact NICD: 080 002 9999 <u>www.nicd.ac.za</u> or <u>www.nioh.ac.za</u>

Resources:

- <u>https://www.cdc.gov/coronavirus/2019-</u> ncov/hcp/dental-settings.html
- <u>https://www.cdc.gov/coronavirus/2019-</u> ncov/hcp/guidance-risk-assesment-hcp.html
- <u>https://www.cdc.gov/coronavirus/2019-</u> <u>ncov/healthcare-facilities/hcp-return-work.html</u>

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