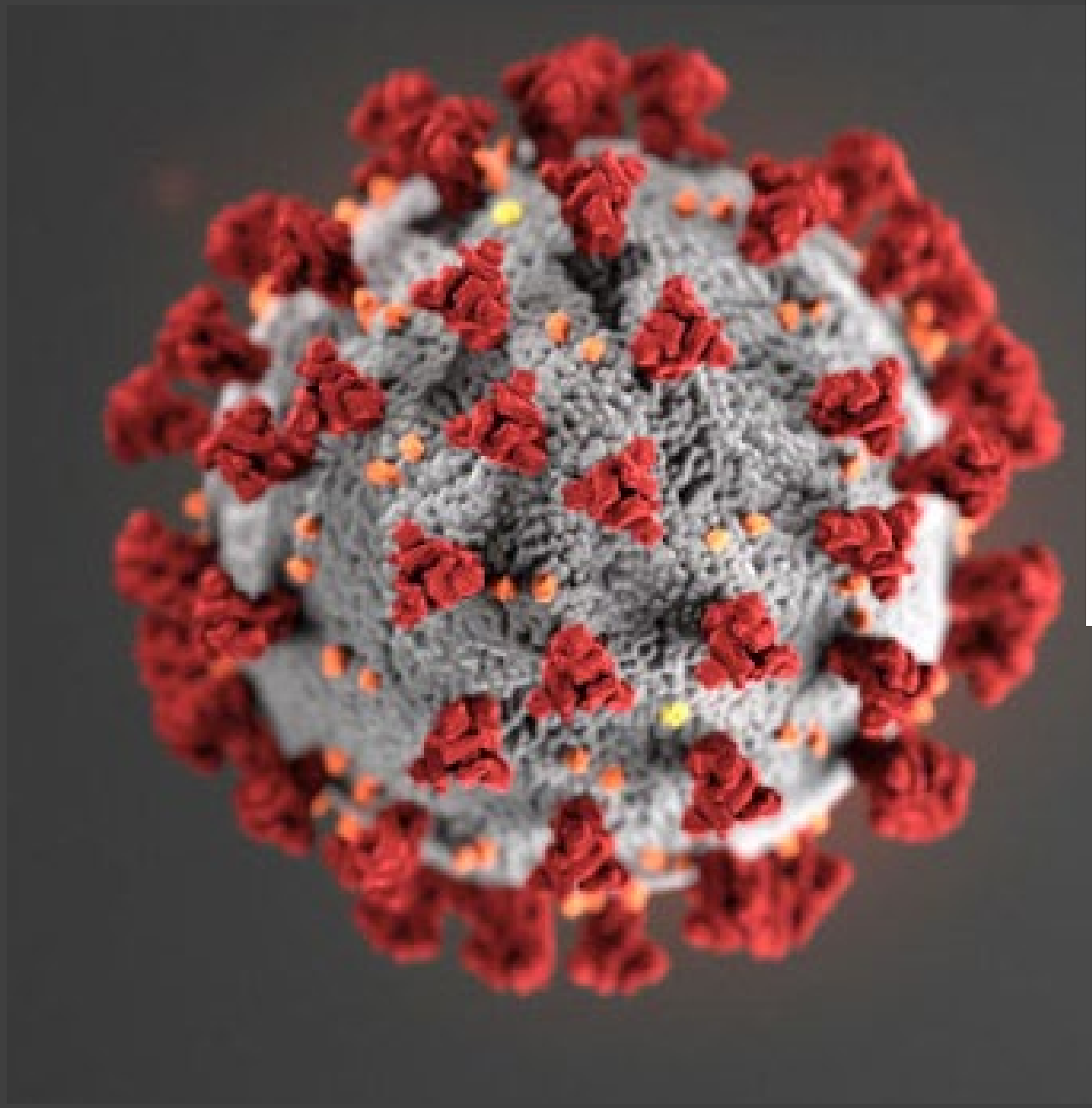
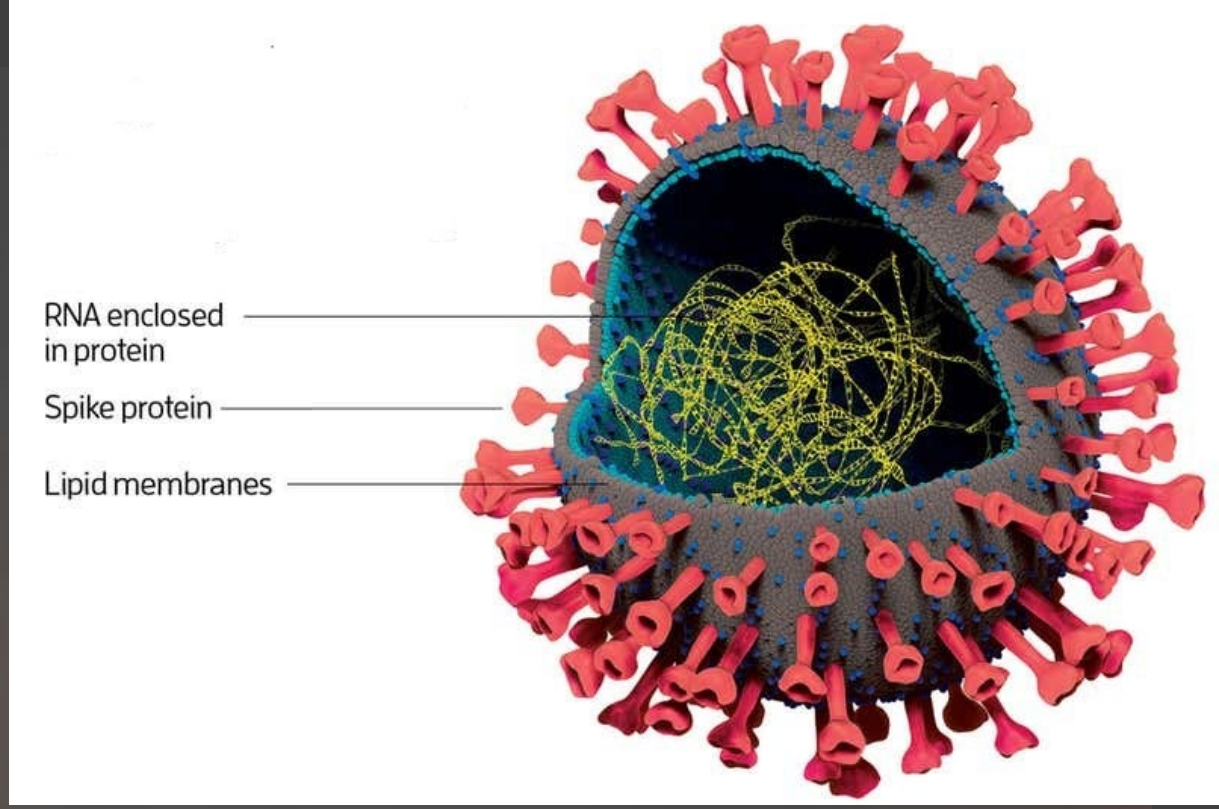
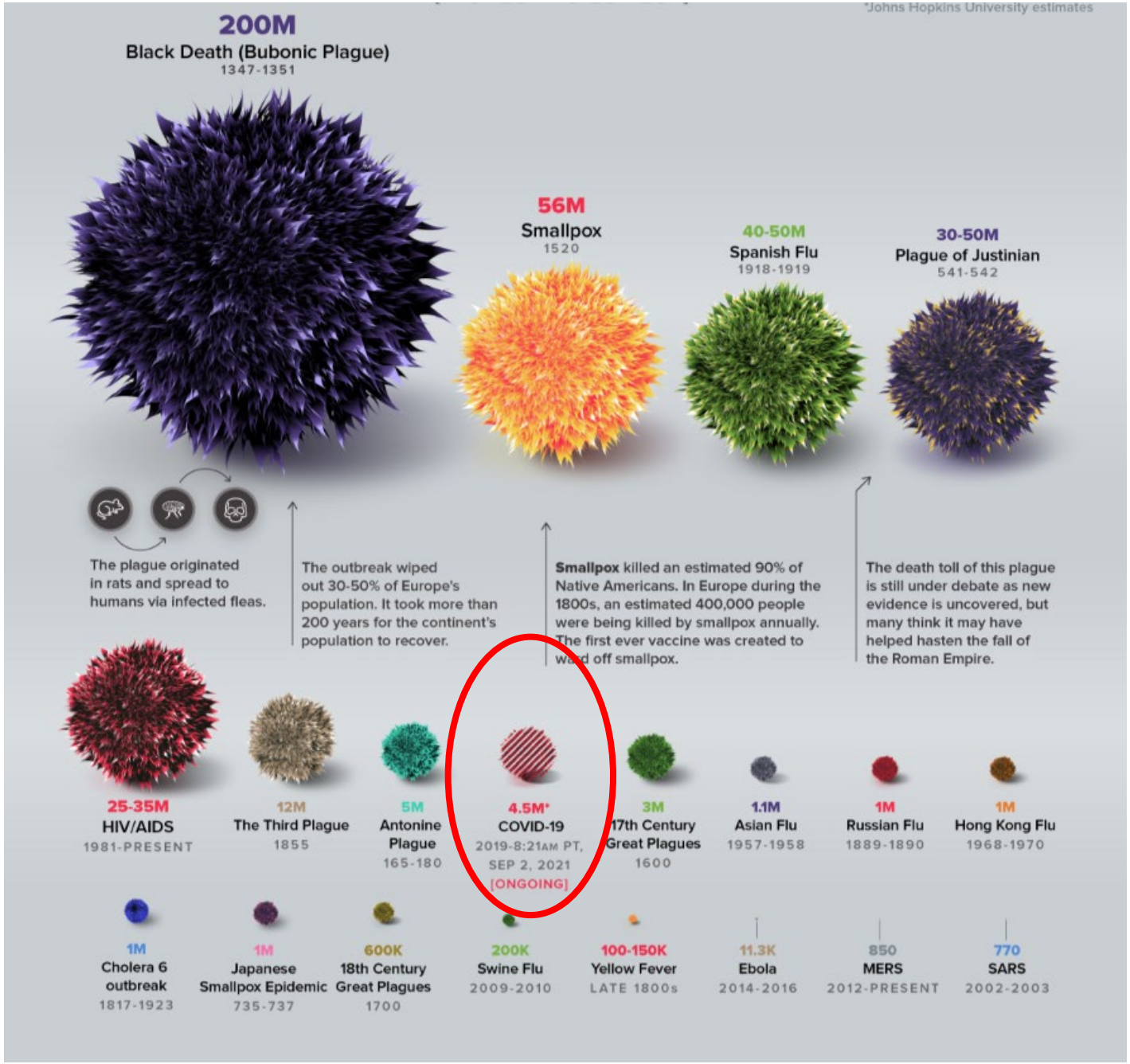




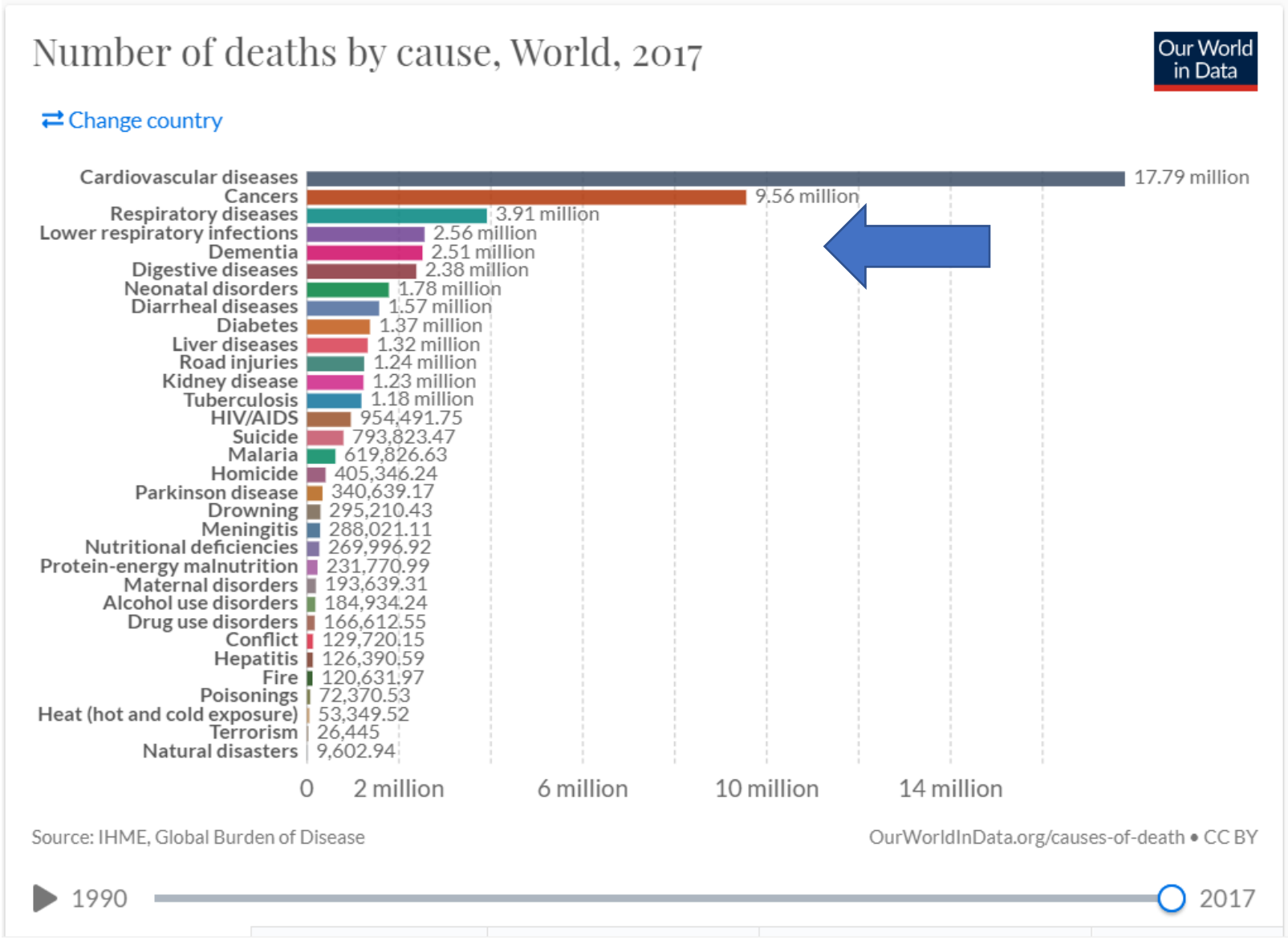
Covid In The Community – Planning for endemic Covid in 2022

- Pandemic
- Delta
- Management in the community current resources



https://www.visualcapitalist.com/history-of-pandemics-deadliest/

How does covid19 compare to other causes of death ?



https://ourworldindata.org/causes-of-death

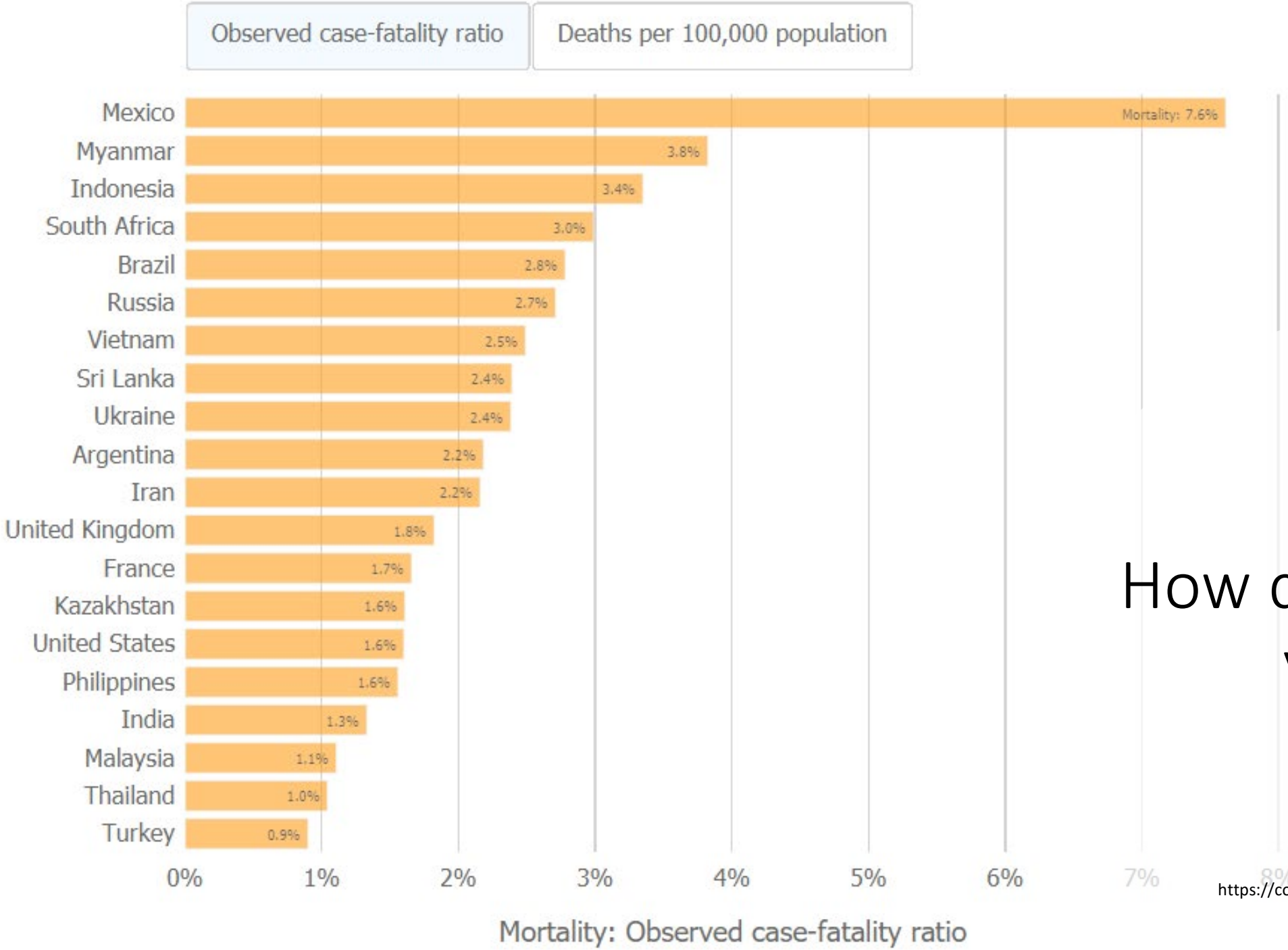
Covid19 – globally 4.7 million deaths to date

3.7 million in past 12 months

207 million people have recovered

? 20 million “long covid”

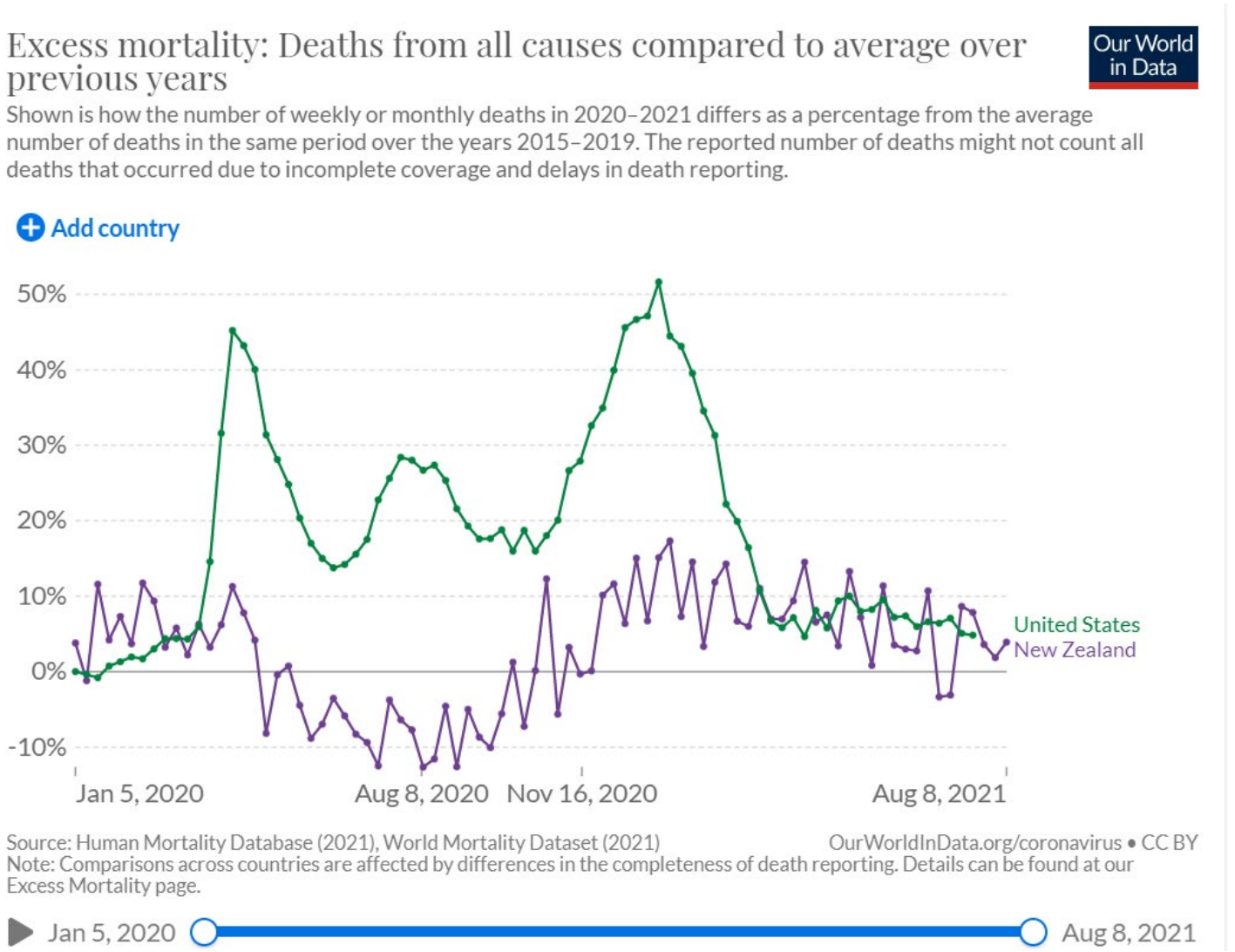
(https://www.worldometers.info/coronavirus/)



How deadly is the virus ?

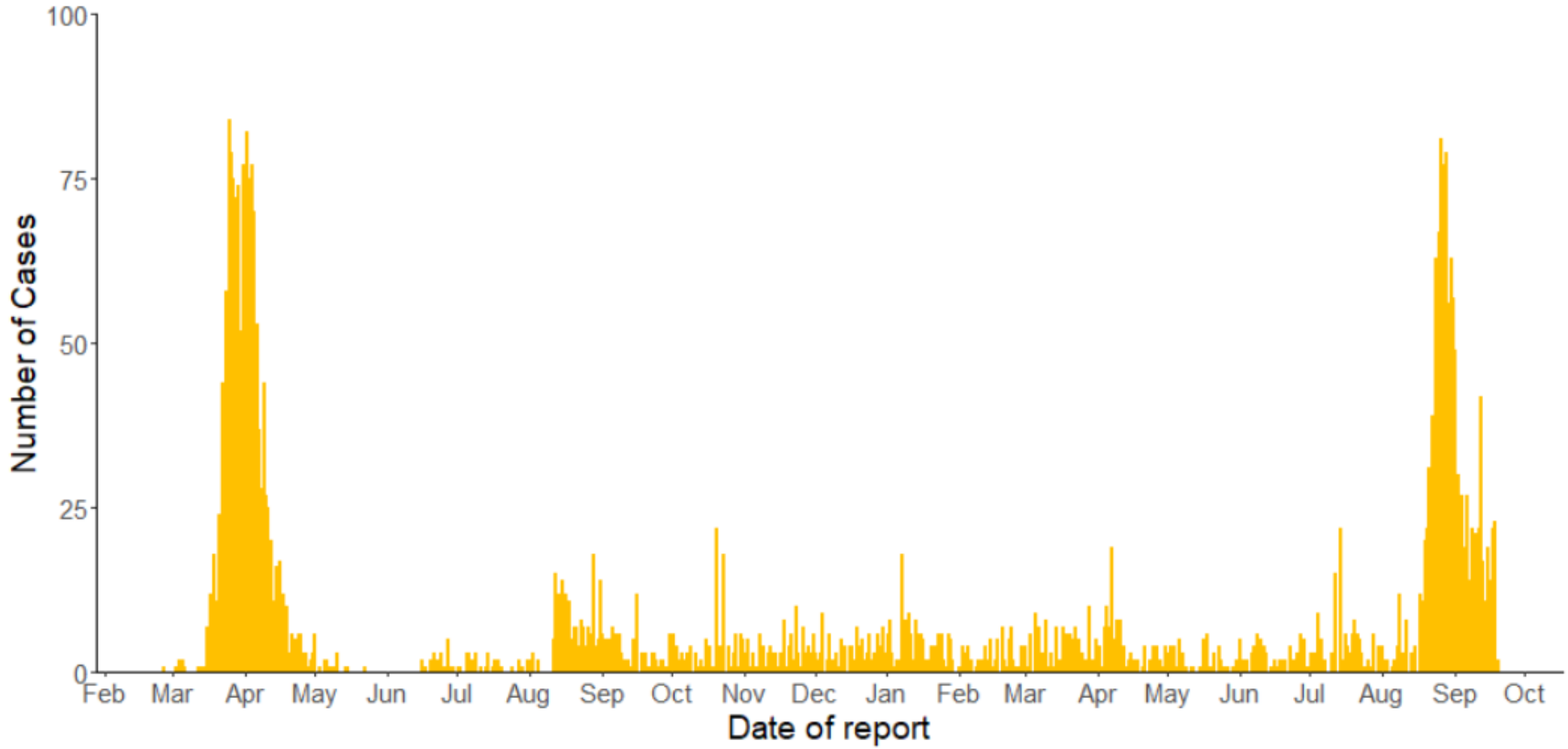
https://coronavirus.jhu.edu/data/mortality

How deadly is the pandemic ?



https://ourworldindata.org/excess-mortality-covid

Daily confirmed and probable cases



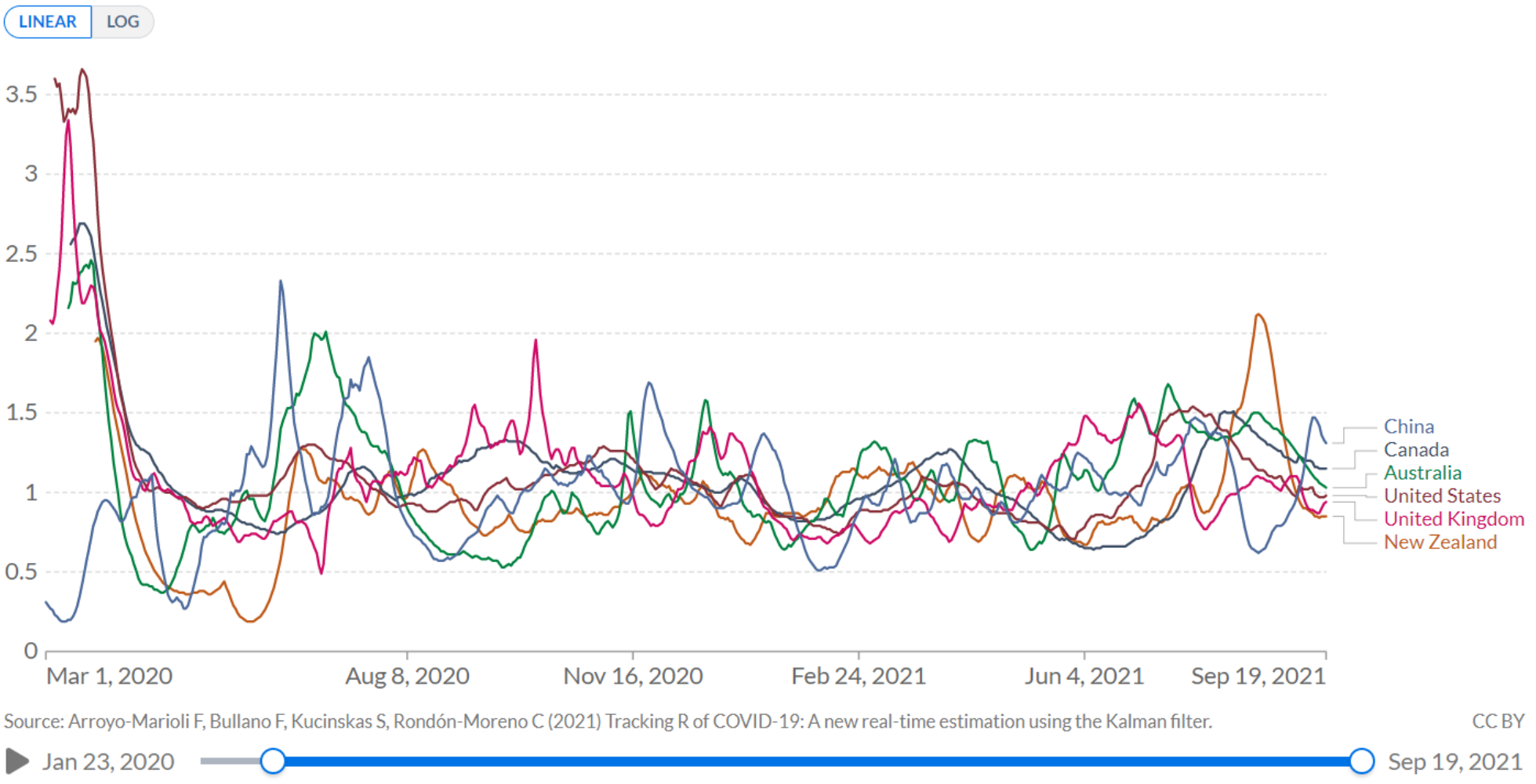
New COVID-19 cases reported each day

https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-data-and-statistics/covid-19-current-cases

Estimate of the effective reproduction rate (R) of COVID-19

The reproduction rate represents the average number of new infections caused by a single infected individual. If the rate is greater than 1, the infection is able to spread in the population. If it is below 1, the number of cases occurring in the population will gradually decrease to zero.

Our World in Data



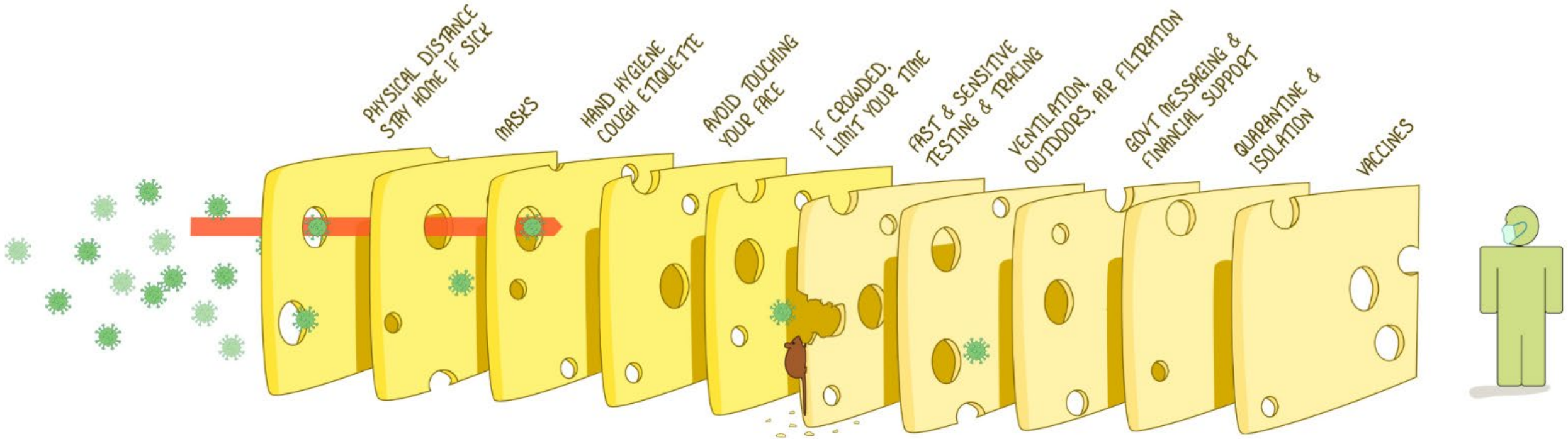
Source: Arroyo-Marioli F, Bullano F, Kucinskas S, Rondón-Moreno C (2021) Tracking R of COVID-19: A new real-time estimation using the Kalman filter.

Jan 23, 2020 — Sep 19, 2021

https://ourworldindata.org/explorers/coronavirus-data-explorer?zoomToSelection=true&time=2020-03-01..latest&facet=none&pickerSort=asc&pickerMetric=location&Metric=Reproduction+rate&Interval=7-day+rolling+average&Relative+to+Population=true&Align+outbreaks=false&country=USA~GBR~AUS~CAN~CHN~NZL

The Swiss Cheese Respiratory Virus Pandemic Defence

Recognising that no single intervention is perfect at preventing spread



Each intervention (layer) has imperfections (holes).
Multiple layers improve success.

Ian M Mackay
virologydownunder.com
With thanks to Jody Lanard, Katherine Arden & the Uni of Qld
Based on the Swiss cheese model of accident causation, by James T Reason, 1990
version 3.0
update: 24oct2020

Dawn of Delta

MORE TRANSMISSIBLE

43 to 90% more transmissible / R0 5.5-6.5 (max 8-9) / Infectious period <18d

9-12% of cases asymptomatic & viral load similar for vaccinated / unvaccinated

SYMPTOMS LIKELY "CLASSICAL"

fever 72%, cough 46%, sore throat 34%, SoB 19%, nasal congestion/ runny nose 16%

https://www.gavi.org/vaccineswork/five-things-we-know-about-delta-coronavirus-variant-and-two-things-we-still-need
https://www.health.govt.nz/system/files/documents/pages/27-august-2021-variants-update-summary.pdf

Dawn of Delta

MORE LIKELY TO BE HOSPITALISED WITH THE DELTA VARIANT

2.3 times the risk of hospitalisation / case fatality rate 0.2%

TWO VACCINE DOSES ARE STILL STRONGLY PROTECTIVE

Symptoms 88% vs 93% effectiveness against the Alpha variant

Hospitalisation 96% vs 97% effectiveness against the Alpha variant

https://www.gavi.org/vaccineswork/five-things-we-know-about-delta-coronavirus-variant-and-two-things-we-still-need
https://www.health.govt.nz/system/files/documents/pages/27-august-2021-variants-update-summary.pdf

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Delta continued...

- Latency (period from exposure to becoming infectious) 2-7 days (median 4 days)
- Incubation (period form exposure to symptoms) 5.8 days
- Serial Interval (time from onset of symptoms in case A to symptoms in caseB) 2.5- 3.0 days
- spread to at least 114 countries worldwide

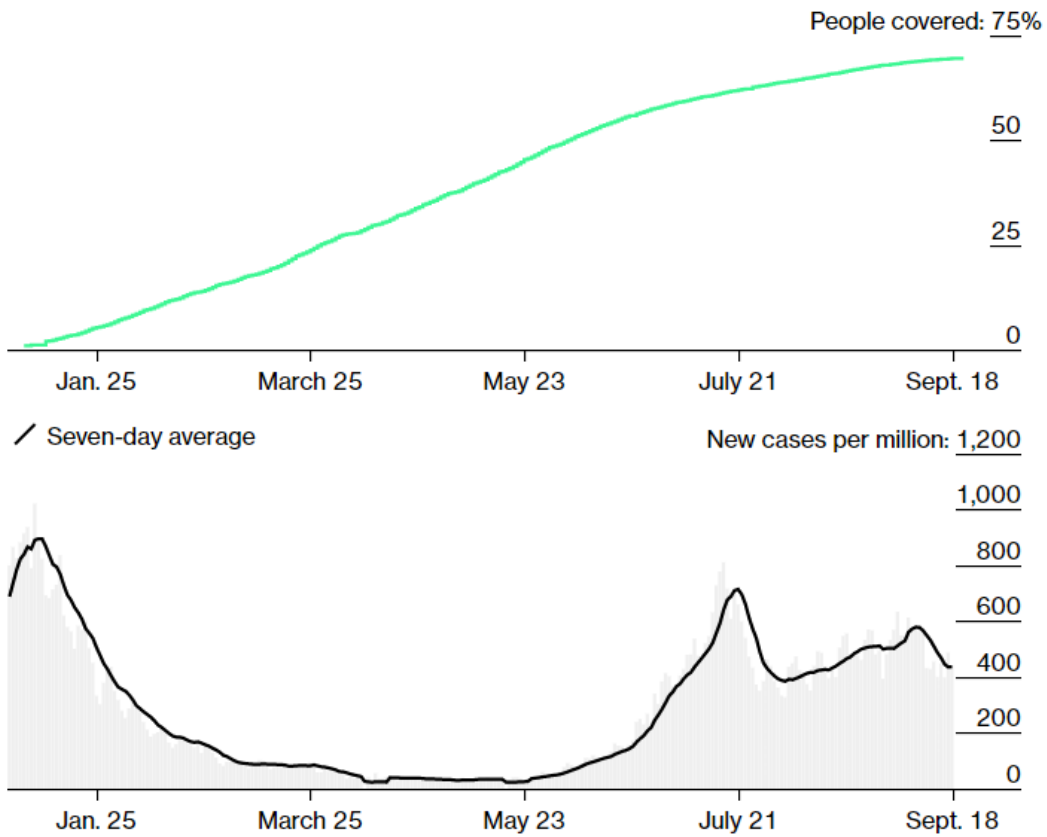
Why will Covid be endemic in 2022 ?

1. Breakthrough infections in the fully vaccinated
2. Unvaccinated children (and eligible adults) will provide a resevoir of infection
3. More open borders with less focus on managed isolation
4. Reduced investment in testing and contact tracing
5. “Covid fatigue” in the news cycle

Vaccine Tracker

Global ↗ U.S. ↗ U.S. Vaccine Demographics ↗ FAQ ↗ Covid-19 Tracker ↗

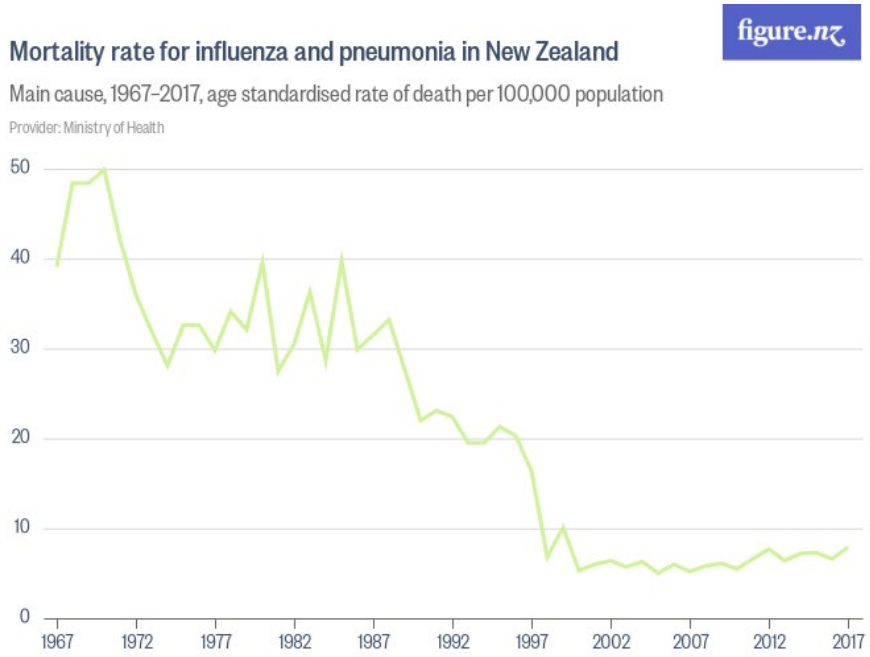
United Kingdom (69.5% covered)



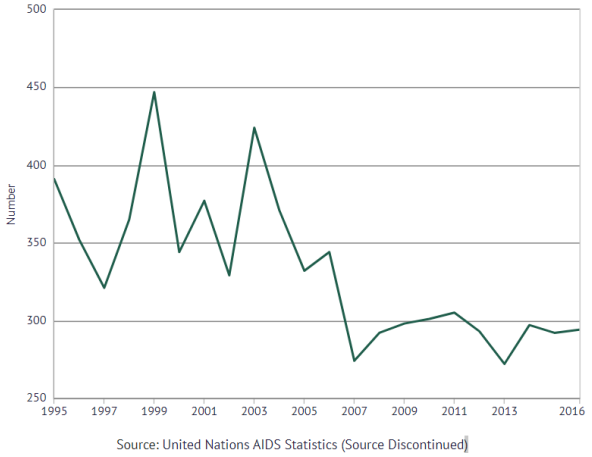
Note: "People covered" divides the doses administered for each vaccine type by the number of doses required for full vaccination. Vaccine data from Bloomberg's Covid-19 Tracker. Cases data: Johns Hopkins University.

https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/

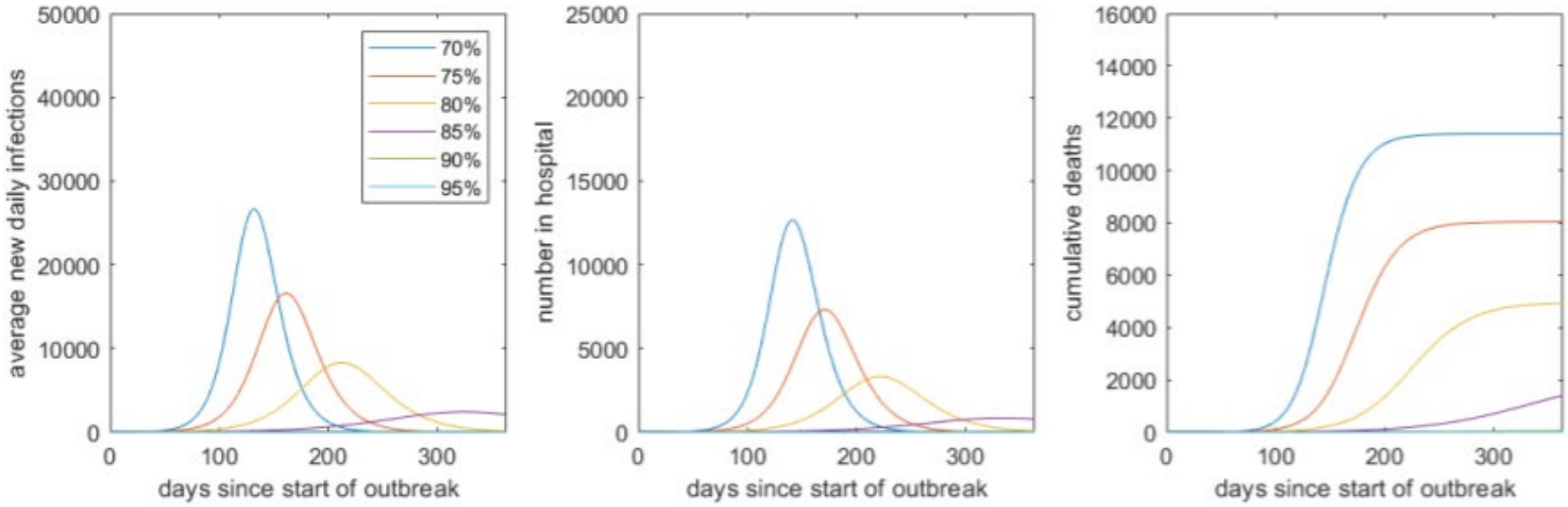
What level of COVID will we see ?



TB mortality NZ



DATE	VALUE	CHANGE, %
2016	294.00	0.68 %
2015	292.00	-1.68 %
2014	297.00	9.19 %
2013	272.00	-7.17 %
2012	293.00	-3.93 %
2011	305.00	1.33 %
2010	301.00	1.01 %
2009	298.00	2.05 %
2008	292.00	6.57 %
2007	274.00	-20.35 %



Average new daily SARS-CoV-2 infections, number of COVID-19 patients in hospital, and cumulative COVID19 deaths over a 365 day period for different levels of vaccine coverage (from 70% to 95%) in over 5s with full TTIQ Results shown are for the central vaccine effectiveness assumptions.

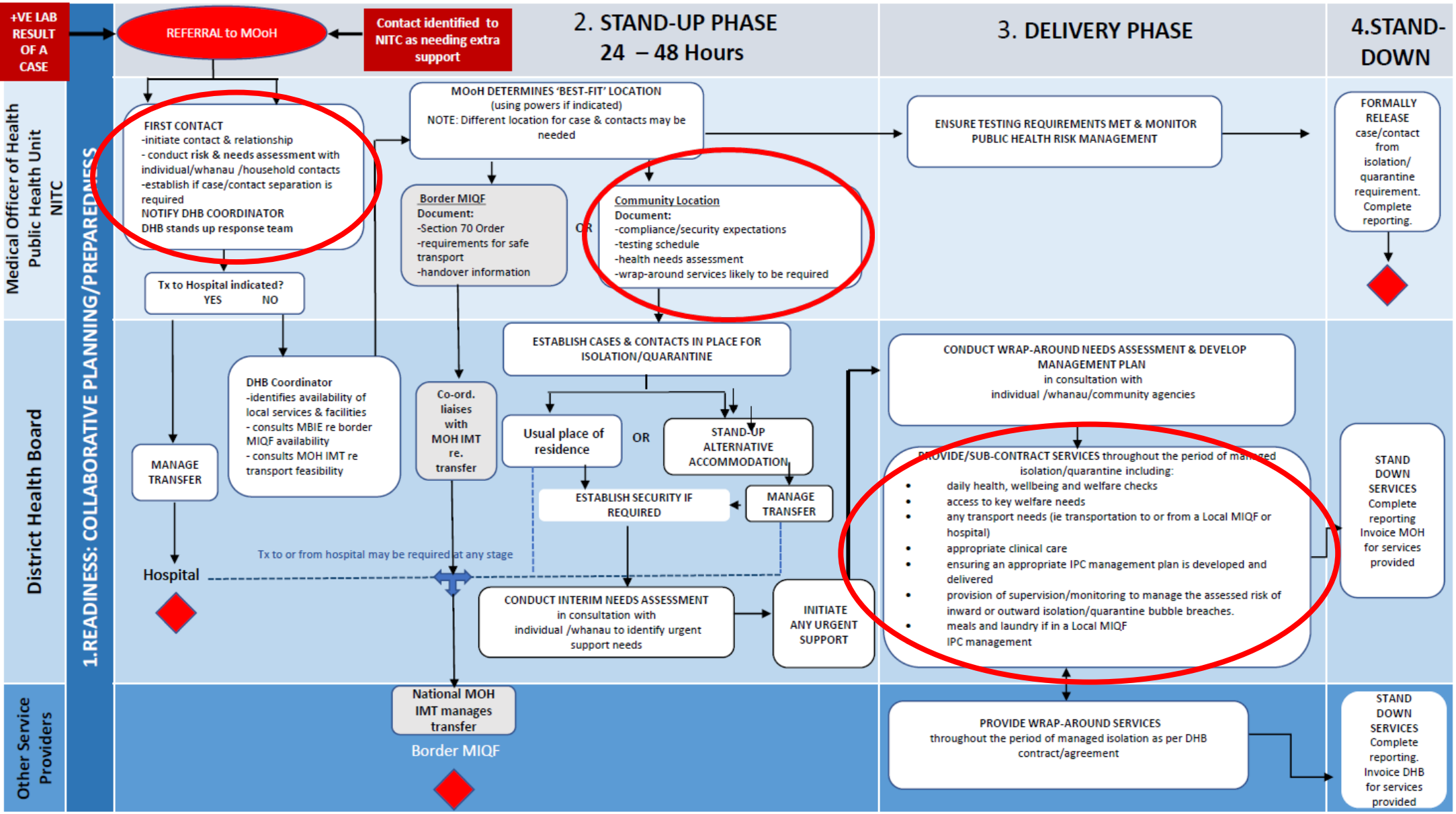
Full TTIQ e.g. Improved air filtration and ventilation requirements, or where these cannot be met, mandatory mask use or some density or capacity restrictions for indoor venues • Vaccine passports • Support for people to isolate • Rapid-testing at workplaces and schools

https://cpb-ap-se2.wpmucdn.com/blogs.auckland.ac.nz/dist/d/75/files/2017/01/modelling-to-support-a-future-covid-19-strategy.pdf

Over 12s	High VE	Cent VE	Low VE	High VE	Cent VE	Low VE	High VE	Cent VE	Low VE	High VE	Cent VE	Low VE
70%	1202590	1848646	2619610	78877	106172	137348	9523	13271	17947	8490	15549	26732
75%	881494	1579662	2435510	52272	81674	114983	6151	10001	14820	4128	10089	20680
80%	444142	1288249	2240443	22573	58464	93456	2560	7004	11870	1394	5770	15310
85%	42338	962392	2032049	1720	36868	72984	191	4314	9126	130	2695	10688
90%	6210	461893	1807389	189	13796	53855	21	1557	6623	7	878	6877
95%	2415	52423	1562854	46	1103	36466	5	123	4407	1	83	3925
Over 5s												
70%	826378	1518616	2372654	62392	94809	130543	7129	11399	16653	5419	12657	24533
75%	387597	1209014	2162504	27032	68865	107743	2930	8039	13501	1603	7323	18483
80%	14122	861391	1938250	899	43757	85857	94	4936	10549	44	3319	13179
85%	2176	308699	1696232	124	13249	65146	13	1411	7832	3	848	8697
90%	954	13398	1431361	45	476	45968	5	50	5395	1	20	5120
95%	532	2948	1135485	18	79	28812	2	8	3292	0	2	2503

Table 4. Total infections, hospitalisations, deaths, and peak hospital occupancy over a one year period for differing levels of vaccine coverage across the eligible population (5+ or 12+), different assumptions about vaccine effectiveness (high, central, and low), and with baseline PH measures and full TTIQ.

https://cpb-ap-se2.wpmucdn.com/blogs.auckland.ac.nz/dist/d/75/files/2017/01/modelling-to-support-a-future-covid-19-strategy.pdf


+VE LAB RESULT OF A CASE
REFERRAL to MOoH
Contact identified to NITC as needing extra support
2. STAND-UP PHASE
24 – 48 Hours
3. DELIVERY PHASE
4.STAND-DOWN
Medical Officer of Health
Public Health Unit
NITC
District Health Board
Other Service Providers
1.READINESS: COLLABORATIVE PLANNING/PREPAREDNESS
FIRST CONTACT
-initiate contact & relationship
- conduct risk & needs assessment with individual/whanau /household contacts
-establish if case/contact separation is required
NOTIFY DHB COORDINATOR
DHB stands up response team
MOoH DETERMINES 'BEST-FIT' LOCATION
(using powers if indicated)
NOTE: Different location for case & contacts may be needed
ENSURE TESTING REQUIREMENTS MET & MONITOR PUBLIC HEALTH RISK MANAGEMENT
FORMALLY RELEASE case/contact from isolation/ quarantine requirement. Complete reporting.
Tx to Hospital indicated?
YES NO
Border MIQF
Document:
-Section 70 Order
-requirements for safe transport
-handover information
OR
Community Location
Document:
-compliance/security expectations
-testing schedule
-health needs assessment
-wrap-around services likely to be required
ESTABLISH CASES & CONTACTS IN PLACE FOR ISOLATION/QUARANTINE
DHB Coordinator
-identifies availability of local services & facilities
- consults MBIE re border MIQF availability
- consults MOH IMT re transport feasibility
Co-ord. liaises with MOH IMT re. transfer
Usual place of residence
OR
STAND-UP ALTERNATIVE ACCOMMODATION
MANAGE TRANSFER
ESTABLISH SECURITY IF REQUIRED
MANAGE TRANSFER
Tx to or from hospital may be required at any stage
Hospital
CONDUCT INTERIM NEEDS ASSESSMENT
in consultation with individual /whanau to identify urgent support needs
INITIATE ANY URGENT SUPPORT
CONDUCT WRAP-AROUND NEEDS ASSESSMENT & DEVELOP MANAGEMENT PLAN
in consultation with
individual /whanau/community agencies
PROVIDE/SUB-CONTRACT SERVICES throughout the period of managed isolation/quarantine including:
daily health, wellbeing and welfare checks
access to key welfare needs
any transport needs (ie transportation to or from a Local MIQF or hospital)
appropriate clinical care
ensuring an appropriate IPC management plan is developed and delivered
provision of supervision/monitoring to manage the assessed risk of inward or outward isolation/quarantine bubble breaches.
meals and laundry if in a Local MIQF
IPC management
STAND DOWN SERVICES Complete reporting Invoice MOH for services provided
National MOH IMT manages transfer
Border MIQF
PROVIDE WRAP-AROUND SERVICES
throughout the period of managed isolation as per DHB contract/agreement
STAND DOWN SERVICES Complete reporting. Invoice DHB for services provided

Covid in the community (20/09/21)

Number of active cases

	Change in last 24 hours	Total at present	Total since first NZ case
Confirmed	-26	394	3704
Probable	0	0	356
Total	-26	394	4060

Location of active cases

	Change in last 24 hours	Total at present
In managed facilities	-20	225
In hospital	-4	10
At home or in self-isolation	2	36
Not in isolation	0	0
Other	-4	123

https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-data-and-statistics/covid-19-current-cases

Community Response Framework		
Yellow	One or more COVID-19 positive patients in your facility; Cases in your community are being managed; Isolation capacity and ICU capacity manageable; Some staff absence and some staff redeployment to support response and manage key gaps	"Establish systems for care of COVID-19 patients in the community."
Orange		
Red	Multiple COVID-19 positive patients in your facility; community transmission uncontrolled; isolation and ICU at capacity; all available staff redeployed to critical care	""Management of COVID-19 positive patients in community to be done by telehealth."

COVID-19 Community Response Framework (updated Sept 9th 2021) https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-information-health-professionals/covid-19-primary-care

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Primary Care Quick Reference Guide

"The responsibility for the clinical care of people undergoing investigation for COVID-19 and those with confirmed COVID-19 who are not in a Managed Isolation Facility, **rests with their general practice team**. Closely monitor the severity of their illness, their comorbid conditions and clinical state. "

- See your local HealthPathway COVID-19 Care Pathways for more information about clinical care.
- Most people can be managed at their home or residential facility (or in managed isolation).

Red Flags for urgent clinical review or hospitalisation

- Respiratory distress
- Shortness of breath (including new onset of shortness of breath on exertion)
- Haemoptysis
- Altered mental state
- Clinical signs of shock, eg, low blood pressure, fainting
- Unable to mobilise without assistance by carers
- Unable to safely provide self-care
- No alternate carers available

"Any other reason that may require hospital admission as assessed by the treating healthcare professional."

Discuss patients that have red flags with the on-call medical team and arrange urgent transfer to hospital. Liaise with ambulance service and admitting team to ensure infection prevention measures are in place for a safe transit and admission to hospital.

Community Healthpathways

Suitable for mx in community -

- No features suggesting sepsis, e.g. low blood pressure, fainting, or altered mental state
- No respiratory distress, dyspnoea, haemoptysis, or supplementary oxygen requirement

Necessary support for community management

- Able to self-isolate and safely provide self-care
- Adequate social support and phone access
- Able to be monitored safely

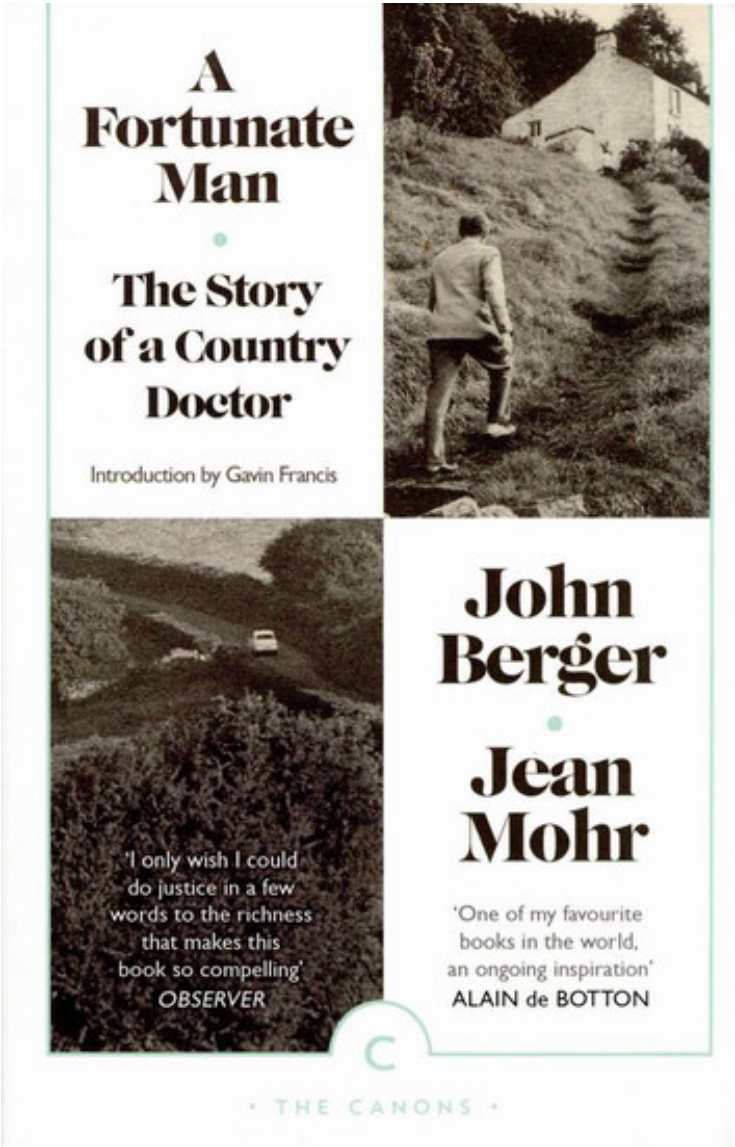
Symptom control

Symptom treatment

- Use paracetamol for analgesia. Avoid starting nonsteroidal anti-inflammatory drugs (NSAIDs) if possible, especially in patients with co-morbidities. Long-term NSAIDs can be continued unless there is a conventional reason to stop, e.g. acute kidney injury.
- Antibiotics or steroids are not needed unless there is another clear indication, e.g. bronchospasm, acute exacerbation of COPD.
- Do not use nebulisers as this will spread the virus further.
- Defer non-essential high-risk procedures (dental procedures, elective surgery, or aerosol-generating procedures).

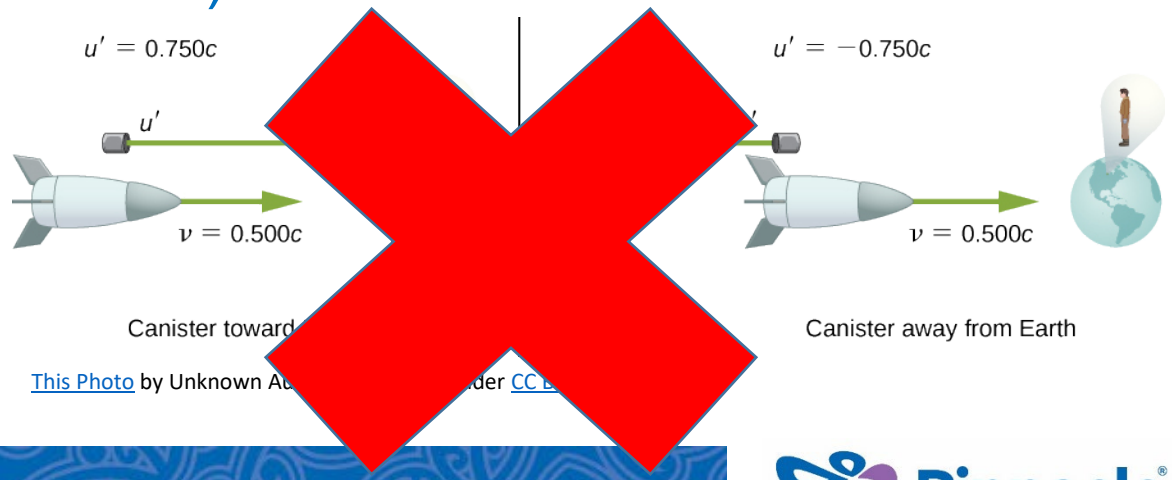
Why Primary care ?

- Accessible
- Continuity of care
- Comprehensive knowledge of the patient
- Trusted and known to the whanau
- Risk managment expertise
- Flexible to the whanau's needs
- Connected to key supports in the community
- Mild to moderate Covid19 is a simple infective disease



Management in the community

- Reduce physical contact with patient
- Provide telemonitoring equipment
- Provide regular telephone connection and assessment
- Discuss issues with respiratory / infectious / medical specialist ?
- Pre-hospital treatments ? (ICS ? tocilizumab?)



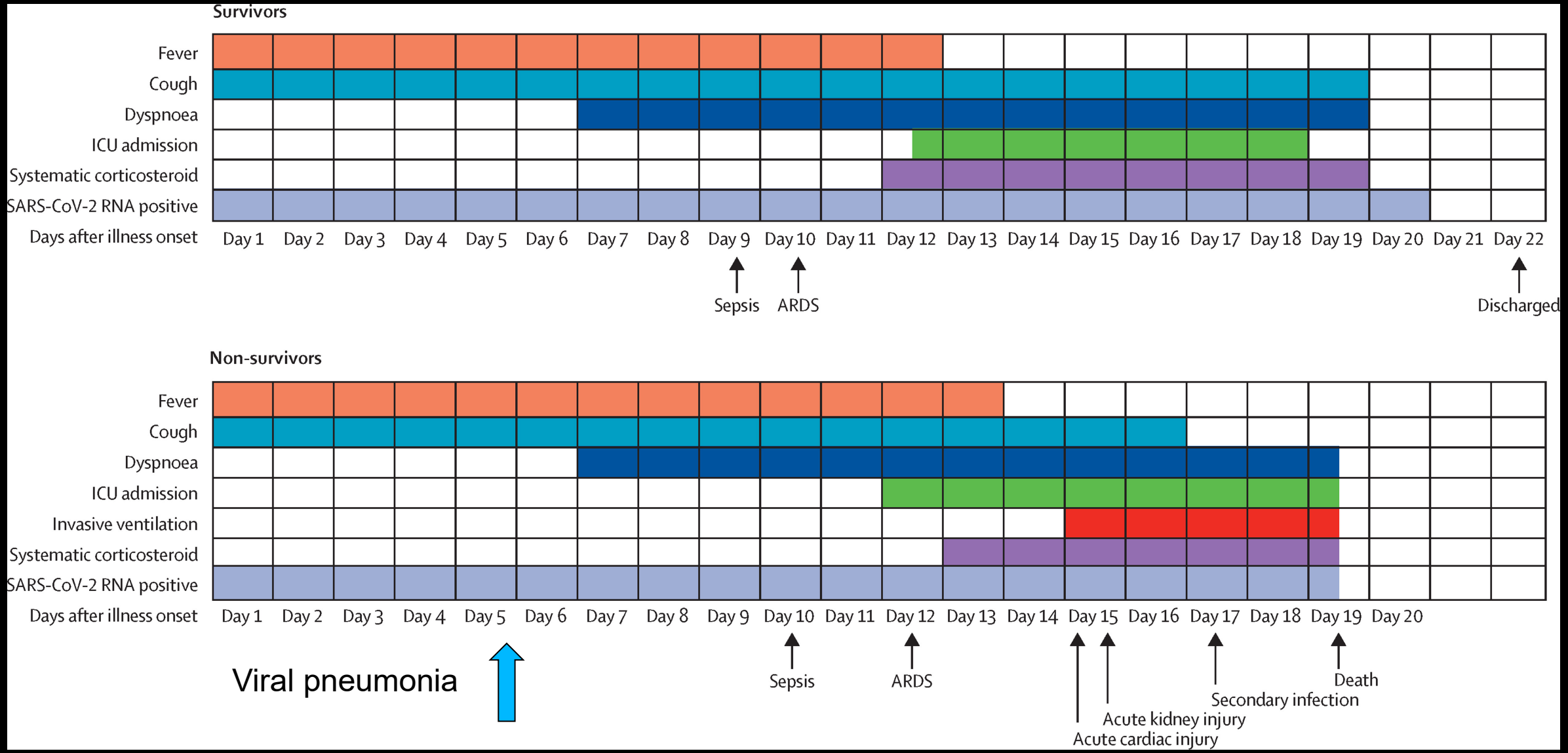
Ideal Primary Care Management

- Systematic approach to risk assessment
- Treatments supported by the best available evidence
- Easy to access
- Easy to use
- Embedded in the PMS
- Keeps people at home for as long as possible
- Flexible enough to manage palliative care if needed

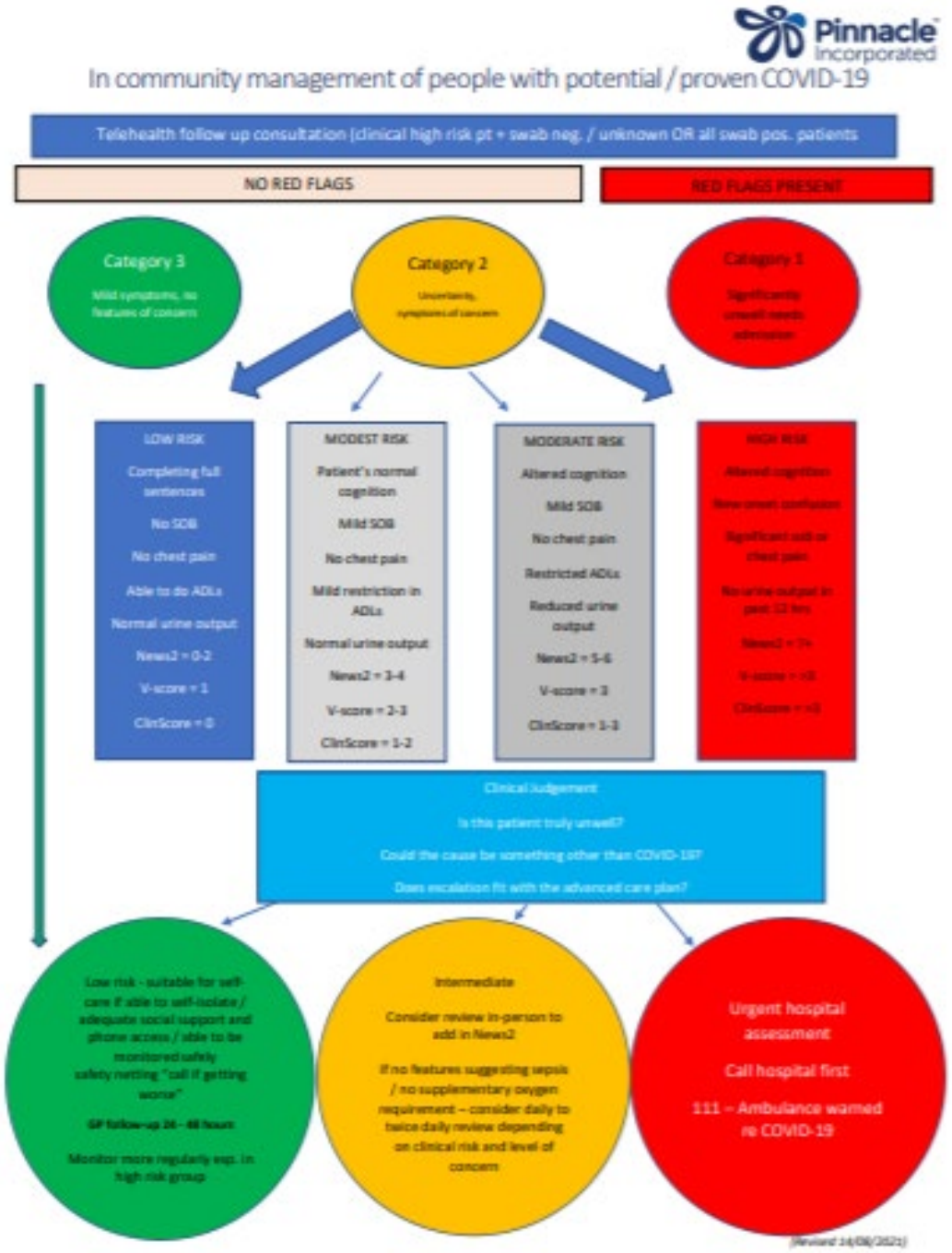
What do we want to acheive ?

- Identify the 80% of people who will get better and don't need hospital care.
- Catch the 20% people who will progress and get them into the right place for the best treatment at the best time.
- Identify those people who will not benefit from treatment and manage them where they are.
- Reduce the potential for people to end up in hospital, protect the 10% of people who will end up in ICU and the 1-2% of people who will die from COVID

Figure 1



The Lancet 2020 3951054-1062DOI: (10.1016/S0140-6736(20)30566-3)



Phone triage scoring systems

Red flags

- Respiratory distress / dyspnoea (included reported history of new dyspnoea on exertion)
- Haemoptysis
- Altered mental state
- Clinical signs of shock e.g., low blood pressure, fainting
- Unable to mobilise without assistance by carers
- Unable to safely provide self-care
- No alternate carers available
- Any other reason that may require hospital admission as assessed by a health professional

https://www.pinnaclepractices.co.nz/assets/Resource-files/210814-covid-19-home-assessment-and-management-grid-v2.pdf

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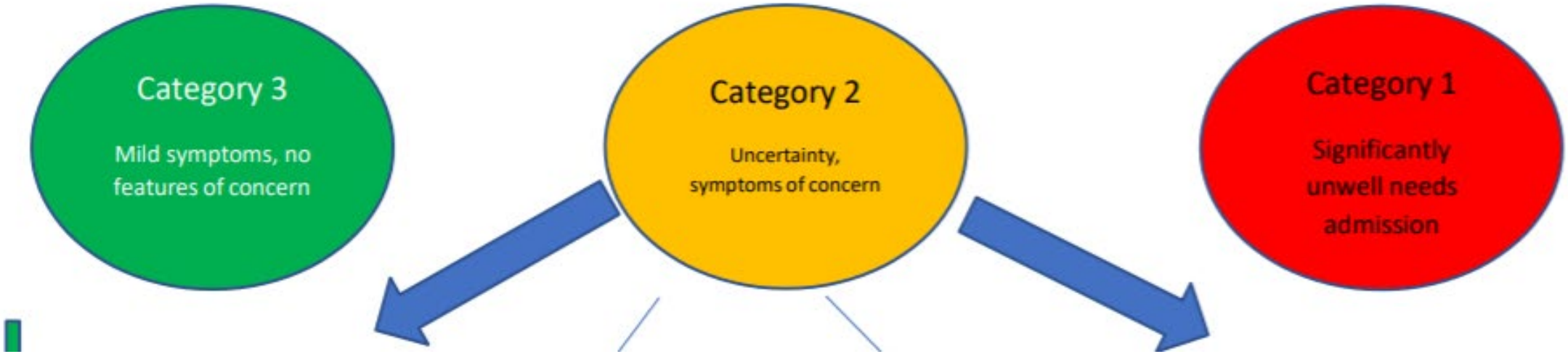
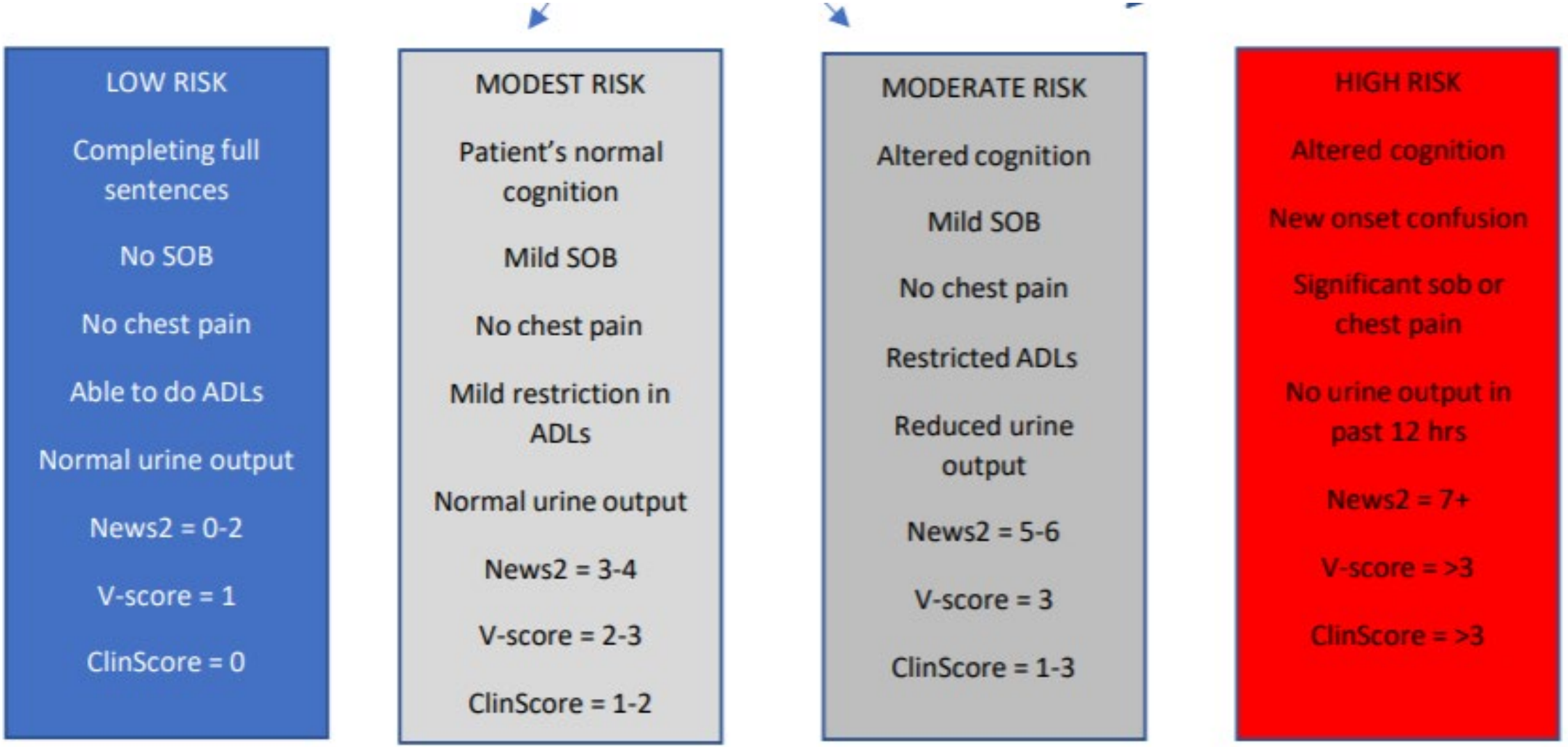
Telehealth follow up consultation (clinical high risk pt + swab neg. / unknown OR all swab pos. patients

NO RED FLAGS

RED FLAGS PRESENT




LOW RISK
Completing full sentences
No SOB
No chest pain
Able to do ADLs
Normal urine output
News2 = 0-2
V-score = 1
ClinScore = 0
MODEST RISK
Patient's normal cognition
Mild SOB
No chest pain
Mild restriction in ADLs
Normal urine output
News2 = 3-4
V-score = 2-3
ClinScore = 1-2
MODERATE RISK
Altered cognition
Mild SOB
No chest pain
Restricted ADLs
Reduced urine output
News2 = 5-6
V-score = 3
ClinScore = 1-3
HIGH RISK
Altered cognition
New onset confusion
Significant sob or chest pain
No urine output in past 12 hrs
News2 = 7+
V-score = >3
ClinScore = >3

Vulnerability score

Based on independent predictors of poor prognosis/ high risk of mortality/morbidity.

Conditions/Factors	No	Yes
Age >65	0 point	1 point
Male Sex	0 point	1 point
Smoker	0 point	1 point
Cognitive function	Normal 0 point	Baseline impaired/ limited 1 point
High Body Mass index	0 point	1 point
Cardiovascular disease (Heart failure/ COPD/ Poorly controlled asthma/Diabetes)	0 point	1 point
Living conditions: *Aged residential care facility or/ *Unable to mobilise without assistance with carers or *Unable to safely provide self-care and no alternate carers available	0 point	1 point

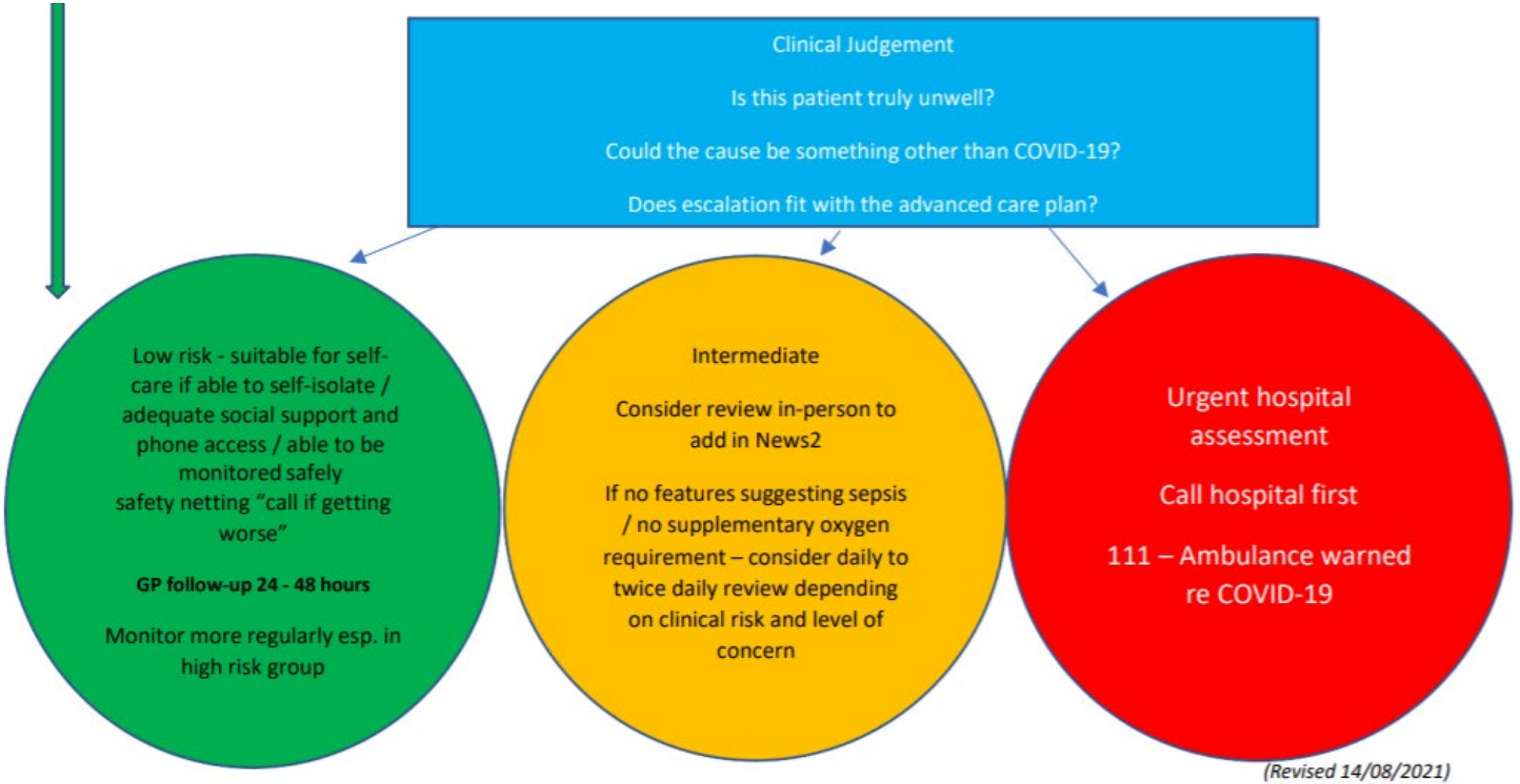
Clinical assessment score

	0 point	1 point	2 points	3 points
HR	50 -110	>110	>120	
RR	14-21	>22	>26	
SPO2 (No Hx COPD)	>=96	<96	<94	<92
SPO2 (Hx COPD)		<90		<86
Temp				>40

NEWS2

Chart 1: The NEWS scoring system

Physiological parameter	Score 3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO_2 Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO_2 Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	



(Revised 14/08/2021)

More resources :

Hamilton Family Medicine Ontario Canada

https://hfam.ca/clinical-pathways-and-evidence/covid/assessment-diagnosis-and-management-of-covid/

Assessment, Monitoring and Management of COVID

COVID: Pathways, Evidence and Practical Supports

Search

COVID Diagnostic Testing

Assessment, Monitoring and Management of COVID

For **COVID@Home Monitoring**, please see Ontario Health: Quick links overview of resources for care of COVID in the community

1. Remote Assessment of COVID (Phone or Video)

2. History

3. Examination

4. Assessing COVID severity

5. When to Refer to ED and Who to Call for Acute Care Advice

6. Monitoring and Follow-up

- Initial Information
- Risk Stratify Patient
- Monitoring Template
- Printable/Downloadable Summary Sheet and EMR Tools
- Access to Pulse Oximeters

7. Management

- Patient Advice
- Medication (Treatment/Comfort/Existing)
- Investigations
- Oxygen for those whose goals of care are not congruent with admission

6. Monitoring and Follow-up

Initial Information

Risk Stratify Patient

High Risk	Average Risk	Low Risk
Patients with any of the safety net flags		Otherwise healthy adults; asymptomatic adults
Patients with symptom deterioration	Pregnant women	No comorbidities
Any age with medical comorbidities		No safety net flags
Age > 60	40-60 years old with no medical comorbidities	Age 1-39 years old with no medical comorbidities
MONITOR Daily for 14 days	MONITOR Every 2 days x 7 days; then recommend self-monitor for additional 7 days depending on progress	MONITOR Consider self-monitoring only; check-ins determined by individual patient. (Consider at 7 days)

NOTE *patients in the low risk category with increasing symptoms move to the high risk/daily monitoring (including pulse oximeter) category. Asymptomatic patients should have their risk category reassessed if they develop symptoms.

NOTE in patients with significant fatigue in the low risk category, consider using pulse oximetry to determine this is not due to hypoxia.

Medication (Treatment/Comfort/Existing)

- Hydroxychloroquine should NOT be used. Recent studies indicate there is no evidence for benefit from azithromycin, HCQ or the combination in outpatient management of COVID in time to recovery or risk of hospitalization.
- Recent studies indicate there is no evidence for benefit from doxycycline.
- Ivermectin, there is no convincing evidence for benefit on mortality, need for invasive mechanical ventilation, hospital admission, duration of hospitalization and time to viral clearance.
- Oral steroids should not be used in ambulant community dwelling primary care patients. Meta-analysis shows the evidence for benefit is only in patients requiring oxygen. There is evidence that **if used in milder patients (not requiring oxygen) mortality is increased.** Think: COVID is not like a COPD exacerbation. ()

  See note about screening for Stongyloides epidemiological risk and treatment prior to initiation of steroid treatment
- Inhaled corticosteroids (ICS): Oral steroids result in worse outcomes for mild-moderate COVID compared with more serious illness as above. There was initial uncertainty about the potential benefits / harms of ICS as some studies suggested better outcomes while some suggested worse. A new large randomised trial in primary care patients was published in August 2021, and in the patient group who are at risk of more serious illness ICS shortened the time to first self-reported recovery by an estimated median of 2·9 days (11·8 days in the ICS group versus 14·7 days in the usual care group). For the outcome of hospital admission or death the trial did not achieve the superiority threshold for ICS vs usual care.

  On the basis of these data, it seems reasonable to consider inhaled corticosteroid use in early COVID-19 in patients similar to the trial population group (people with ongoing symptoms from COVID-19 aged ≥65 years or ≥50 years with specific comorbidities) who are interested in using them (only 80% of participants in the ICS group in the trial used them for at least a week). Various subgroup analyses in PRINCIPLE do not provide any pointers to which particular patient or illness characteristics in the included population might be more likely to predict benefit. These trial data do not support use in younger populations who are at lower risk of complications (<65 years with no comorbidities or anyone <50 years). Because vaccination was uncommon in trial participants, an important question is whether and what effect would be seen in the fully vaccinated population who have a different illness severity and trajectory. You can read here the more detailed commentary on this trial by Professor Dee Mangin and Assoc Professor Michelle Howard Department of Family Medicine McMaster University
- Antibiotics should only be used if concomitant bacterial infection suspected, and patient can be safely managed in the community. Usual antibiotic guidelines should be followed for uncomplicated or complicated bacterial pneumonia as usual. For more information see How to Care for Ambulatory Patients with Respiratory Tract Infections: A Toolkit for Using Antibiotics Wisely in the Era of COVID-19 and Virtual Care (Choosing Wisely Canada and CFPC)

9. Long COVID: Management of Post-Acute COVID Symptoms

A significant proportion (around 10%) of patients report ongoing symptoms beyond the initial acute COVID-19 infection period (so-called "long COVID"). Reports of usual duration of specific symptoms are variable at present. Other estimates in a recent not yet peer reviewed cohort study from the UK appear to show significant rates of persistent abnormalities in investigations relating to different organs in low risk individuals, however it is not clear to what extent these measures represent pre-existing measurement abnormalities (as there were no premorbid measures).

Background Resource

Understanding the Post COVID-19 Condition (Long COVID) and the Expected Burden for Ontario (Science Table COVID-19 Advisory for Ontario)

Symptoms

Tests, investigations and when to refer

Management

Prevention is better than cure ..

Pinnacle
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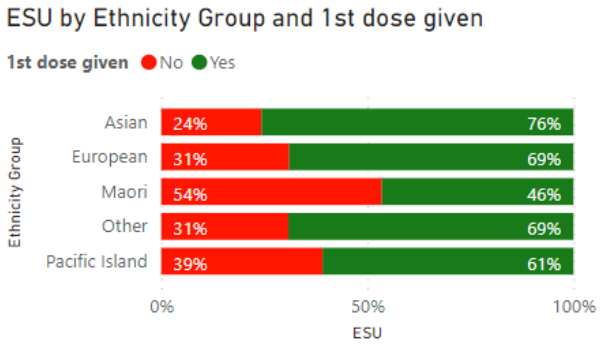
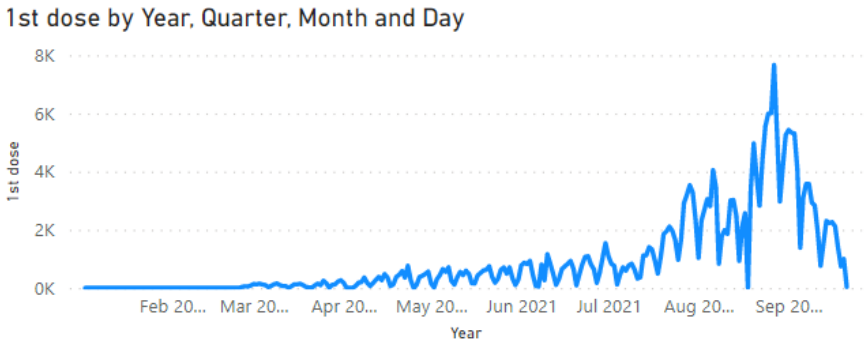
243,534
1st dose

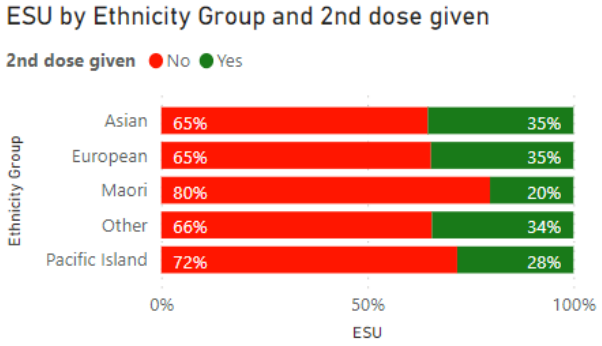
65 %
1st dose coverage

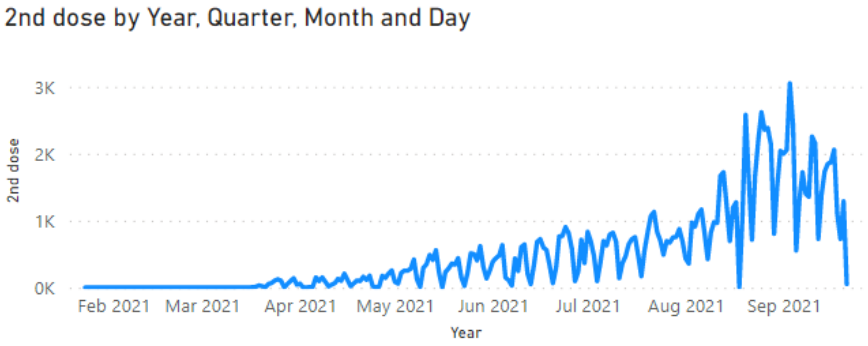




119,260
2nd dose

32 %
2nd dose coverage





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