

# COVID-19 update

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the**Alfred**

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# Outline

- What's happened since early February?
- What do we know now?
  - Transmissibility and control
  - Case fatality risk and severity
- Frequently asked questions
  - What do I tell patients?
  - Who do I test?
  - Surgical masks or P2/N95 respirators?
  - What about sick HCWs?
- What are we doing at Alfred Health to prepare?

9 March, 2020

109,000 cases

3,800 deaths

104 countries

**Australia**

80 cases

3 deaths

**Victoria**

4379 negative tests

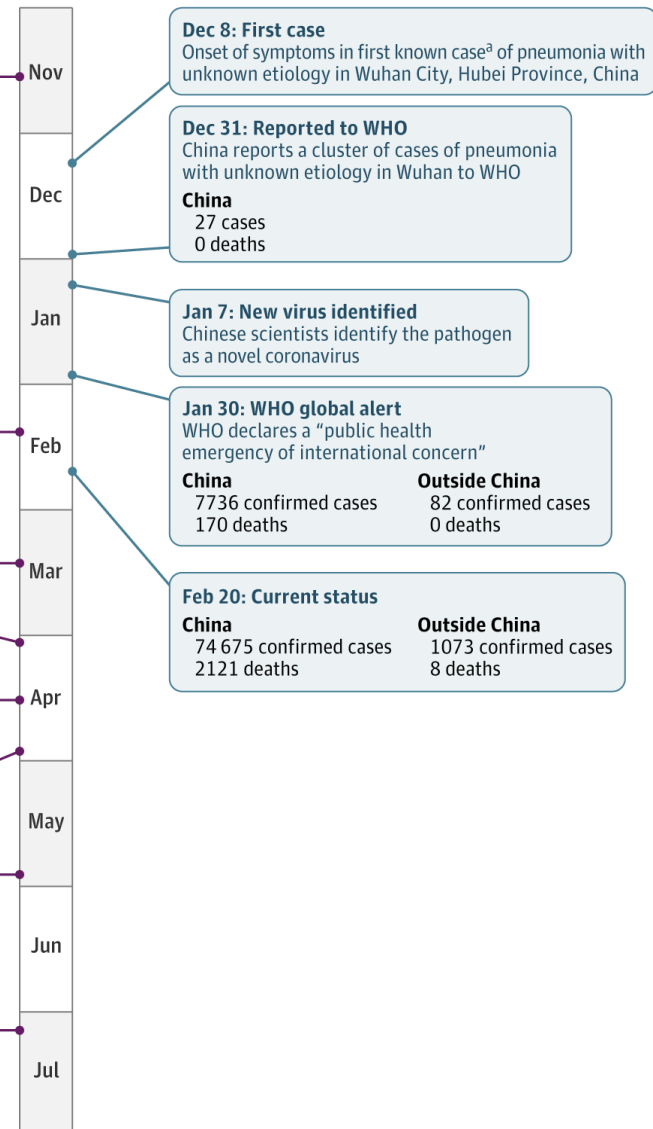
(>1000 on 10/3/2020)

18 cases

**SARS outbreak 2002-2003**



**COVID-19 outbreak 2019-2020**



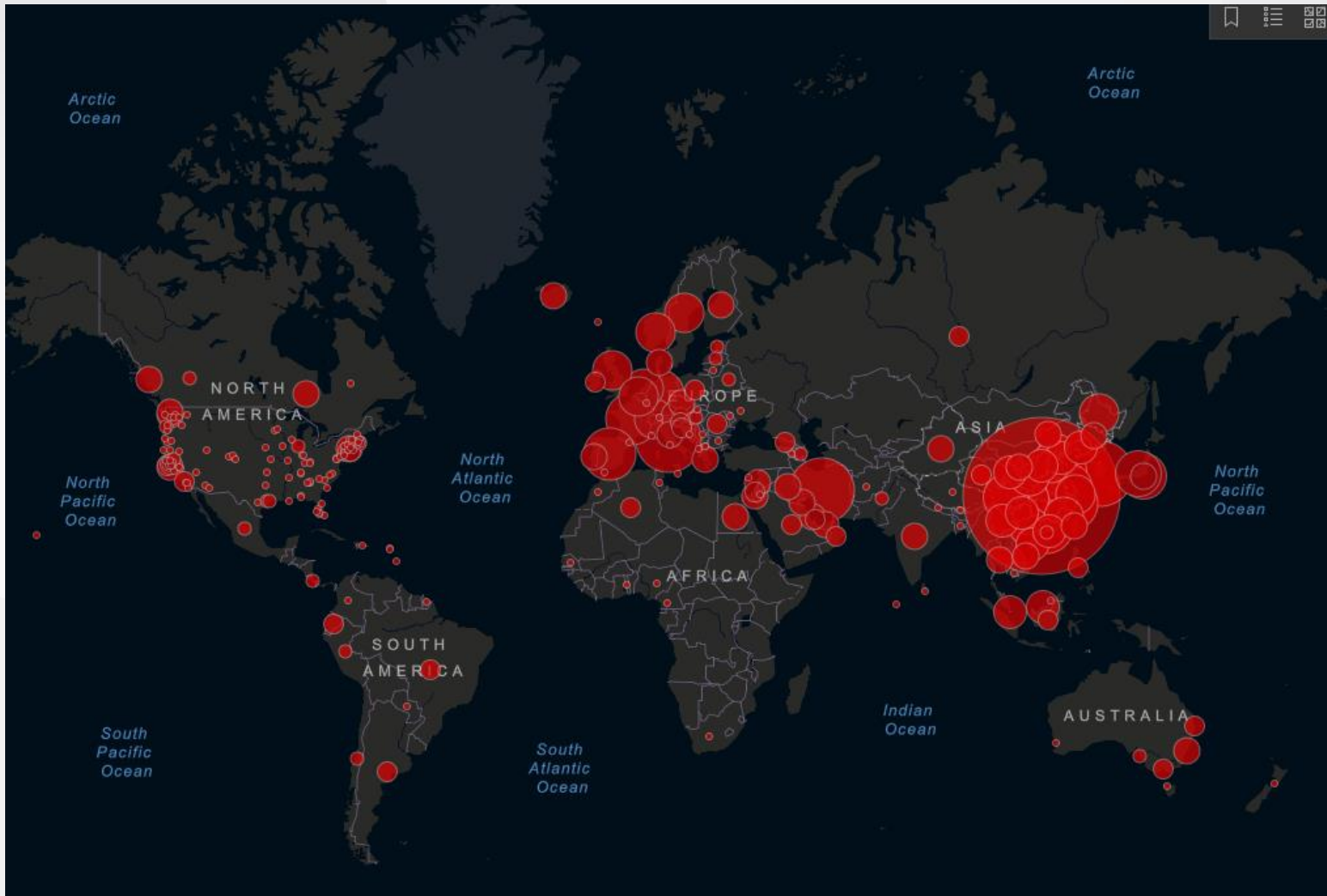
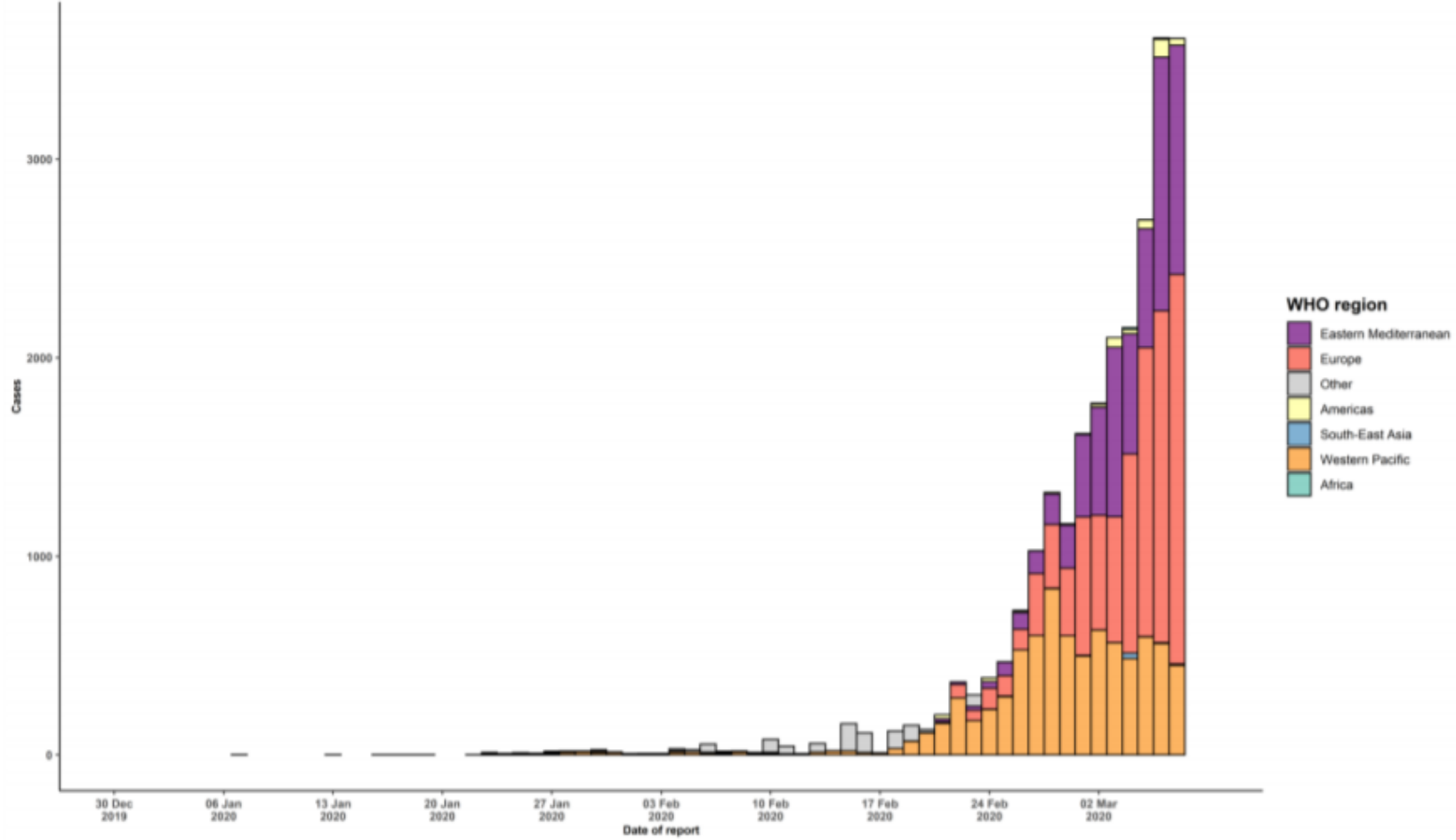
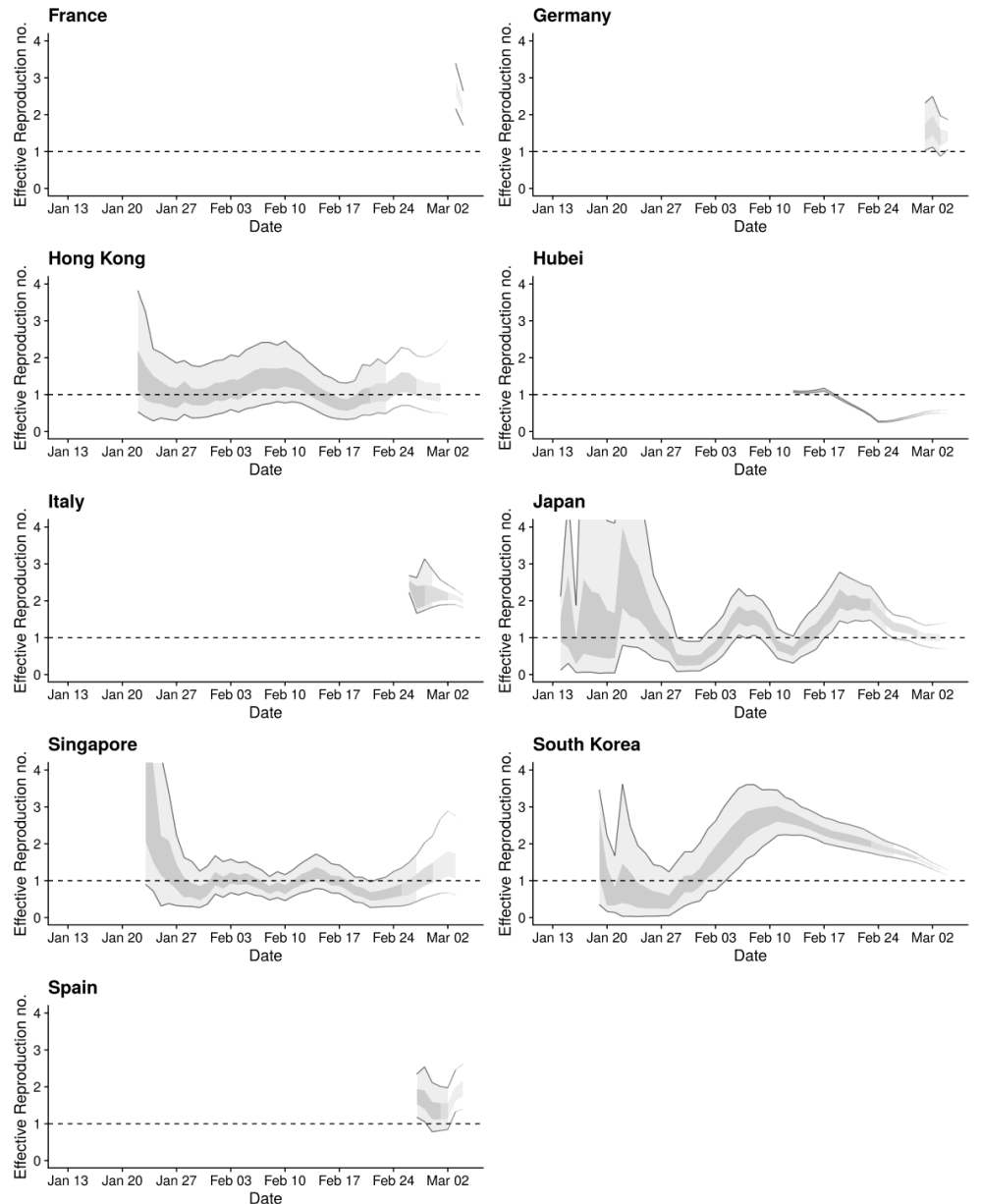


Figure 2. Epidemic curve of confirmed COVID-19 cases reported outside of China (n=24,727), by date of report and WHO region through 08 March 2020



# Control is possible

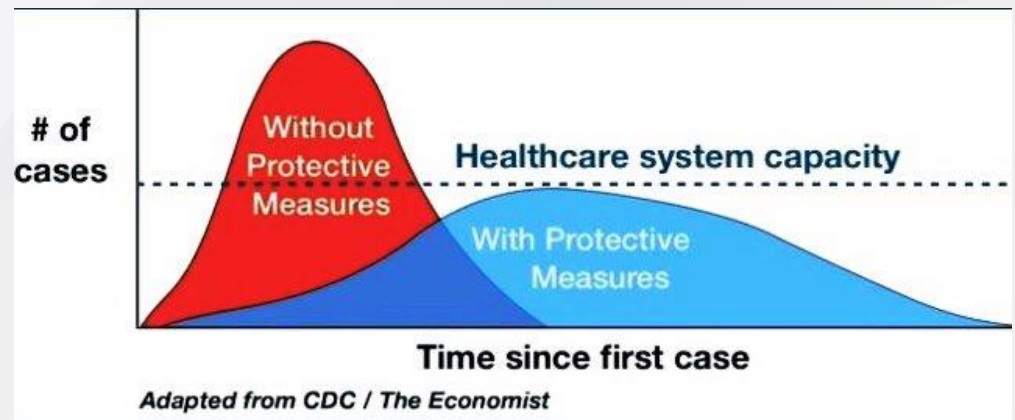
- China – massive social distancing, case finding and isolation, contact tracing and quarantine, cordon sanitaire, public awareness
- Singapore, Hong Kong - case finding and isolation, contact tracing and quarantine; significant behaviour change in population



# Potential public health interventions

- Border measures
- Case finding and isolation
- Contact tracing and quarantine
- Personal hygiene
- Social distancing
  - School closure
  - Workplace closure
  - Working from home
  - Cancelling mass gatherings
  - Cordon sanitaire

- Situation specific



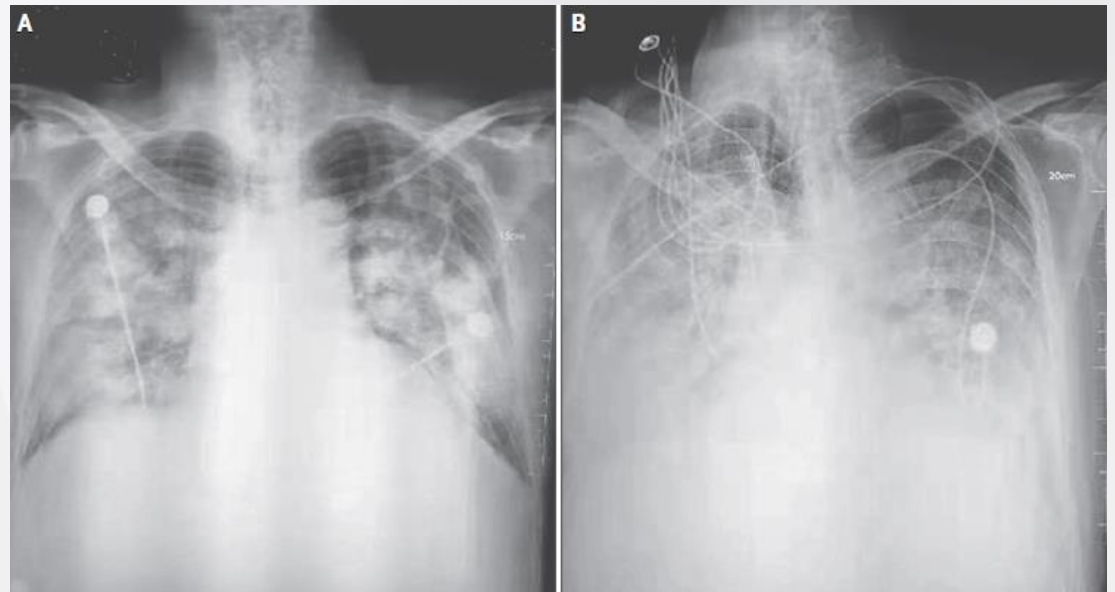
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# Clinical features

- Fever, cough, shortness of breath
  - Diarrhoea
  - Lymphopenia
- Chest x-ray findings
- Severe cases
  - Worsening in second week
  - Dyspnoea
  - Multi-organ failure
- Few children involved
  - Not infected, or not severe?



# How bad is COVID-19 infection?

- Best estimates come from a large report from China (44,672 confirmed cases)
- Case-fatality rate
  - 2.3% (1023) in China
  - Geographic variability: 2.9% in Hubei vs. 0.4% elsewhere in China
- Illness severity
  - Mild: 81% (36,160 cases)
  - Severe: 14% (6168 cases)
  - Critical: 5% (2087 cases)
- Limitations
  - Insufficient data outside China
  - Detection bias – severe cases more likely to be diagnosed – CFR likely to be lower



CFR ~ 50%

Patients requiring ICU admission tend to be elderly with comorbidities, but not all

# Case fatality ratio

Disease	Mortality
1918 influenza pandemic	5%
SARS	10-15%
MERS	30-35%
Avian influenza	50-60%
Ebola	> 60%
COVID-19	~ 0.5-1.0% (est)

Higher if delay in reporting deaths  
Lower if significant proportion with mild disease

Many other indicators of severity – ICU, length of hospital stay

# Basic Reproductive Number (R0)

Disease	Transmission	Ro
Measles	Airborne	12 - 18
Diphtheria	Saliva	6 - 7
Smallpox	Airborne droplet	5 - 7
Polio	Faecal-oral	5 - 7
Rubella	Airborne droplet	5 - 7
Mumps	Airborne droplet	4 - 7
Pertussis	Airborne droplet	5 - 6
SARS	Airborne droplet	2 - 5
COVID-19	Airborne droplet	2 - 4
Influenza (1918 pandemic)	Airborne droplet	1.5 – 2.5

# How infectious is SARS-CoV-2?

- **Basic reproduction number ( $R_0$ )**

- the average number of secondary infections caused by a single case
- $R_0$  estimates from China: 2-3
- Likely influenced by public health interventions
- Wide range of estimates from different studies

- **Household attack rate**

- the proportion of household members who are likely to get infected from a case.
- Significant variation: 3% - 100%
- Likely to depend on viral shedding by the index case, household activities, ventilation, & interventions in place

# SARS-CoV-2 contamination

- Patients A & B sampled after routine cleaning – all samples negative
- Patient C sampled before routine cleaning
  - 13/15 room sites positive
  - 3/5 toilet sites positive
  - One PPE swab positive – shoe
  - But anteroom & corridor negative
- All air samples negative

Table 2. Environmental and PPE Sites Sampled and Corresponding RT-PCR Results

Sites <sup>a</sup>	Positive samples (patient C; before routine cleaning) <sup>b</sup>	Cycle threshold value <sup>c</sup>
Staff PPE sites		
Upper front part of gown	0/2	
Lower front part of gown	0/2	
Front surface of face visor mask	0/2	
Front surface of N95 mask	0/2	
Surface of front of shoes	1/2	38.96

**Summary:** environmental contamination consistent with spread via **respiratory droplets** & faecal shedding. Supports the need for strict adherence to environmental cleaning and hand hygiene.

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# Advice for patients

1. Get your information from credible sources.

Visit [www.health.gov.au](http://www.health.gov.au) or your DHHS public health authority website.



The screenshot shows the top navigation bar of the Australian Government Department of Health website. It includes the Australian Government crest, the text 'Australian Government Department of Health', and a search bar. Below the navigation bar, there are links for 'Home', 'Health topics', 'Initiatives and programs', and 'Resources'. The main content area features a breadcrumb trail: 'Home > News > Health alerts'. The headline is 'Coronavirus (COVID-19) health alert'. The text below the headline reads: 'We are monitoring the respiratory illness outbreak caused by coronavirus (COVID-19). We update this alert every day with the latest medical advice and official reports.'



# Advice for patients

## 2. Importance of personal hygiene measures:

- Avoid touching your face
- Wash your hands frequently
- Cough and sneeze into a tissue and then dispose of tissues and wash your hands, or cough and sneeze into your elbow
- Stay home if you are sick



# Advice for patients

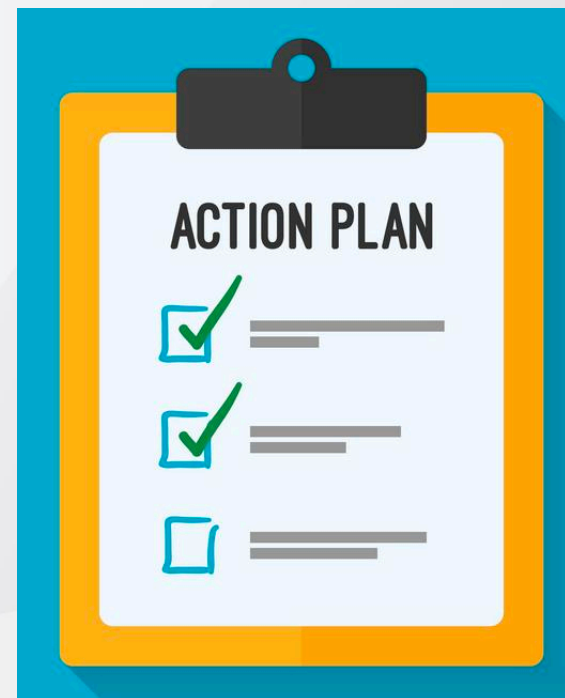
3. Recommend an influenza vaccine when available.

Get medication in advance if possible



# Advice for patients

4. Discuss an action plan with patients for the following scenarios:
  - If they become unwell
  - If they need to care for an ill person in their household
  - If they need to be placed in isolation or quarantine



# Travel advice

- Returning from China, South Korea or Iran
  - Foreign nationals (excluding permanent residents of Australia) will not be allowed to enter Australia until 14 days after they have left.
  - Australian citizens, permanent residents and their immediate family are able to enter Australia but must isolate themselves for 14 days after leaving.
- If considering travel:
  - Official travel advice on the Smart Traveller website <https://www.smartraveller.gov.au/>
  - Review travel insurance policies, as many policies exclude medical expenses for COVID-19 infection.
  - Consider post-travel quarantine or work furlough requirements

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# 'Suspected case' – three definitions

- A. Recent (<14 days) return from **international travel** OR **contact** with confirmed case  
**AND**  
Fever or acute respiratory infection (shortness of breath and/or cough and/or sore throat)
- B. Bilateral **severe community-acquired pneumonia** (critically ill patients)
- C. Moderate or severe community-acquired **pneumonia (hospitalised)** and is a **healthcare worker**

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# Contact, droplet, and airborne precautions

## Refer to local hospital guidelines

**STOP** **Visitors**  
See a nurse for information before entering the room

For all staff  
**Contact  
Precautions**  
in addition to Standard Precautions

**Before entering room**

- 1 Perform hand hygiene
- 2 Put on gown or apron
- 3 Put on gloves

**On leaving room**

- 1 Dispose of gloves
- 2 Perform hand hygiene
- 3 Dispose of gown or apron
- 4 Perform hand hygiene

**STOP** **Visitors**  
See a nurse for information before entering the room

For all staff  
**Airborne  
Precautions**  
in addition to Standard Precautions

**Before entering room**

- 1 Perform hand hygiene
- 2 Put on N95 or P2 mask
- 3 Perform a fit check of the mask

**On leaving room**

- 1 Dispose of mask
- 2 Perform hand hygiene

**Keep door closed at all times**

**STOP** **Visitors**  
See a nurse for information before entering the room

For all staff  
**Droplet  
Precautions**  
in addition to Standard Precautions

**Before entering room**

- 1 Perform hand hygiene
- 2 Put on a surgical mask

**On leaving room**

- 1 Dispose of mask
- 2 Perform hand hygiene



# Droplet precautions – routine care

- Surgical mask
- Eye protection
- Gloves
- Gown
- Hand hygiene

- Surgical mask on patient

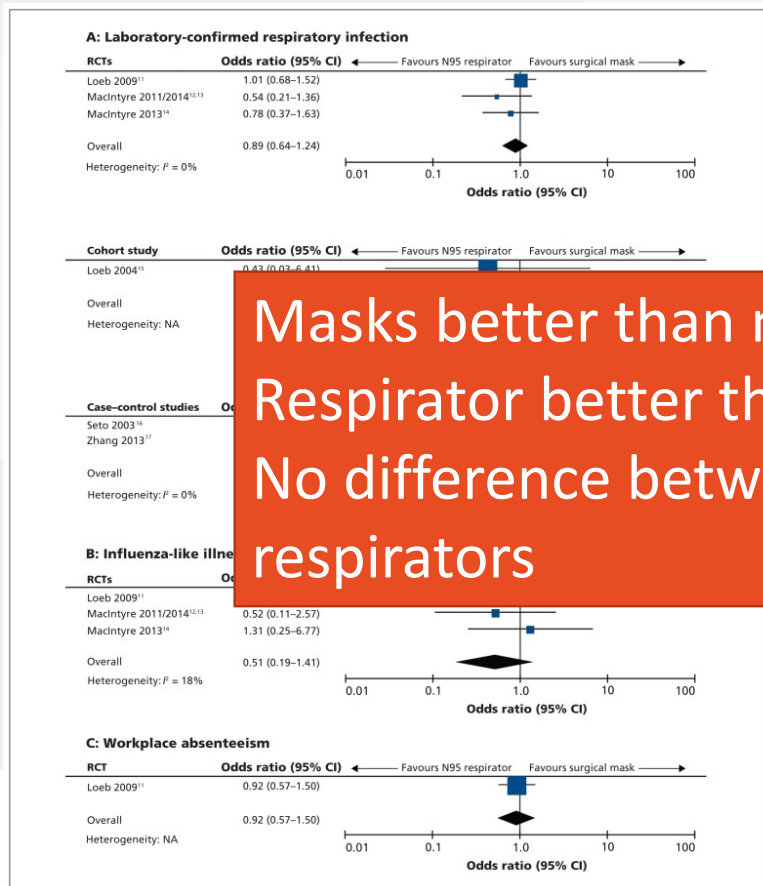


# Airborne precautions – ICU and AGPs

- P2 mask – “fit check”
  - Eye protection
  - Gloves
  - Gown
  - Hand hygiene
- 
- Check colleagues, teach juniors
- Aerosol generating procedures
    - Intubation
    - Bronchoscopy
  - Avoid nebulisers



# Evidence for N95 vs. surgical mask



6 clinical studies (3 RCTs, 1 cohort study and 2 case-control studies) and 23 surrogate exposure studies

Masks better than no mask  
 Respirator better than no respirator  
 No difference between masks and P2 respirators

...ine definitively  
 ...e superior to surgical  
 ...care workers against  
 ...ory infections in


# WHO & Australian guidance recommends surgical mask

(except for aerosol generating procedures)

Clinical management of severe acute respiratory infection when Novel coronavirus (2019-nCoV) infection is suspected: Interim Guidance

## Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected

Interim guidance  
28 January 2020



### Introduction

This is the first edition of this document for novel coronavirus, an adaption of WHO Clinical management of severe acute respiratory infection when MERS-CoV infection is suspected publication (2019).

This document is intended for clinicians taking care of hospitalised adult and paediatric patients with severe acute respiratory infection (SARI) when 2019-nCoV infection is suspected. It is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and provide to up-to-date guidance. Best practices for SARI including IPC and optimized supportive care for severely ill patients are essential.

This document is organized into the following sections:

1. Triage: recognize and sort patients with SARI
2. Immediate implementation of appropriate infection prevention and control (IPC) measures
3. Early supportive therapy and monitoring
4. Collection of specimens for laboratory diagnosis
5. Management of hypoxemic respiratory failure and acute respiratory distress syndrome (ARDS)
6. Management of septic shock
7. Prevention of complications
8. Specific anti-nCoV treatments
9. Special considerations for pregnant patients

These symbols are used to flag interventions:

- ✔ Do: the intervention is beneficial (strong recommendation) **OR** the intervention is a best practice statement
- ✘ Don't: the intervention is known to be harmful.
- ⚠ Consider: the intervention may be beneficial in selected patients (conditional recommendation) **OR** be careful when considering this intervention.

This document aims to provide clinicians with updated interim guidance on timely, effective, and safe supportive management of patients with 2019-nCoV and SARI, particularly those with critical illness.

The recommendations in this document are derived from WHO publications.<sup>1-4</sup> Where WHO guidance is not available, we refer to evidence-based guidelines. Members of a WHO global network of clinicians, and clinicians who have treated SARS, MERS or severe influenza patients have reviewed the recommendations (see Acknowledgements). For queries, please email [outbreak@who.int](mailto:outbreak@who.int) with '2019-nCoV clinical question' in the subject line.

Australian Government  
Department of Health

## Coronavirus disease (COVID-19)

### Interim recommendations for the use of personal protective equipment (PPE) during hospital care of people with Coronavirus disease (COVID-19)

The Australian Health Protection Principal Committee has endorsed the following interim recommendations for the use of PPE during hospital care for people with possible COVID-19. Note that these interim recommendations are based on current evidence and may be subject to change as more information becomes available.

These recommendations are intended for hospital personnel who enter a clinical space with COVID-19 patients, including wards persons, food deliverers, cleaners and clinical personnel.

### Background

Although Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2) which causes COVID-19 has spread rapidly and widely in mainland China, there is now local transmission occurring in other countries including Iran, the Republic of Korea, and Italy. At the time of writing, the crude mortality (~2%) in China is based on laboratory confirmed cases; many milder cases are almost certainly not being tested and the mortality is likely to be lower. Most cases in Australia have been relatively mild but there has been a small number of deaths. While a number of healthcare-associated infections have been reported with COVID-19 (in healthcare workers and patients) – as occurred with SARS and MERS – the risk for COVID-19 is likely to be very low, when infection control precautions are adhered to correctly.

### General principles

- **Standard precautions, including hand hygiene (5 Moments)** for all patients with respiratory infections. Patients and staff should observe cough etiquette and respiratory hygiene.
- **Transmission-based precautions** for patients with suspected or confirmed COVID-19:
  - **Contact and droplet precautions** are recommended for **routine care** of patients.
  - **Contact and airborne precautions** are recommended when performing **aerosol generating procedures (AGPs)**, including intubation and bronchoscopy.

### Contact and droplet precautions for use in routine care

Contact and droplet precautions can be safely used for routine patient care of inpatients with suspected or confirmed COVID-19 (see Novel Coronavirus 2019 (2019-nCoV) National Guidelines for Public Health Units for case definition).

On presentation or admission to hospital, the patient should be:

- Given a surgical mask to put on; and
- Placed in a single room (ensuring air does not circulate to other areas); or
- Placed in a negative pressure room (in the event of AGPs being performed).

If transfer outside of the room is essential, the patient should wear a surgical mask during transfer and follow respiratory hygiene and cough etiquette.

Interim recommendations for the use of PPE during hospital care of people with COVID-19  
Version 2 (5/03/2020) 1

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## Ill staff with risk factors

- If you have returned from **high risk countries** in the last 14 days (Iran, China, South Korea), you shouldn't be here.
- If you have **returned from other countries** in the last 14 days and are **unwell**, then go home and get tested
- If you have cared for a patient with **confirmed COVID** and are **unwell**, then go home and get tested.

## Ill staff without risk factors (eg travel, contact)

- If you have **fever AND acute respiratory symptoms**, go home (and seek medical advice as appropriate).
- If you only have **acute respiratory symptoms without a fever**, you can work but monitor your health
- This advice may change this week.

# Implications for GPs

- How can you protect staff?
  - Reconfigure waiting rooms, remove pens
  - PPE
  - Personal hygiene
- How can you do testing?
  - Identify isolation space
  - Drive-in assessments
- How can you continue to treat patients?
  - Telehealth
  - Patient communication
  - Nursing home visits?
- Business continuity plans
  - Cross train key staff
  - Flu vaccine
- Clinical advice for patients?



# Do I need to stock up on toilet paper?

No (just have enough for a few weeks)