



**Health**

Hunter New England  
Local Health District

# Omicron (wave 4!)

PHN Update

John Ferguson

HNE Health

21Dec21

|  |                                     |                                       |  |   |
|--|-------------------------------------|---------------------------------------|--|---|
| <b>Aα</b><br>Alpha<br><i>al-fah</i>    | <b>Bβ</b><br>Beta<br><i>bay-tah</i> | <b>Γγ</b><br>Gamma<br><i>gam-mah</i>  | <b>Δδ</b><br>Delta<br><i>del-tah</i>   | <b>Eε</b><br>Epsilon<br><i>ep-si-lon</i>  |
| <b>Zζ</b><br>Zeta<br><i>zay-tah</i>    | <b>Hη</b><br>Eta<br><i>ay-tah</i>   | <b>Θθ</b><br>Theta<br><i>thay-tah</i> | <b>Iι</b><br>Iota<br><i>eye-o-tah</i>  | <b>Kκ</b><br>Kappa<br><i>cap-ah</i>       |
| <b>Λλ</b><br>Lambda<br><i>lamb-dah</i> | <b>Mμ</b><br>Mu<br><i>mew</i>       | <b>Nν</b><br>Nu<br><i>new</i>         | <b>Ξξ</b><br>Xi<br><i>zz-eye</i>       | <b>Oο</b><br>Omicron<br><i>om-e-cron</i>  |
| <b>Ππ</b><br>Pi<br><i>pie</i>          | <b>Ρρ</b><br>Rho<br><i>roe</i>      | <b>Σσς</b><br>Sigma<br><i>sig-mah</i> | <b>Ττ</b><br>Tau<br><i>taw</i>         | <b>Υυ</b><br>Upsilon<br><i>oop-si-lon</i> |
| <b>Φφ</b><br>Phi<br><i>fie</i>         | <b>Χχ</b><br>Chi<br><i>k-eye</i>    | <b>Ψψ</b><br>Psi<br><i>sigh</i>       | <b>Ωω</b><br>Omega<br><i>o-may-gah</i> |   |

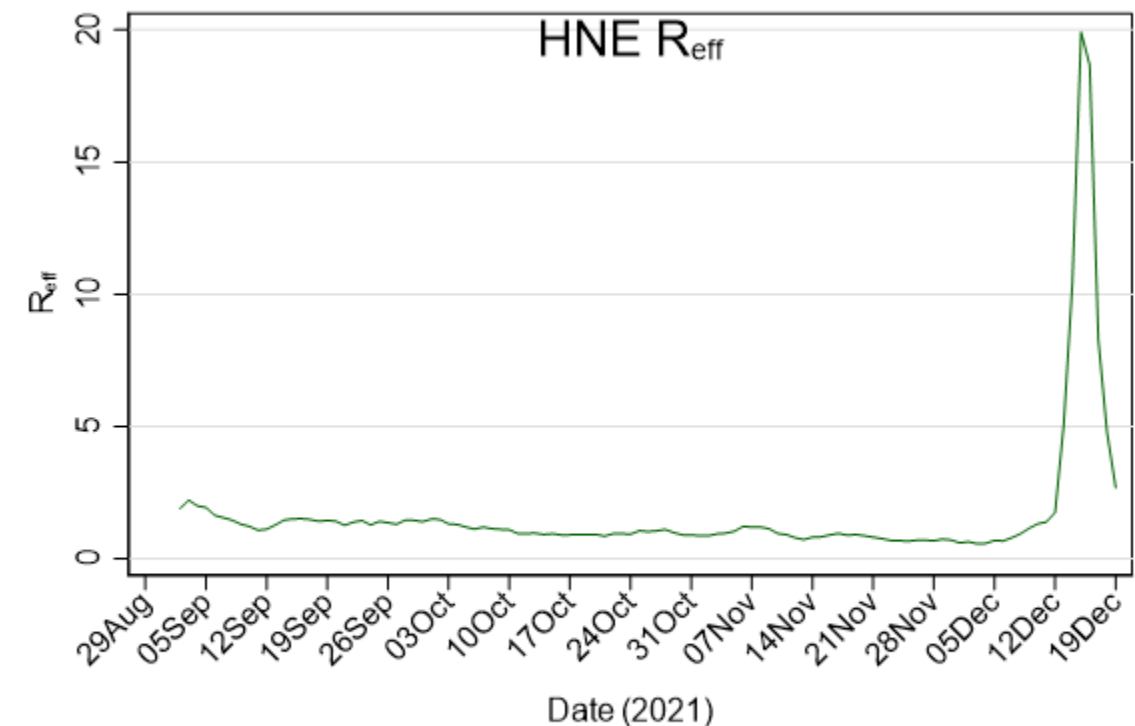
- 841 cases 20/12/21
- 6 admissions since 13/12/21

## COVID-19 Current Inpatients

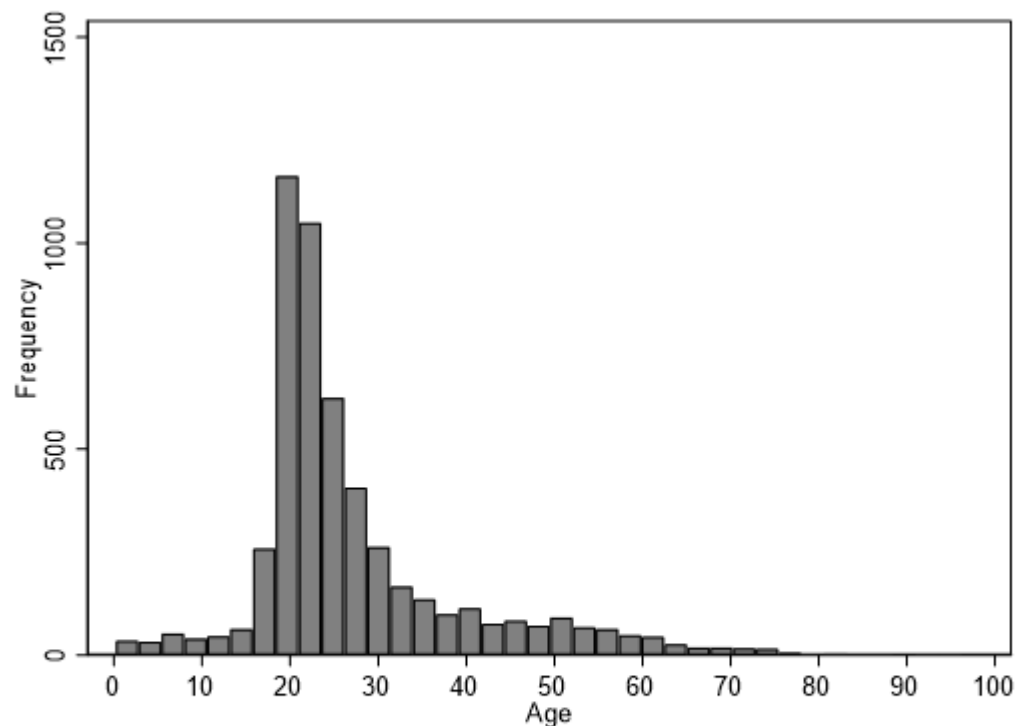
Date = 21/12/2021 08:55

| Hospital                               | Total Inpatients | Inpatients in ICU Wards |
|--|------------------|-------------------------|
| HNE Mater Mental Health Service (Q102) | 1                | 0                       |
| John Hunter Hospital (Q230)            | 11               | 1                       |
| Tamworth Hospital (J216)               | 1                | 0                       |
| The Maitland Hospital (Q206)           | 1                | 0                       |
|  | <b>14</b>        | <b>1</b>                |

|                  | Onset Confirmation |
|------------------|--------------------|
| 20/12/2021 Count | 841                |
| 19/12/2021 Count | 652                |
| 18/12/2021 Count | 763                |
| 17/12/2021 Count | 894                |
| 16/12/2021 Count | 682                |
| 15/12/2021 Count | 669                |



# HNE Epidemiology: superspreader events!



The following data is based on 4829 adults ( $\geq 18$  years) (data from 400 children excluded)

Age of Adults with active COVID-19:

## Vaccination Status: Reported on Portal – clearly imperfect

| COVID-19 Vaccine          | Freq. | Percent |
|---------------------------|-------|---------|
| <hr/>                     |       |         |
| 0                         | 593   | 12.28   |
| 1 dose registered in AIR  | 176   | 3.64    |
| 2 doses registered in AIR | 3,871 | 80.16   |
| 3 doses registered in AIR | 166   | 3.44    |
| 4 doses registered in AIR | 21    | 0.43    |
| 5 doses registered in AIR | 2     | 0.04    |
| <hr/>                     |       |         |
| Total                     | 4,829 | 100.00  |

Ack: Dr Mark Loewenthal,  
HNE LHD



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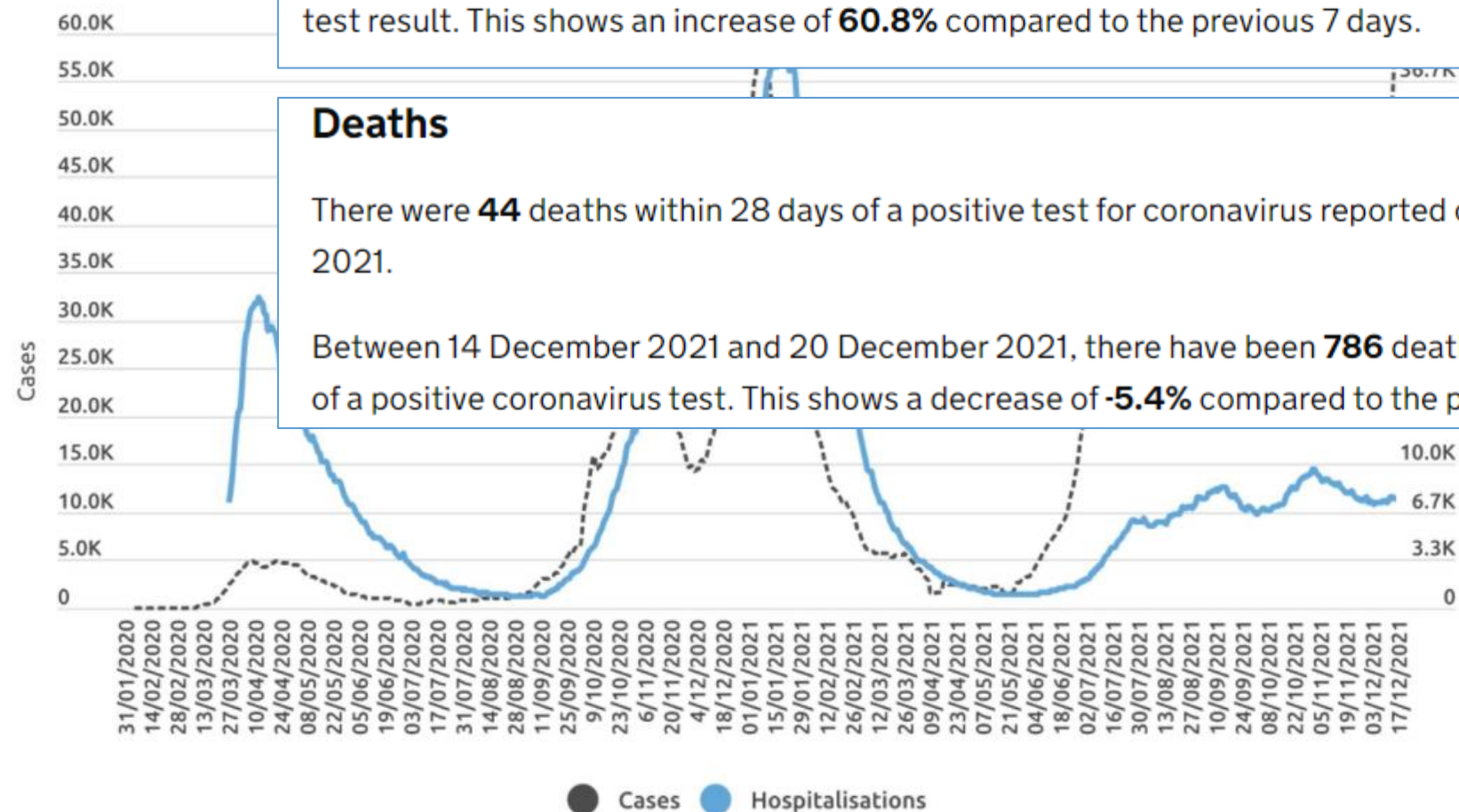
# UK new cases v hospitalisations



Chart uses 2 different

**91,743** new people had a confirmed positive test result reported on 20 December 2021.

Between 14 December 2021 and 20 December 2021, **584,688** people had a confirmed positive test result. This shows an increase of **60.8%** compared to the previous 7 days.



[Download data](#)

[www.covid19data.com.au](http://www.covid19data.com.au)

\* Source: Our World In Data . \* New cases = 7-day average.

By region, 44-87% are presumptive Omicron cases (17-18/12/21 specimens)

**Figure 1. COVID-19 cases with detectable S gene/SGTF and percentage with SGTF among those tested in TaqPath Labs by day, by region**

(95% confidence intervals indicated by grey shading).

Data updated 6pm 19 December 2021.



A detectable S gene is a proxy for Delta since April 2021. SGTF was a surveillance proxy for VOC-20DEC-01 however has largely consisted of Delta since August 2021. Local trends in these data may be affected by decisions to direct the processing of samples via a TaqPath laboratory. Only tests carried out with the TaqPath PCR assay and with confirmed SGTF or S gene results included, from Newcastle, Alderley Park, Milton Keynes and Glasgow Lighthouse Labs. SGTF refers to non-detectable S gene and  $\leq 30$  CT values for N and ORF1ab genes. Detectable S-gene refers to  $\leq 30$  CT values for S, N, and ORF1ab genes. Produced by Outbreak Surveillance Team, UKHSA.

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1042543/20211220\\_OS\\_Daily\\_Omicron\\_Overview.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1042543/20211220_OS_Daily_Omicron_Overview.pdf)

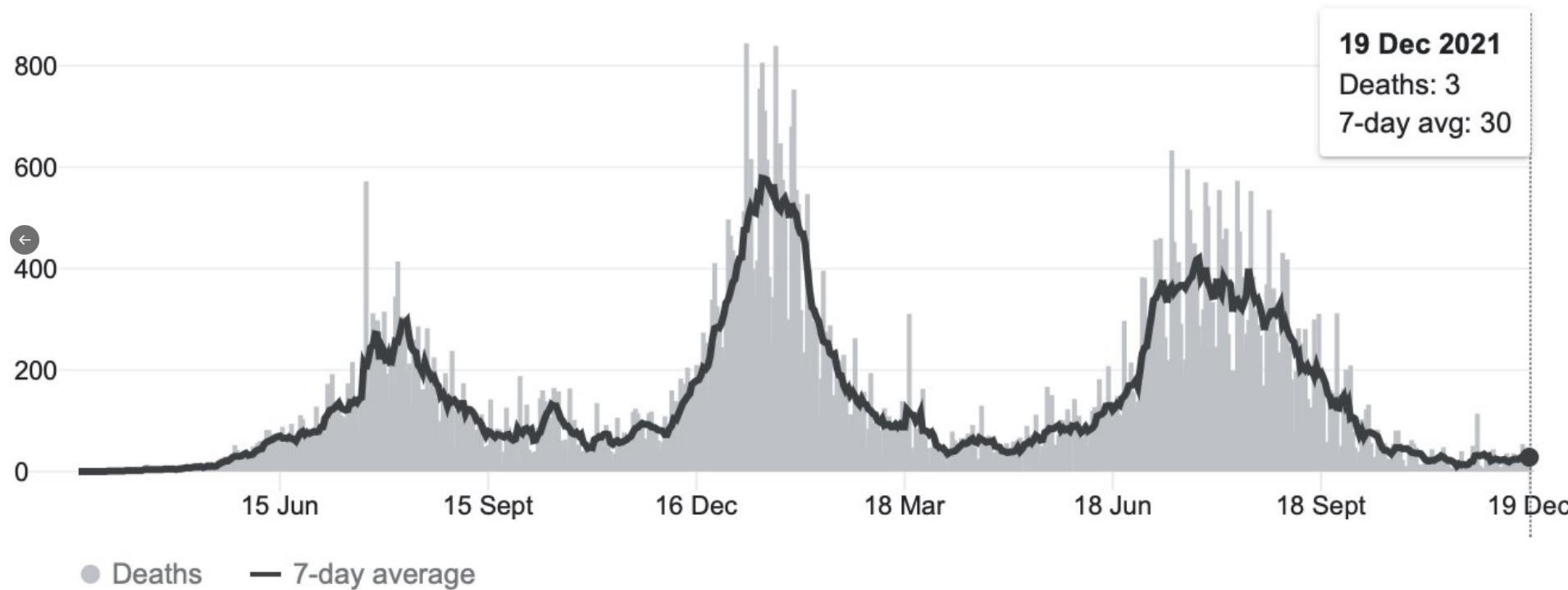
# South Africa

Deaths ▾



South Africa ▾

All time ▾



# Testing – Omicron implications

- All current PCR assays comply with detection
  - Sequencing required to confirm Omicron – largely academic given its likely dominance before long
  - Omicron S (spike) gene changes – deletion of 2 aminoacids and failure of some S gene PCRs = “S gene target failure” – can be used as proxy
  - CT values – can be high still in fully vaccinated – infectious period unknown
- Serological assays:
  - Can distinguish natural from vaccine immunity dependent on test type (Nucleocapsid Ag response for natural infection)
  - Useful when we see a case with very high CT value (> 35) indicating probable historic infection
- Rapid antigen tests (RAT)- most appear to perform well - detect viral nucleocapsid protein ; need more studies however

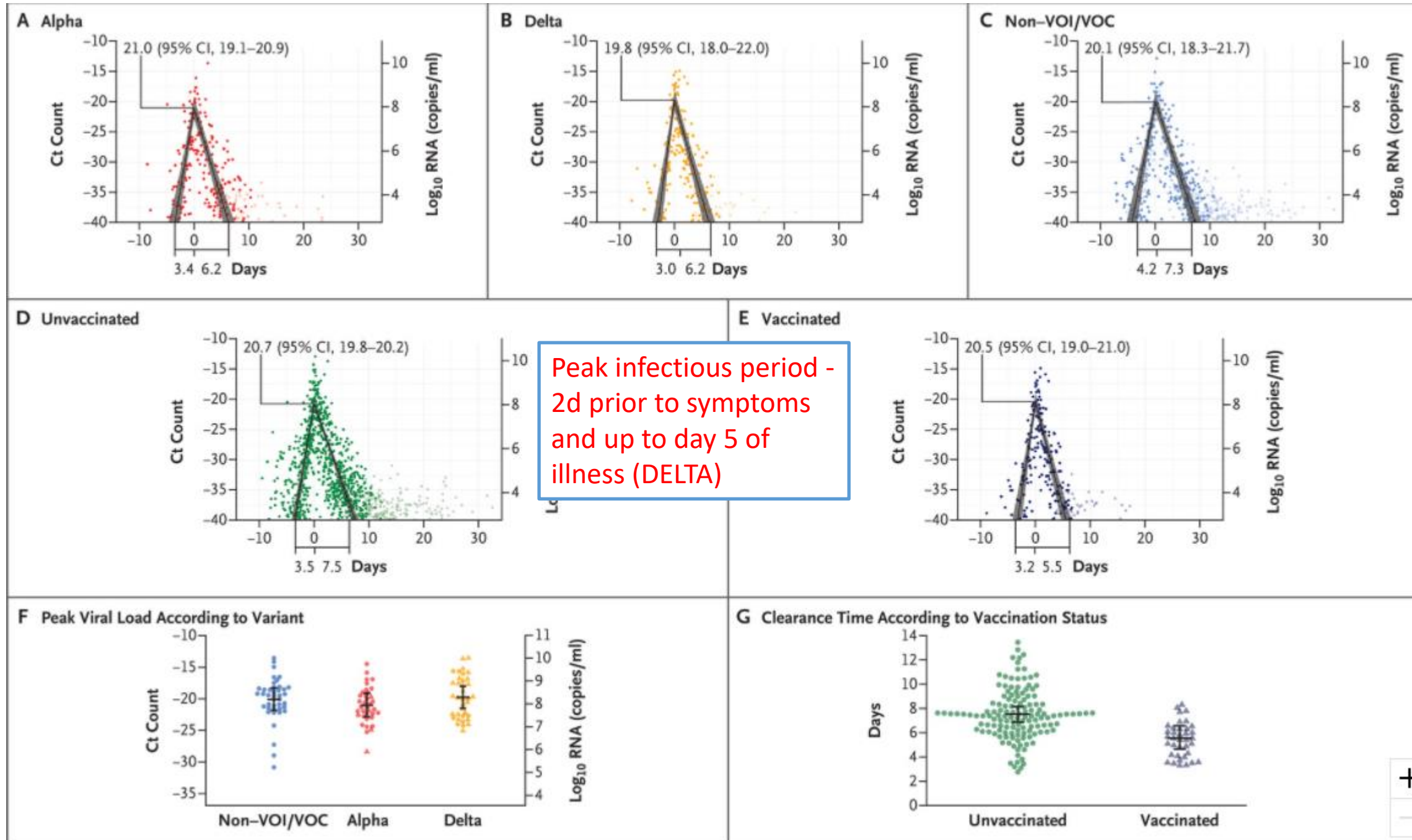
# RATs – good and bad

TGA: This includes a minimum clinical sensitivity of at least 80% (for specimens collected within 7 days of symptom onset) and a minimum clinical specificity of at least 98%

- **Acceptable sensitivity** - clinical sensitivity greater than 80% PPA
- **High sensitivity** - clinical sensitivity greater than 90% PPA
- **Very high sensitivity** - clinical sensitivity greater than 95% PPA

- Assay brand – examine independent data on sensitivity and specificity (TGA endorsed n=16)
- Sample adequacy and type – nose, “oral fluid”, saliva- must use the validated sample type
- Patients with respiratory symptoms – COVID cases- will have high viral load generally – most RATs will perform well ; false negs unlikely
- Asymptomatic patients with low pre-test probability – false positives possible – confirm with PCR

<https://www.tga.gov.au/covid-19-rapid-antigen-self-tests-are-approved-australia>



- Case = Any confirmed positive case of COVID-19 (co-worker, patient, or other)
- NB: All exposure category decisions are based on a local risk assessment
- NB: The use of protective eyewear for contact tracing is applied for droplet precautions when within 1.5m of a positive case (where a mask is not being worn by the case). The absence of eyewear outside of this setting will not increase risk.

### CONTACT TYPE – See page 2 for more detailed assessment of a breach

#### Transient Contact – Low Risk

Transient, not face-to-face, limited contact that does not meet the definition of face-to-face contact  
OR  
In general, less than 30 minutes in a closed space\*  
  
\*Note: always subject to local documented risk assessment, including assessments of occupational exposures and of the closed space

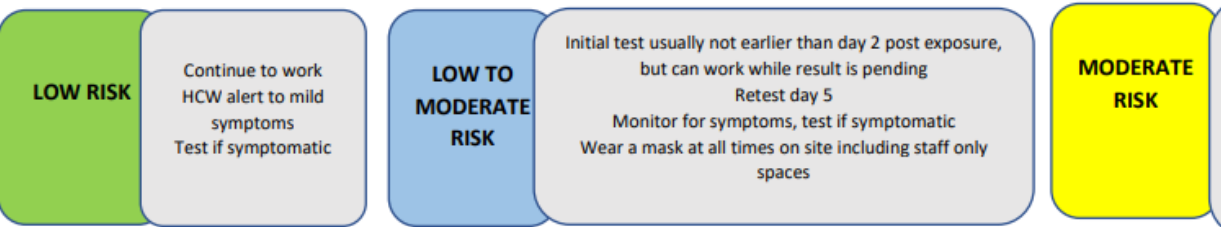
#### Medium Risk Scenarios

Any face-to-face contact within 1.5 metres and less than 15 minutes  
OR  
In general, greater than 30 mins in a closed space  
OR  
Based on agreed documented risk assessment including assessments of occupational exposures and of the physical environment

#### Highest Risk Scenarios

Prolonged face-to-face contact within 1.5 metres and greater than 15 minutes  
OR  
Aerosol generating behaviours (AGBs e.g. coughing)  
OR  
Aerosol generating procedures (AGPs)  
OR  
Contact with multiple COVID-19 cases/suspected cases/probable cases

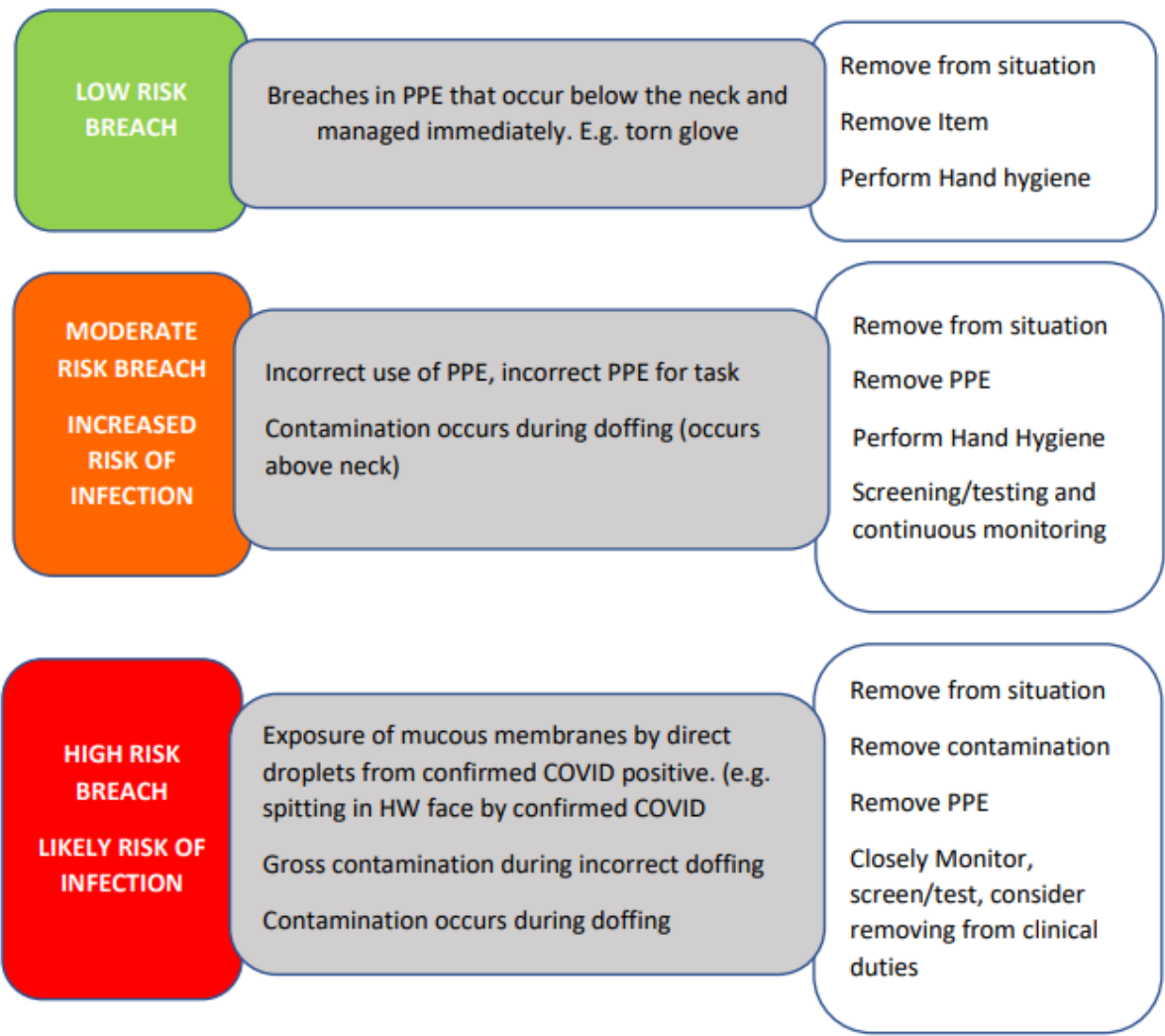
|   |   |  |   |  |  |  |   |
|---|---|--|---|--|--|--|---|
| PPE worn during contact between health care worker and case | 1. No effective PPE worn by staff member or case<br>e.g. no PPE or PPE with major breaches such as mask below nose  | Low to Moderate Risk<br>Depending on risk assessment | OR<br>Moderate Risk<br>Depending on risk assessment | Moderate Risk  |  | High Risk  |   |
|   | 2. Surgical mask only worn by staff member i.e. no eye protection<br>➤ Case no PPE  | Low Risk   |   | Low to Moderate Risk<br>Depending on risk assessment | OR<br>Moderate Risk<br>Depending on risk assessment        | High Risk  |   |
|   | 3. Surgical mask only worn by staff member i.e. no eye protection<br>➤ Case wearing surgical mask   | Low Risk   |   | Low to Moderate Risk                                 |  | Moderate Risk<br>Depending on risk assessment        | OR<br>High Risk<br>Depending on risk assessment     |
|   | 4. Staff member in surgical mask and eye protection* with no concerns or breaches<br>➤ Case no PPE<br>*Use of gown/apron and gloves should be risk assessed based on individual incident, exposure to body substance and chances of environmental contamination | Low Risk   |   | Low Risk<br>Depending on risk assessment             | OR<br>Low to Moderate Risk<br>Depending on risk assessment | Moderate Risk<br>Depending on risk assessment        | OR<br>High Risk<br>Depending on risk assessment     |
|   | 5. Staff member in surgical mask and eye protection* with no concerns or breaches<br>➤ Case wearing surgical mask<br><br>* See note in Category 4 box   | Low Risk   |   | Low Risk   |  | Low to Moderate Risk<br>Depending on risk assessment | OR<br>Moderate Risk<br>Depending on risk assessment |
|   | 6. Staff member in P2/N95 mask and eye protection* with no concerns or breaches<br>➤ Case either with or without PPE<br><br>* See note in Category 4 box  | Low Risk   |   | Low Risk   |  | Low Risk   |   |



This Risk matrix does not replace the CEC Application of PPE Guide [h](#)

**\* PPE Breach Risk Assessment key principles.**

- Perform a risk assessment to determine the level of exposure as applied to COVID-19 suspected/confirmed.



Adapted and modified from work developed by AUSMAT Quarantine management and operations compendium for the Howard Springs Quarantine Facility for the Repatriation of Australians at the Centre for National Resilience. National Critical Care and Trauma Response Centre. Darwin 2021.

Patient exposure version also

Updates expected this week

Aged care setting matrix published 21/12/21

# New normals (HNE LHD) **DELTA WAVE**

- Effective COVID-19 treatments: reducing hospitalisation/severe illness (sotrovimab (SARS-1 MAB) +/- molnupiravir); treatment of worsening illness (steroids, baricitinib, tocilizumab)
- Patient & visitor at healthcare location entry –message:  
“ Potential COVID-19 risk zone – to protect yourself (even if vaccinated), please keep your distance, wear your mask continuously and clean your hands.”
- Clinical staff: eye protection & surgical mask during clinical care; fit tested respirators (N95) for COVID care
- Asymptomatic staff, visitors, patients with COVID-19: consistent mask use when indoors or in close confines
- Patients with acute respiratory infection: airborne precautions by default; PCR test all admissions
- Engineering: identify isolation resources; air filtration devices in common areas

# New normals (HNE LHD) **OMICRON WAVE**

- Effective COVID-19 treatments: no change
- Patients
  - ED presentations – RAT test at triage
  - Patients with resp sx being admitted – PCR
  - Emergency surgery admissions – RAT/PCR
  - Interval RAT testing for inpatients – at 4 days
- Staff
  - Booster vax
  - Avoid high risk exposure haunts / indoor events
  - Heightened awareness of symptom status (atypical/ mild)
- Revised close and casual contact protocols (CEC and HNE Guidance)
  - Secondary close contact approach
  - Targeted contact tracing – unexpected new pos inpatients or staff working when infectious

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### Risk Assessment: Staff identified as COVID-19 Contacts

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**Sites where PCP applies**

All HNELHD facilities

**Target audience**

All staff.

**Description**

This document provides guidance on the risk assessment of healthcare workers who have a household member who has been identified as a COVID-19 casual contact, secondary close contact or close contact

- Will be shared by email

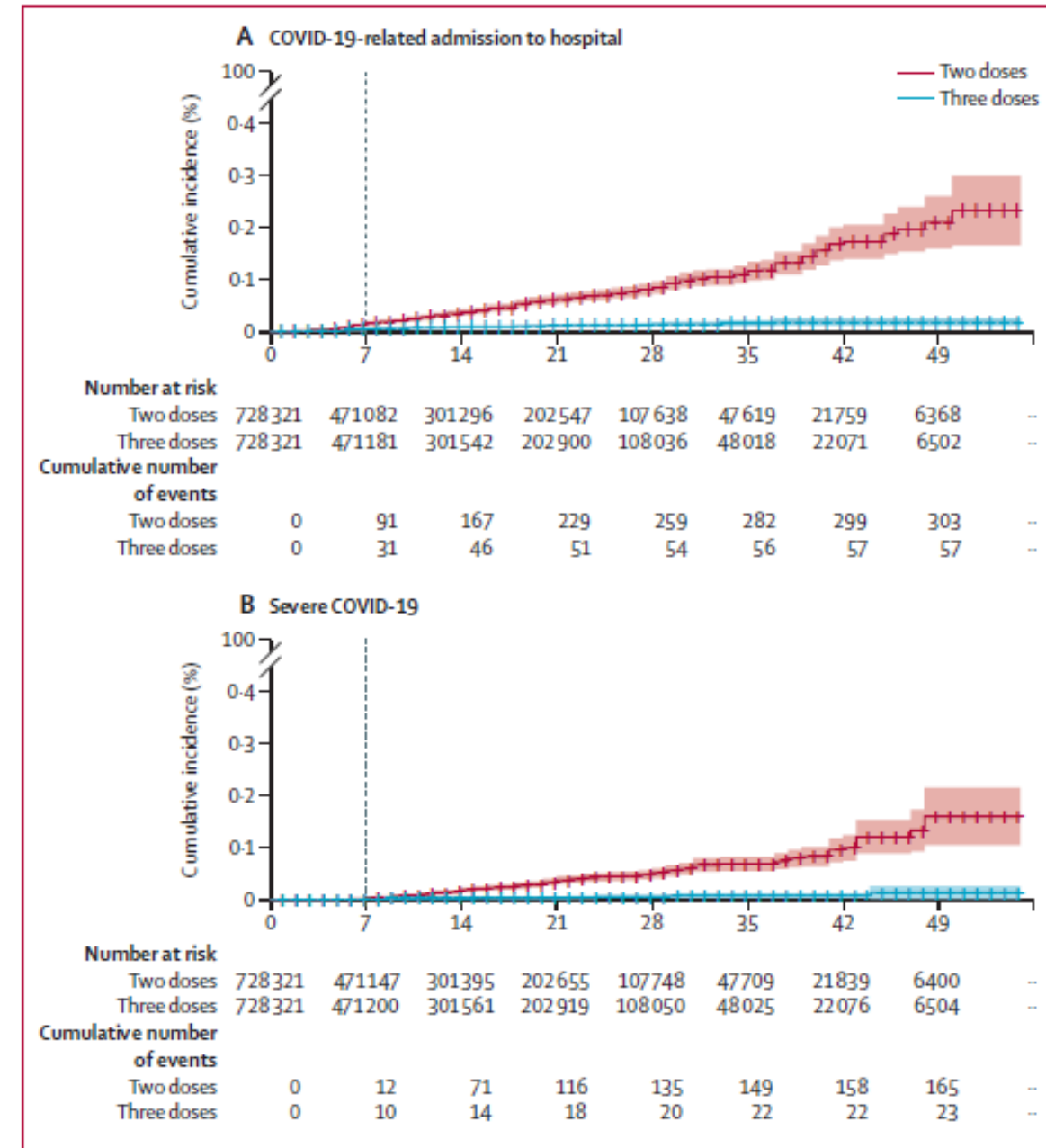
# Booster vaccination

- Recent large case control Lancet study from Israel evaluating efficacy of third dose after 5 mths:
  - 93% (231 events for two doses vs 29 events for three doses; 95% CI 88–97) for admission to hospital,
  - 92% (157 vs 17 events; 82–97) for severe disease,
  - 81% (44 vs seven events; 59–97) for COVID-19-related death

- Evidence that boosters months after natural infection lead to durable prolonged protection

- mRNA or AZ boosters more effective if primary course was with an inactivated vaccine

- <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2821%2902249-2>
- [Effectiveness and durability of protection against future SARS-CoV-2 infection conferred by COVID-19 vaccination and previous infection; findings from the UK SIREN prospective cohort study of healthcare workers March 2020 to September 2021 | medRxiv](#)
- [Safety and immunogenicity of the third booster dose with inactivated, viral vector, and mRNA COVID-19 vaccines in fully immunized healthy adults with inactivated vaccine | medRxiv](#)



# Clinical management flowcharts

- Definitions of severity ->
- Risk factors:

## DISEASE-MODIFYING TREATMENTS FOR ADULTS WITH COVID-19



|                                | Not requiring oxygen WITHOUT lower respiratory tract disease  | Not requiring oxygen WITH lower respiratory tract disease   | Requiring oxygen WITHOUT mechanical ventilation   | Requiring invasive mechanical ventilation  |
|--------------------------------|---|---|---|--|
| DEFINITION OF DISEASE SEVERITY | <b>Mild</b><br>An individual with no clinical features suggestive of moderate or more severe disease: <ul style="list-style-type: none"> <li>• no or mild symptoms and signs (fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhoea, loss of taste and smell)</li> <li>• no new shortness of breath or difficulty breathing on exertion</li> <li>• no evidence of lower respiratory tract disease during clinical assessment or on imaging (if performed)</li> </ul> | <b>Moderate</b><br>A stable patient with evidence of lower respiratory tract disease: <ul style="list-style-type: none"> <li>• during clinical assessment, such as                             <ul style="list-style-type: none"> <li>– oxygen saturation 92-94% on room air at rest</li> <li>– desaturation or breathlessness with mild exertion</li> </ul> </li> <li>• or on imaging</li> </ul> | <b>Severe</b><br>A patient with signs of moderate disease who is deteriorating OR<br>A patient meeting any of the following criteria: <ul style="list-style-type: none"> <li>• respiratory rate <math>\geq 30</math> breaths/min</li> <li>• oxygen saturation <math>&lt; 92\%</math> on room air at rest or requiring oxygen</li> <li>• lung infiltrates <math>&gt; 50\%</math></li> </ul>  | <b>Critical</b><br>A patient meeting any of the following criteria: <ul style="list-style-type: none"> <li>• respiratory failure (defined as any of)                             <ul style="list-style-type: none"> <li>– severe respiratory failure (<math>\text{PaO}_2/\text{FiO}_2 &lt; 200</math>)</li> <li>– respiratory distress or acute respiratory distress syndrome (ARDS)</li> <li>– deteriorating despite non-invasive forms of respiratory support (i.e. non-invasive ventilation (NIV), or high-flow nasal oxygen (HFNO))</li> </ul> </li> <li>• requiring mechanical ventilation</li> <li>• hypotension or shock</li> <li>• impairment of consciousness</li> <li>• other organ failure</li> </ul> |
| RECOMMENDED                    |   |   | Use <b>dexamethasone</b> 6 mg daily intravenously or orally for up to 10 days (or acceptable alternative regimen) in adults with COVID-19 who are <b>receiving oxygen</b> (including mechanically ventilated patients).   |  |
| CONDITIONAL RECOMMENDATION FOR | Consider using inhaled <b>budesonide</b> within 14 days of symptom onset in adults with COVID-19 who <b>do not require oxygen</b> and have one or more <b>risk factors</b> <sup>^</sup> for disease progression.  | Consider using one of the following:<br><br>Consider using <b>casirivimab plus imdevimab</b> within 7 days of symptom onset in adults with COVID-19 who <b>do not require oxygen</b> and have one or more <b>risk factors</b> <sup>^</sup> for disease progression. #   | Consider using <b>remdesivir</b> in adults with COVID-19 who <b>require oxygen but do not require non-invasive or invasive ventilation</b> .  | Consider using <b>casirivimab plus imdevimab</b> in <b>seronegative</b> adults hospitalised with moderate to critical COVID-19. *  |
|                                |   | Consider using <b>sotrovimab</b> within 5 days of symptom onset in adults with COVID-19 who <b>do not require oxygen</b> and have one or more <b>risk factors</b> <sup>^</sup> for disease progression. #   | Consider using one of the following:<br><br>Consider using <b>baricitinib</b> in adults hospitalised with COVID-19 who <b>require supplemental oxygen</b> .<br><br>Consider using <b>tocilizumab</b> for the treatment of COVID-19 in adults who <b>require supplemental oxygen</b> , particularly where there is evidence of <b>systemic</b><br><br>Consider using <b>sarilumab</b> for the treatment of COVID-19 in adults who <b>require high-flow oxygen, non-invasive ventilation or invasive mechanical ventilation</b> . * |  |

### Budesonide

Age  $\geq 65$  years or  $\geq 50$  years with one or more of the following comorbidities:

- Diabetes (not treated with insulin)
- Heart disease and/or hypertension
- Asthma or lung disease
- Weakened immune system due to a serious illness or medication (e.g. chemotherapy)
- Mild hepatic impairment
- Stroke or other neurological problem

Note: Risk factors are based on PRINCIPLE trial inclusion criteria

### Sotrovimab

- Diabetes (requiring medication)
- Obesity ( $\text{BMI} \geq 30 \text{ kg/m}^2$ )
- Chronic kidney disease (i.e.  $\text{eGFR} < 60$  by MDRD)
- Congestive heart failure (NYHA class II or greater)
- Chronic obstructive pulmonary disease (history of chronic bronchitis, chronic obstructive lung disease, or emphysema with dyspnoea on physical exertion)
- Moderate-to-severe asthma (requiring an inhaled steroid to control symptoms or prescribed a course of oral steroids in the previous 12 months)
- Age  $\geq 55$  years

Note: Risk factors are based on COMET-ICE trial inclusion criteria

# Positive case clearance – CDNA COVID19 SONG

## 1. Confirmed cases who have remained asymptomatic

| Fully vaccinated case  | Unvaccinated/ partially vaccinated case or unknown vaccination status  |
|--|--|
| <p>The case can be released from isolation if:</p> <ul style="list-style-type: none"><li>at least 10 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken; and</li><li>no symptoms have developed during this period.</li></ul> <p>Some jurisdictions may support earlier release if:</p> <ul style="list-style-type: none"><li>at least 7 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken; and</li><li>no symptoms have developed; and</li><li>PCR is negative at day 7 from specimen collection date.</li></ul> | <p>The case can be released from isolation if:</p> <ul style="list-style-type: none"><li>at least 14 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken; and</li><li>no symptoms have developed during this period.</li></ul> <p>Some jurisdictions may support earlier release if:</p> <ul style="list-style-type: none"><li>at least 10 days have passed since the first respiratory specimen positive for SARS-CoV-2 by PCR was taken; and</li><li>no symptoms have developed; and</li><li>PCR is negative at day 10 from specimen collection date.</li></ul> |

### Testing after release from isolation

Routine PCR testing post-release from isolation is not recommended unless the person re-develops clinical features consistent with COVID-19.

If a case has not re-developed COVID-19 symptoms but is swabbed and tests positive after they have met the above release from isolation criteria, then the case does not require re-isolation. Current evidence and Australian public health experience indicates these people are unlikely to be infectious.

## 2. Confirmed cases with resolution of fever and substantial improvement of respiratory symptoms

| Fully vaccinated case  | Unvaccinated/ partially vaccinated case or unknown vaccination status  |
|--|--|
| <p>The case can be released from isolation if:</p> <ul style="list-style-type: none"><li>at least 10 days have passed since symptom onset; and</li><li>there has been resolution of fever and substantial improvement of respiratory symptoms of the acute illness for the previous 72 hours<sup>1</sup>.</li></ul> <p>Some jurisdictions may support earlier release if:</p> <ul style="list-style-type: none"><li>at least 7 days have passed since symptom onset; and</li><li>there has been resolution of fever and substantial improvement of respiratory symptoms of the acute illness for the previous 72 hours<sup>1</sup>; and</li><li>PCR is negative at day 7 from symptom onset.</li></ul> | <p>The case can be released from isolation if:</p> <ul style="list-style-type: none"><li>at least 14 days have passed since symptom onset; and</li><li>there has been resolution of fever and substantial improvement of respiratory symptoms of the acute illness for the previous 72 hours<sup>1</sup>.</li></ul> <p>Some jurisdictions may support earlier release if:</p> <ul style="list-style-type: none"><li>at least 10 days have passed since symptom onset; and</li><li>there has been resolution of fever and substantial improvement of respiratory symptoms of the acute illness for the previous 72 hours<sup>1</sup>; and</li><li>PCR is negative at day 10 from symptom onset.</li></ul> |

<https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm> (9Dec21 update)

# References

Thank you!

[John.ferguson@health.nsw.gov.au](mailto:John.ferguson@health.nsw.gov.au)

<http://aimed.net.au>

@mdj kf



WHO technical brief 17/12/21

[https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-\(b.1.1.529\)-technical-brief-and-priority-actions-for-member-states](https://www.who.int/publications/m/item/enhancing-readiness-for-omicron-(b.1.1.529)-technical-brief-and-priority-actions-for-member-states)

National COVID19 Evidence Taskforce (flowcharts)

<https://covid19evidence.net.au/>

CDNA COVID19 SONG:

<https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm>

CEC/NSW Health staff exposure approaches:

<https://www.health.nsw.gov.au/Infectious/covid-19/Pages/advice-for-professionals.aspx>

Close contact protocol:

<https://www.health.nsw.gov.au/Infectious/factsheets/Pages/advice-for-contacts.aspx>

Casual contact protocol:

<https://www.health.nsw.gov.au/Infectious/factsheets/Pages/covid-19-casual-contact.aspx>

Release /recovery COVID19 (NSW) :

<https://www.health.nsw.gov.au/Infectious/factsheets/Pages/recovery.aspx>

Patient or visitor COVID-19 exposures in healthcare facilities (CEC):

[https://www.cec.health.nsw.gov.au/\\_data/assets/pdf\\_file/0017/690002/patient-or-visitor-COVID-19-exposures-in-healthcare-facilities.pdf](https://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0017/690002/patient-or-visitor-COVID-19-exposures-in-healthcare-facilities.pdf)