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How do health care workers minimise their risk of acquiring infection and of spreading infection between patients while physically examining a patient with respiratory symptoms?

Context

- Aboriginal and Torres Strait Islander people have higher prevalence of respiratory conditions, many of which share symptoms with COVID-19. Significant conditions include streptococcal throat infections, pneumonia, asthma and other chronic lung conditions, and middle ear disease (1, 2).
- Any patient with respiratory symptoms - including cough, sore throat, shortness of breath, runny nose or anosmia (loss of smell or taste) – could have SARS-CoV-2 (COVID-19) infection (3, 4).
- Physical examination is a key part (5) of
  - gathering information to support accurate diagnosis especially of high prevalence conditions and/or conditions that share symptoms with COVID-19 (differential diagnoses)
  - maintaining high-quality primary health care including prevention, diagnosis and management of respiratory conditions such as middle ear disease and hearing impairment, asthma, COPD, etc
  - building trust between the clinician and patient.
- There is minimal evidence about the sensitivity and specificity of clinical examination — specifically of ears, throat, nose and chest — in influencing diagnostic and management decisions (6-8).
- Health care workers (HCWs) examining a patient with respiratory symptoms are at risk of acquiring infection (droplet and contact transmission) (9, 10).
- HCWs examining a patient with respiratory symptoms are at risk of spreading infection between patients (contact transmission) (10).
- The highest risk of transmission is likely during throat and nose examination including when a swab is being collected, which can stimulate sneezing and gag reflex.
- The majority of transmission of SARS-CoV-2 is via respiratory droplet and contact routes from people with respiratory symptoms or who are pre-symptomatic in close and prolonged contact with others without adequate PPE. Asymptomatic transmission may occur and is the subject of ongoing research (10).
- Approaches to clinical assessment, patient flow and the need for dedicated clinical rooms, and the extent of environmental cleaning will depend on clinical assessment of the level of risk of infection taking into account patient symptoms and risk factors as well as local prevalence.
- Implementing: (i) standard infection prevention and control precautions regardless of risk assessment of infection, and (ii) droplet and contact precautions for anyone with respiratory symptoms minimises healthcare-associated infections in primary care settings (11).
- There is changing and varied risk and response between jurisdictions depending on local epidemiology, particularly whether or not there is known community transmission (unknown source) (12-15).
- Maintaining high-quality primary healthcare is critical including when services are disrupted due to physical distancing and other infection prevention and control measures.

NACCHO National Aboriginal Community Controlled Health Organisation Aboriginal health in Aboriginal hands www.naccho.org.au
LOWITJA INSTITUTE
RACGP Royal Australian College of General Practitioners
Australian National University

Summary of recommendations

Physical examination requirements

- Complete usual physical examination to support clinical assessment and decisions about management maintaining diligence about higher prevalence respiratory and cardiac conditions including middle ear disease in children, rheumatic heart disease, asthma and other chronic lung conditions.
- Conduct physical examination from lowest risk to higher infective risk areas.
- Collect any swabs at the time of examining the throat and/or nose, i.e. when the mask is removed, following current local testing guidelines for SARS-CoV-2.

Infection control protocols

- Have clear protocols about infection prevention and control measures for patients with respiratory symptoms in low risk scenarios (e.g. no known community transmission) as well as in higher risk settings.
- Continuous use of surgical masks by staff in areas of known community transmission is strongly advised and is required in some jurisdictions.
- Ask the patient with respiratory symptoms to:
    - wait outside the practice/health service (e.g. in their car) until they can be seen if safe to do so
    - wear a single-use surgical mask and advise re respiratory hygiene and cough etiquette including appropriate disposal of tissues
    - complete hand hygiene using alcohol-based hand rubs >60% alcohol
    - come in through a separate entrance avoiding the waiting area if possible.
- If possible, use a dedicated room near the entrance the patient uses for consultations with patients with respiratory symptoms.
- Maintain physical distancing in the consultation room as much as possible.
- Use PPE when examining a patient with respiratory symptoms:
    - complete **hand hygiene** before and after donning **gloves** for each patient
    - wear a **surgical mask**; if surgical masks are in short supply, they can be used for periods of up to four hours during consecutive consultations in the same location
    - consider use of a **gown** based on risk assessment (splash/spray of body fluids); a gown or apron can be worn for consecutive consultations in the same location unless contaminated or high risk of contamination
    - consider **safety glasses or face shield** based on risk assessment (splash/spray of body fluids) including when collecting swabs for COVID-19; safety glasses and face shields can be worn during consecutive consultations in the same location unless contaminated or high risk of contamination.
- Stand to the side of the patient when examining the patient and/or collecting throat and naso-pharyngeal swab for testing.
- When high risk of infectiousness, provide the patient with a new surgical mask following examination and/or collection of swab for testing.
- Following examination and after the patient has left the room, safely remove and dispose of PPE (always gloves, other PPE if contaminated or high risk of contamination in order as below) and contaminated waste appropriately in contamination bins, as per usual practice:

  - remove gloves; perform hand hygiene
  - remove gown or apron (if worn), perform hand hygiene
  - remove face shield or safety glasses without touching the front, perform hand hygiene
  - remove mask, without touching the front, perform hand hygiene.
- Complete environmental cleaning:
  - when high-risk, replace gloves, gown and use eye protection to complete environmental cleaning
  - clean surfaces (door handles, desktop, chairs) after each patient with >60% alcohol-based disinfectant, and daily or whenever there is visible contamination with detergent
  - clean equipment (stethoscope, oroscope) after each patient with >60% alcohol-based disinfectant
  - replace linen
  - consider using surface barriers on high touch areas.
- Check local jurisdictional directives and advice with respect to risk and public health response.

Recommendations and rationale

Physical examination requirements

Recommendation	Rationale
Complete usual physical examination to support clinical assessment and decisions about management maintaining diligence about higher prevalence respiratory and cardiac conditions including middle ear disease in children, rheumatic heart disease, asthma and other chronic lung conditions.	Aboriginal and Torres Strait Islander people have higher prevalence of respiratory conditions including streptococcal throat infections, pneumonia, asthma and other chronic lung conditions, and middle ear disease (1, 2). Clinical care must be continued to be provided to reduce the delay in treating these conditions.
Conduct physical examination from lowest risk to higher infective risk areas.	To lower the possibility of cross-transmission.
Collect any swabs at the time of examining the throat and/or nose ie when the mask is removed, including following current local testing guidelines for SARS-CoV-2.	When collecting respiratory specimens from patients suspected, probable or confirmed to have SARS-CoV-2, transmission-based precautions should be observed whether or not respiratory symptoms are present (16, 17).

Infection Control Protocols

Recommendation	Rationale
Have clear protocols about infection prevention and control protocols for patients with respiratory symptoms in low risk scenarios (e.g. no known community transmission) as well as in higher risk settings (18).	Early recognition and prompt implementation of appropriate infection prevention and control precautions are critical for preventing transmission of SARS-CoV-2. Standard precautions (19) are required for all patients regardless of known SARS-CoV-2 status. Standard precautions are the primary strategy for minimising the risk of infection and must be used as part of day-to-day practice when providing care. Infection prevention and control protocols should be based on risk and should consider: • the type of patient interaction • the risk of transmission of the infectious agent • the risk of contamination of the HCWs skin/mucous membranes by the patients' blood, body substances, secretions or excretions • how long the PPE is likely to be required to be worn. Clear protocols communicated to all staff within the practice can allow for rapid and appropriate implementation of infection control (18). QLD Health link to epidemiological and clinical criteria conveying risk of potential SARS-CoV-2 infection
Consider continuous use of surgical masks by staff in areas of known community transmission.	Current evidence suggests that most transmission of SARS-CoV-2 is occurring from **symptomatic** people to others in close contact, when not wearing appropriate PPE (20). There are currently no studies that have evaluated the effectiveness and potential adverse effects of continuous mask use by health care workers in preventing transmission of SARS-CoV-2 (20). Despite the lack of evidence, the great majority of the WHO SARS-CoV-2 Infection Prevention and Control Guidelines Development Group (IPC GDG) members supports the practice of health workers and caregivers in clinical areas (irrespective of whether there are SARS-CoV-2 or other patients in the clinical areas) *in geographic settings where there is known or suspected community transmission of SARS-CoV-2*, to continuously wear a medical mask throughout their shift. It is recommended that HCWs change the

Recommendation	Rationale
	mask after caring for a patient requiring droplet/contact precautions for other reasons (e.g. influenza), to avoid any possibility of cross-transmission.
Ask the patient with respiratory symptoms to: ▪ wait outside the practice/health service (e.g. in their car) until they can be seen ▪ wear a single-use surgical mask and advise re respiratory hygiene and cough etiquette including appropriate disposal of tissues ▪ complete hand hygiene using alcohol-based hand rubs >60% alcohol come in through a separate entrance avoiding the waiting area if possible (1).	Recent studies cited by the World Health Organization theorise that droplets from speech and cough may be aerosolised (10), thus increasing the risk of transmission of SARS-CoV-2. Surgical masks can prevent transmission of SARS-CoV-2 from those diagnosed to others (1). Indirect transmission of SARS-CoV-2 can occur by the transfer of an infectious agent through a contaminated intermediate object (equipment or environment) or person (11). Alcohol-based rapidly and effectively inactivate a wide array of potentially harmful microorganisms on hands (21).
If possible, use a dedicated room near the entrance for consultations with patients with respiratory symptoms.	A dedicated room for patients with respiratory symptoms could lower the incidence of cross-transmission, is acceptable infection control (22). Ideally, you should dedicate one room to consulting suspected SARS-CoV-2 patients. If not possible, proper environmental cleaning of the room after patient assessment/testing.
Maintain physical distancing in the consultation room as much as possible	Transmission of SARS-CoV-2 via droplets it likely to be limited to a distance of 1 metre (11).
Use PPE when examining a patient with respiratory symptoms: ▪ complete **hand hygiene** before and after donning **gloves** for each patient ▪ wear a **surgical mask**; if surgical masks are in short supply, they can be used for periods of up to four hours during consecutive consultations in the same location ▪ consider use of a **gown** based on risk assessment (splash/spray of body fluids); a gown or apron can be worn for consecutive consultations in the same location unless contaminated or high risk of contamination consider **safety glasses or face shield** based on risk assessment (splash/spray of body fluids) including when collecting swabs for COVID-19; safety glasses and face shields can be worn during consecutive	Aprons and gowns can keep health care staffs from contact with patients or their environment directly, are not used during AGPs and not visibly contaminated ▪ Aprons and gowns can be worn for a session of work in higher risk areas ▪ Fluid resistant surgical mask and eye protection can be used for a session or extended period of work rather than a single patient contact Link to PPE donning and doffing for: airborne, contact and droplet precautions (23–25).

Recommendation	Rationale
consultations in the same location unless contaminated or high risk of contamination.	
Stand to the side of the patient when examining the patient and/or collecting throat and nasopharyngeal swab for testing	For most patients, collection of respiratory (nasopharyngeal) specimens is a low risk procedure but can induce cough or sneezing. Standing to the side of the patient may help avoid exposure to respiratory secretions, should the patient cough or sneeze (17, 26–28).
When high-risk of infectiousness, provide the patient with a new surgical mask following examination and/or collection of swabs for testing.	The main benefit of wearing a mask when a person is symptomatic is to protect other people. Wearing a mask will reduce the chance of passing the virus on to others (9). Replacement and correct disposal of the mask will reduce the risk of the patient touching a potentially contaminated item.
Following examination and after the patient has left the room, safely remove and dispose of PPE (always gloves, other PPE if contaminated or high risk of contamination in order as below) and contaminated waste appropriately in contamination bins, as per usual practice: ▪ remove gloves; perform hand hygiene ▪ remove gown or apron (if worn), perform hand hygiene ▪ remove face shield or safety glasses without touching the front, perform hand hygiene remove mask, without touching the front, perform hand hygiene (23).	Fitting and removing PPE is one of the key elements in preventing the spread of communicable diseases to healthcare workers. Compliance with processes for fitting (putting on) and removing PPE is critical to staff safety (24). HCWs must be given sufficient time to fit and remove PPE correctly without disturbances. PPE, particularly masks, should not be adjusted during patient care. The removal of used PPE is a high-risk process that requires a structured and systematic procedure. PPE must be removed slowly and deliberately in the correct sequence to reduce the possibility of self-contamination or other exposure to SARS-CoV-2. Therefore, healthcare organisations must ensure that a step-by-step process for removal of PPE is developed and documented. Click to access PPE training videos Click here for single-page information to fit and remove a mask
Complete environmental cleaning: ▪ when high-risk, replace gloves, gown and use eye protection to complete environmental cleaning	**Contact transmission.** Direct physical contact with the patient, indirect contact from shared patient care equipment or from contaminated environmental surfaces (30). To reduce the risk of contamination from fomites complete regular cleaning:

Recommendation	Rationale
▪ clean surfaces (door handles, desktop, chairs) after each patient with >60% alcohol-based disinfectant. ▪ clean equipment (stethoscope (29) – with particular attention to diaphragm and bell, otoscope) with70% ethyl alcohol or isopropyl alcohol after each patient with >60% alcohol-based disinfectant ▪ replace linen consider using surface barriers on high touch areas	▪ Smooth surfaces, (e.g. bench tops, couches, sinks, toilets and floors) ▪ High touch surfaces (e.g. door handles, light switches) Detergent and water, damp cloth or disposable wipes ▪ Wiping/rubbing with a damp cloth, or use disposable wipes Dry the surface with a clean cloth.
Check local jurisdictional directives and advice with respect to risk and public health response.	The Australian government reports the latest epidemiological considerations (case numbers, locations of clusters), provides current official medical advice (including current quarantine requirements) and information on treatment. Federal link: https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert Local jurisdiction link: https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm

Related topics and resources

Australian Government Department of Health
PPE in non-inpatient healthcare settings

NSW Clinical Excellence Commission
PPE training videos

Victoria State Government Department of Health and Human Services
Standard precautions and transmission-based precautions

Aboriginal Health and Medical Research Council of NSW
Home-isolation for Patients Factsheet

Royal Australian College of General Practitioners (RACGP)
Consultations in the practice with patients suspected of having COVID-19
COVID-19 infection control principles (Guide for collecting swabs)
Infection prevention and control standards

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[1] Griffith University

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