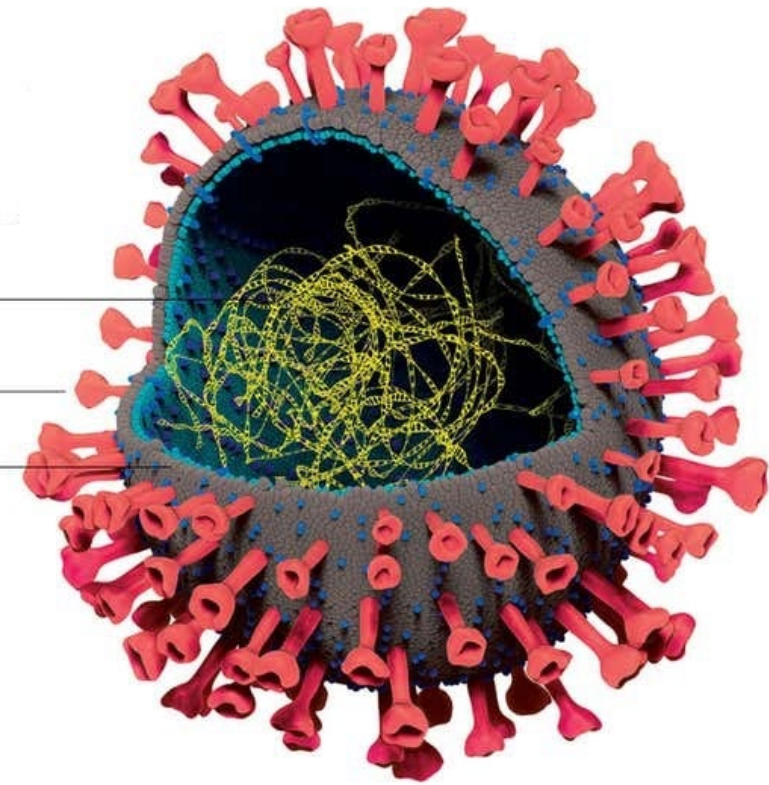


RNA enclosed
in protein

Spike protein

Lipid membranes



Vaccinate
Vaccinate
Vaccinate

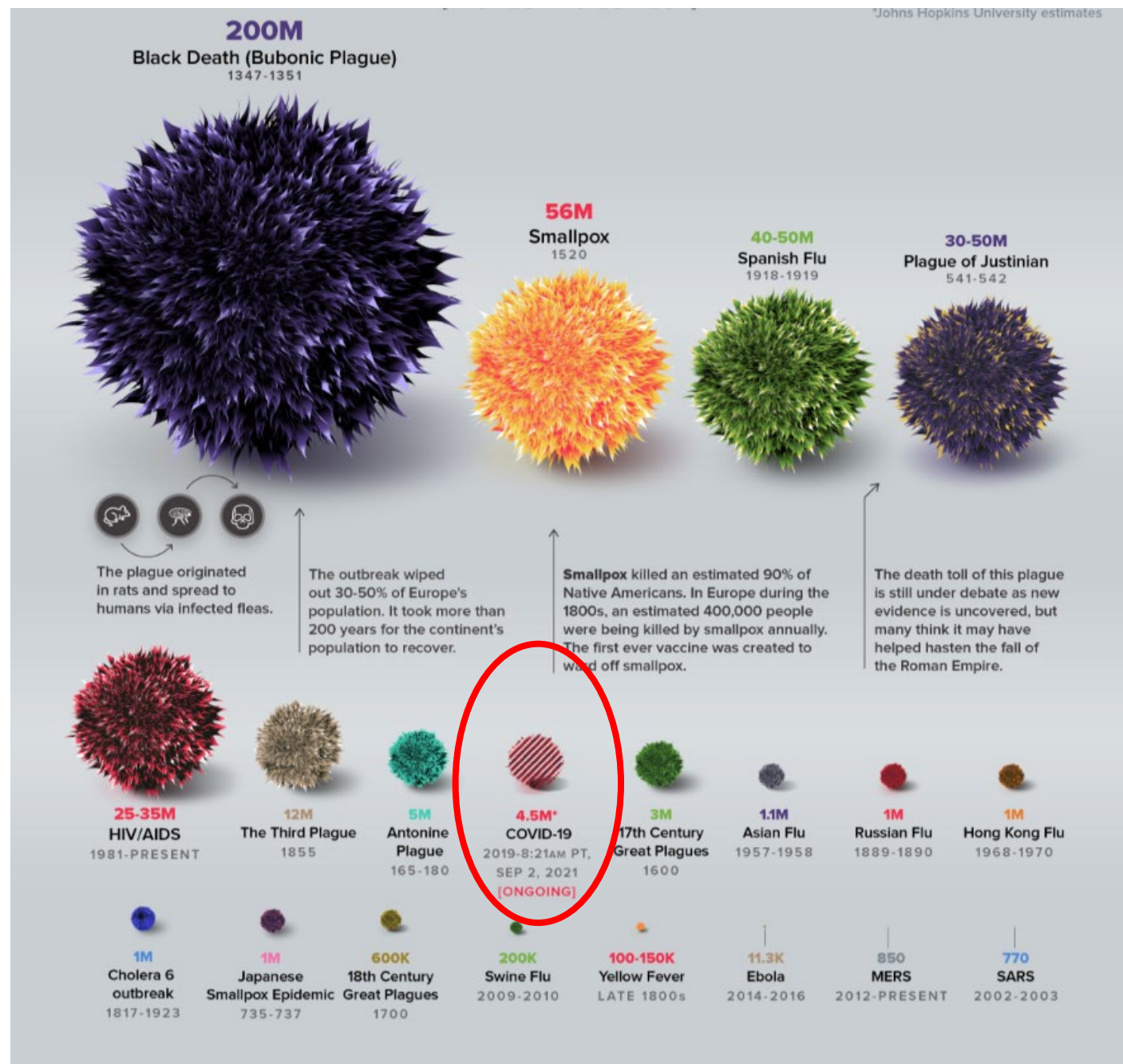
Collective immunity protects our community



... and ourselves

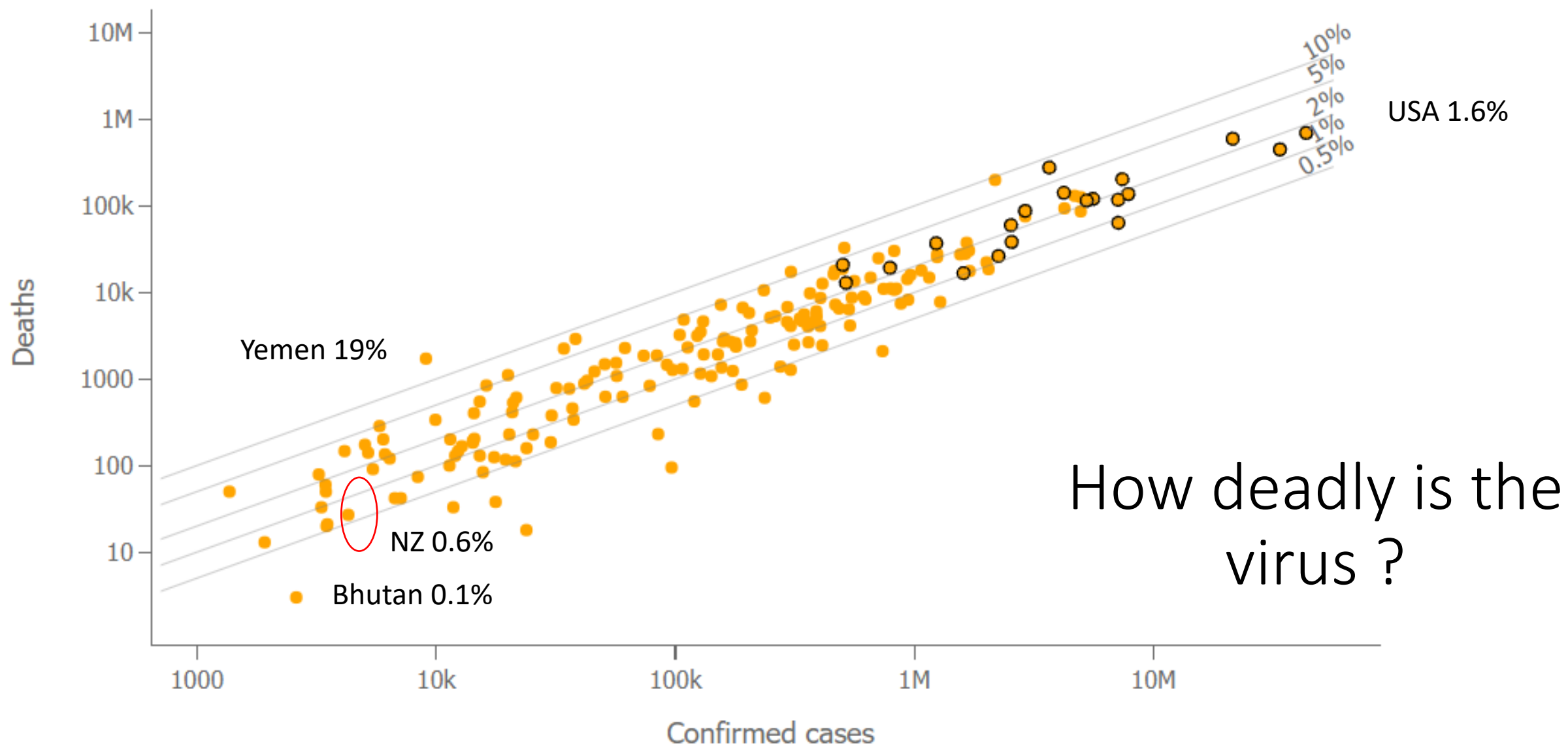
Why vaccinate ?

1. Sars-Cov2 is a serious illness

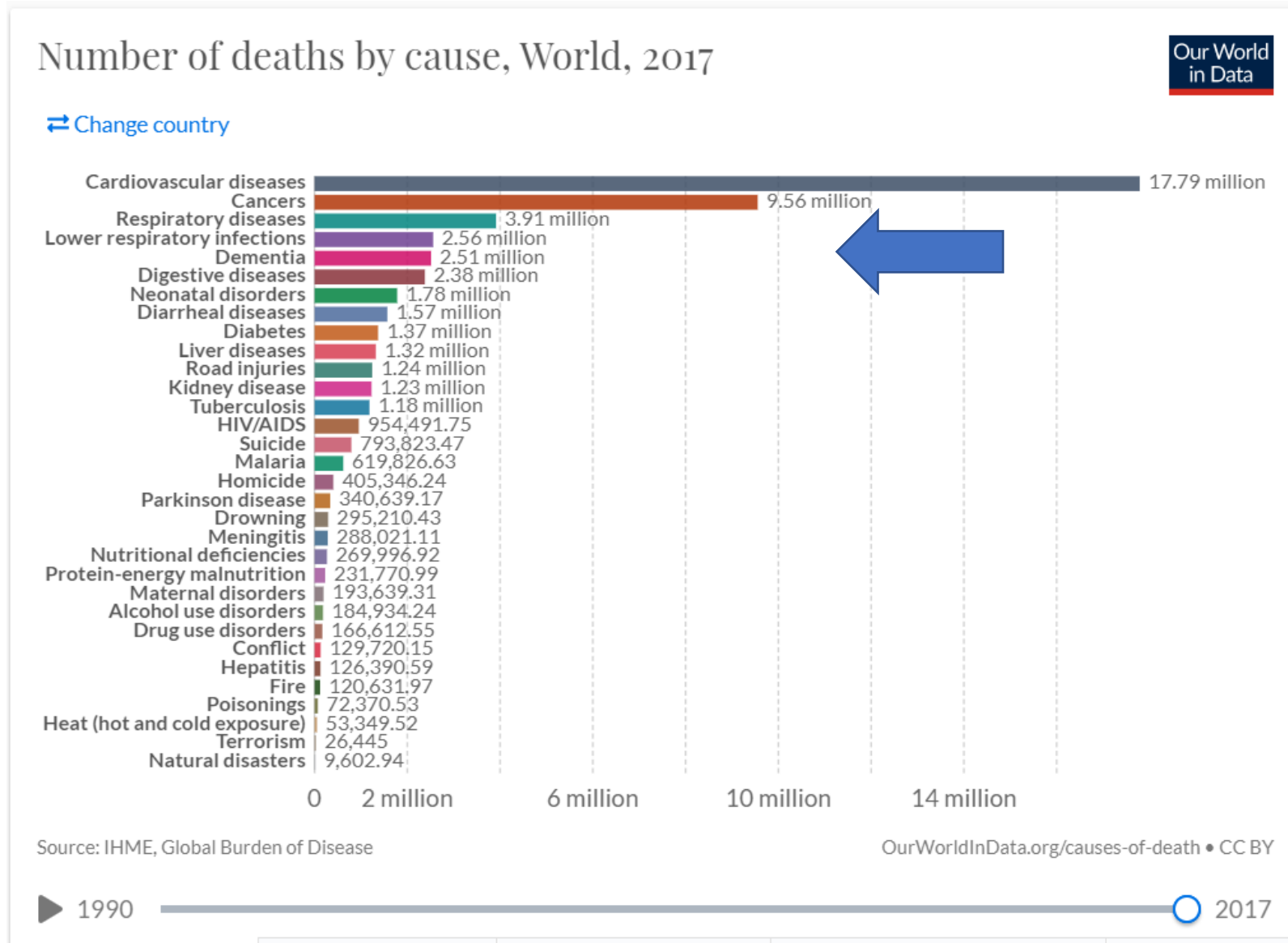


Observed case-fatality ratio

Deaths per 100,000 population



How does covid19 compare to other causes of death ?



Covid19 – globally
4.7 million deaths to
date

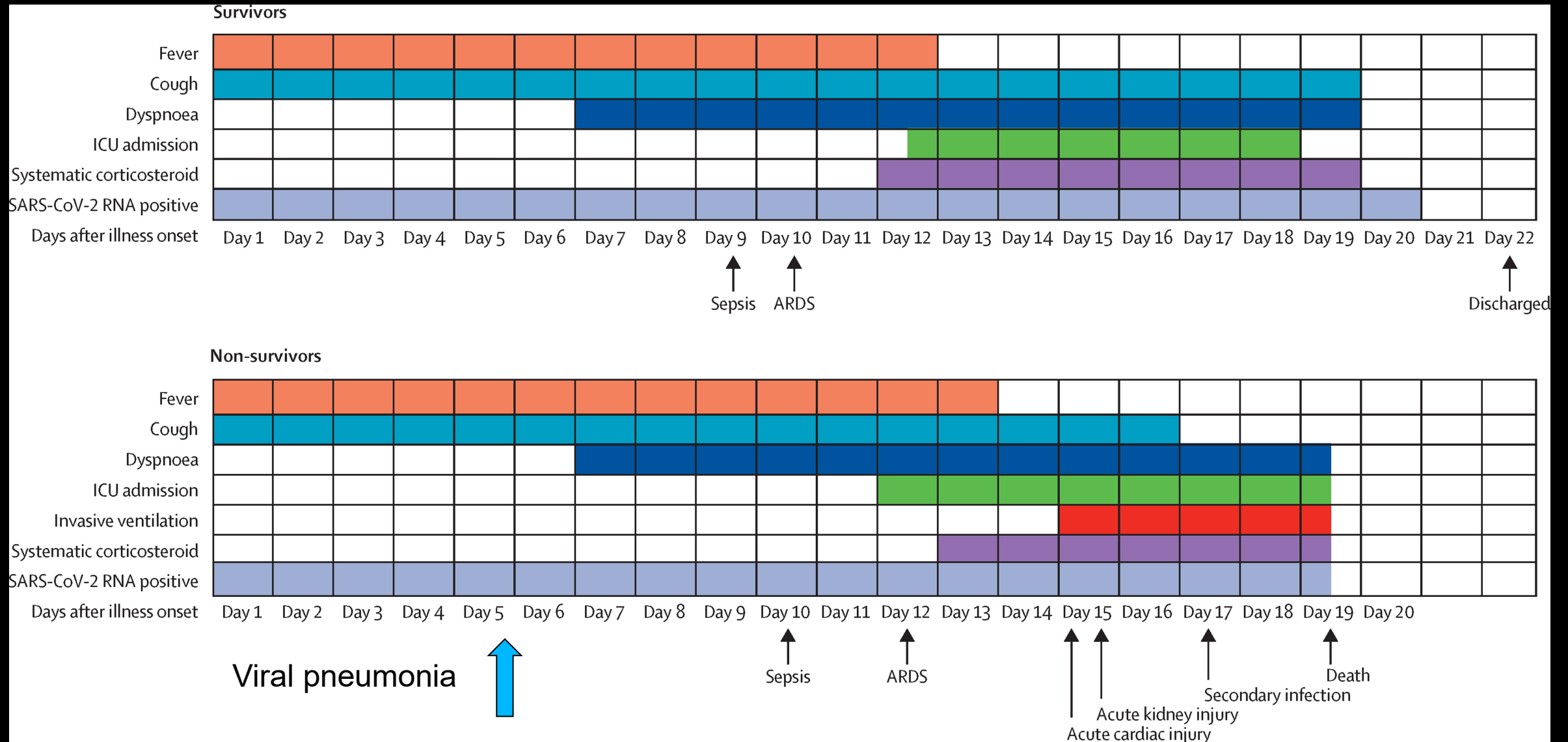
3.7 million in past 12
months

207 million people
have recovered

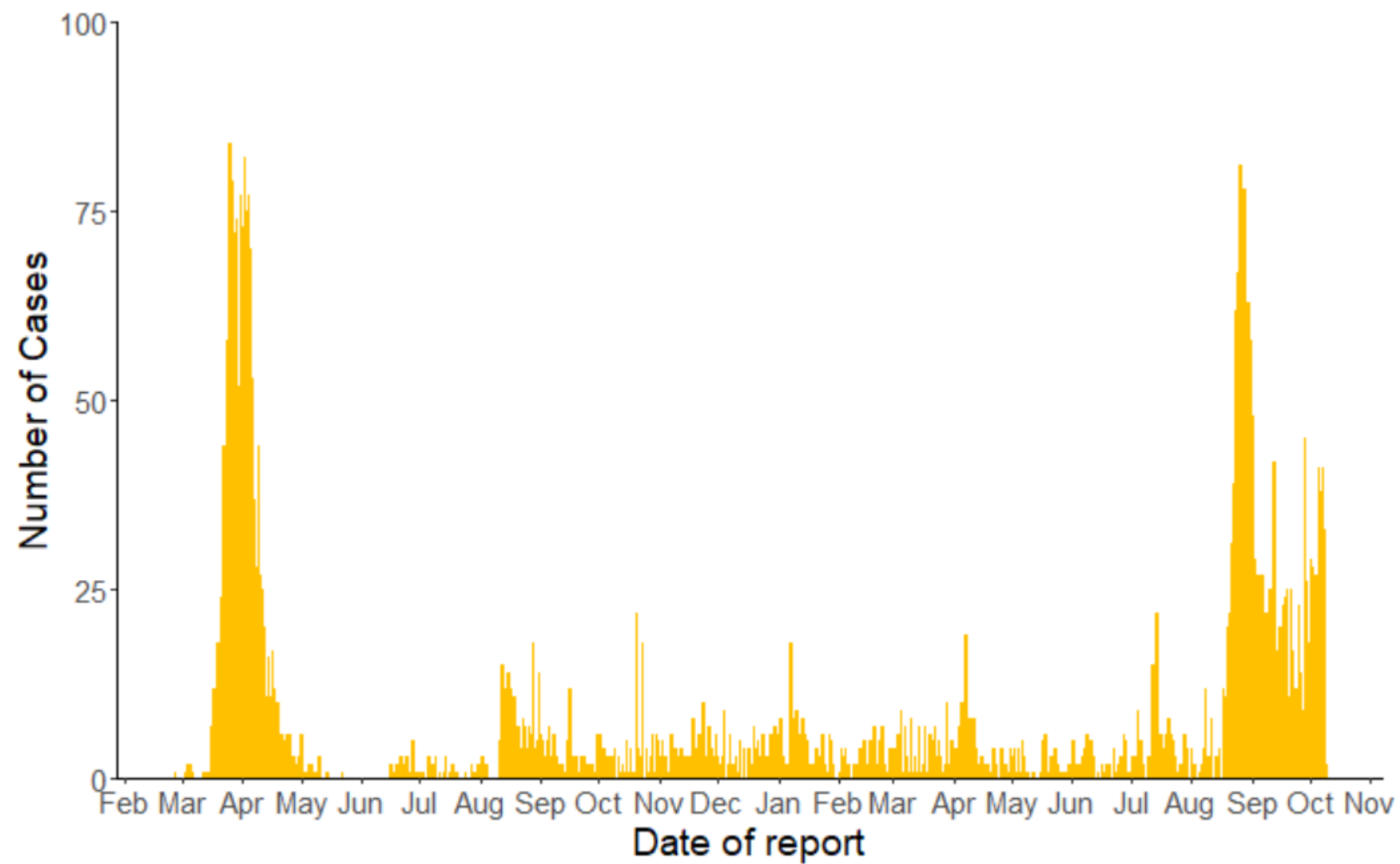
? 20 million “long
covid”

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

Figure 1



Daily confirmed and probable cases

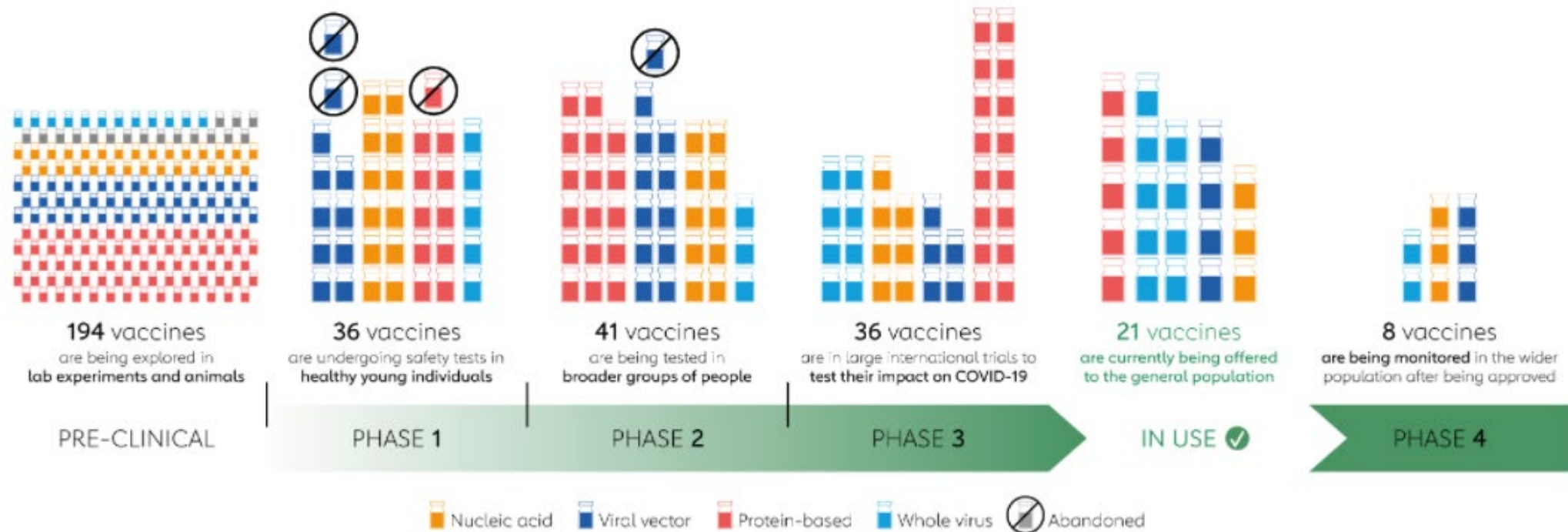


New COVID-19 cases reported each day

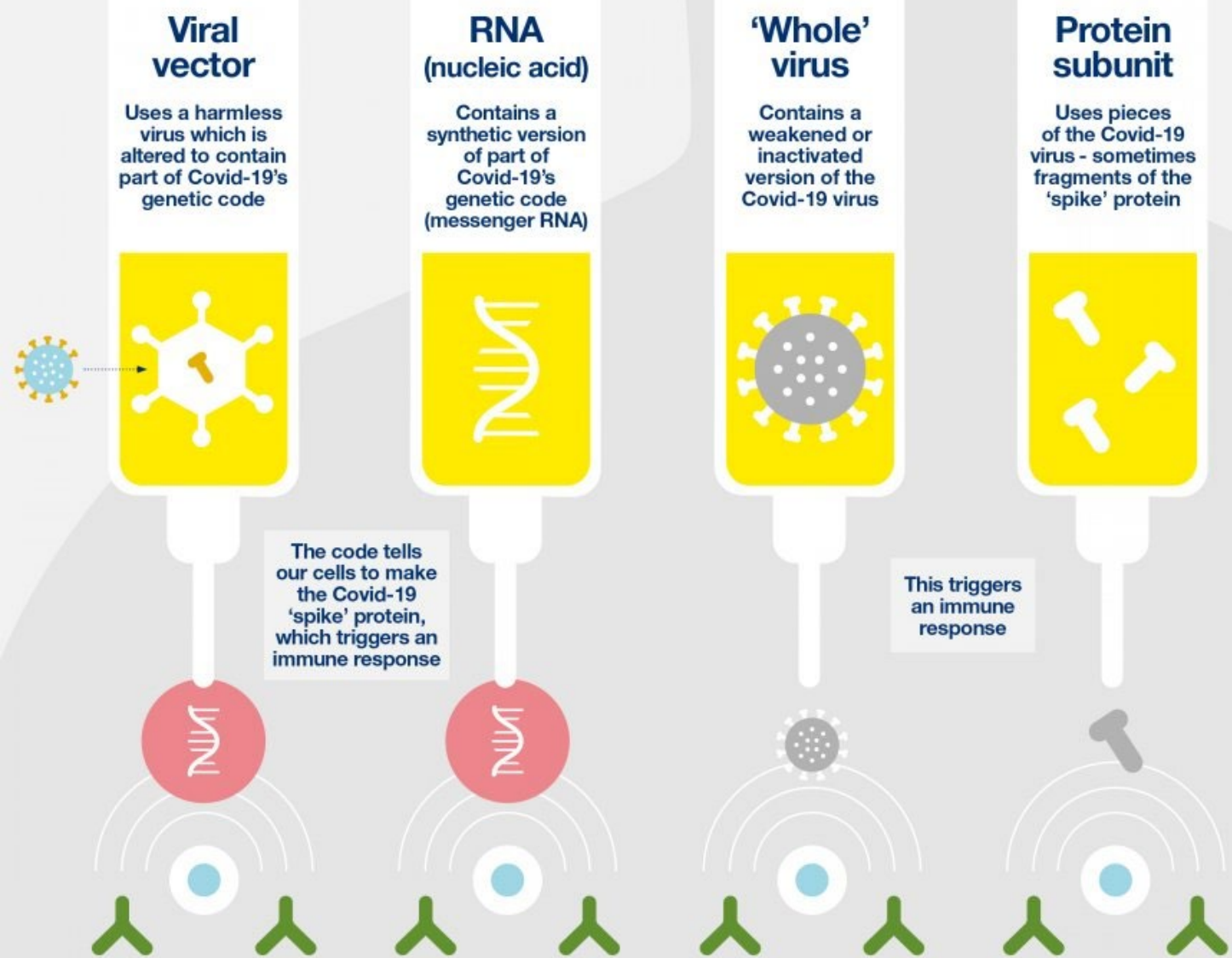
Why vaccinate ?

2. Sars-Cov2 vaccines work

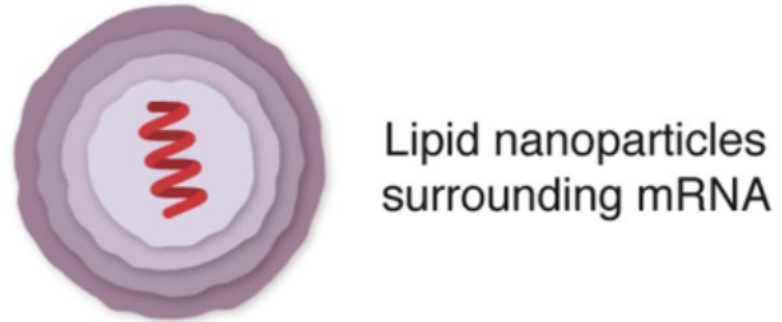
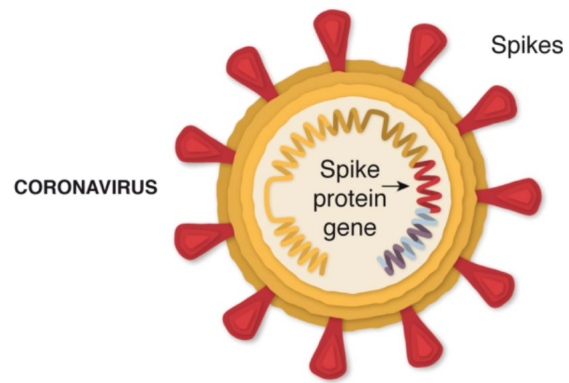
COVID-19 VACCINES IN DEVELOPMENT



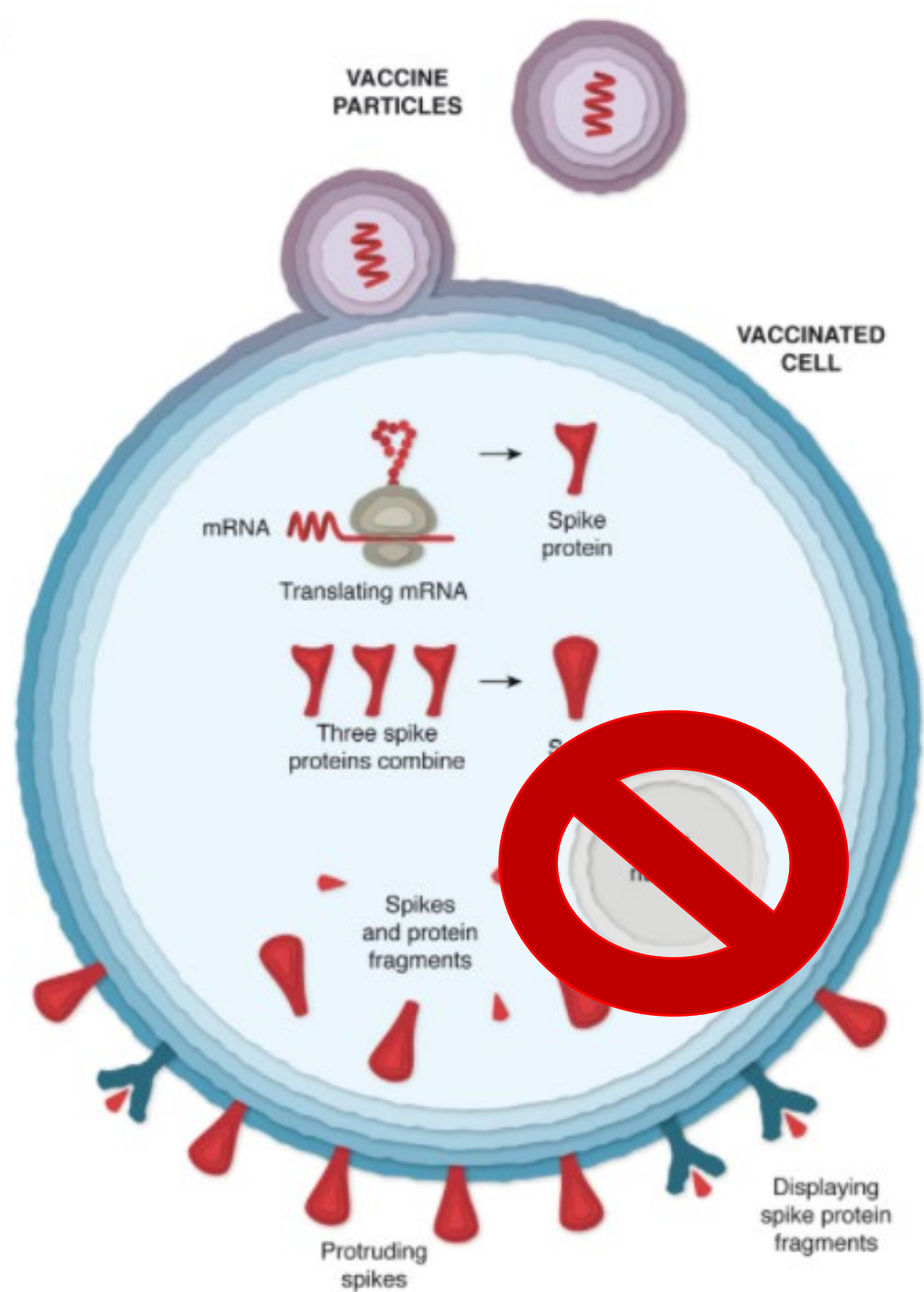
How do different Covid-19 vaccines work?

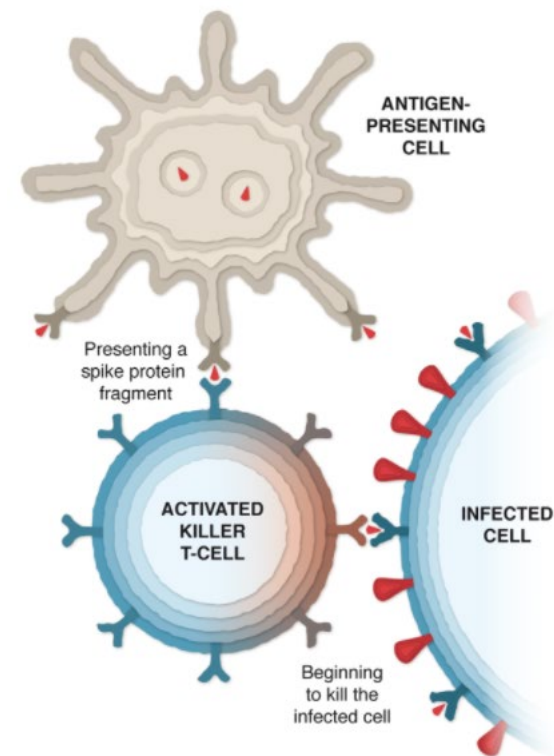
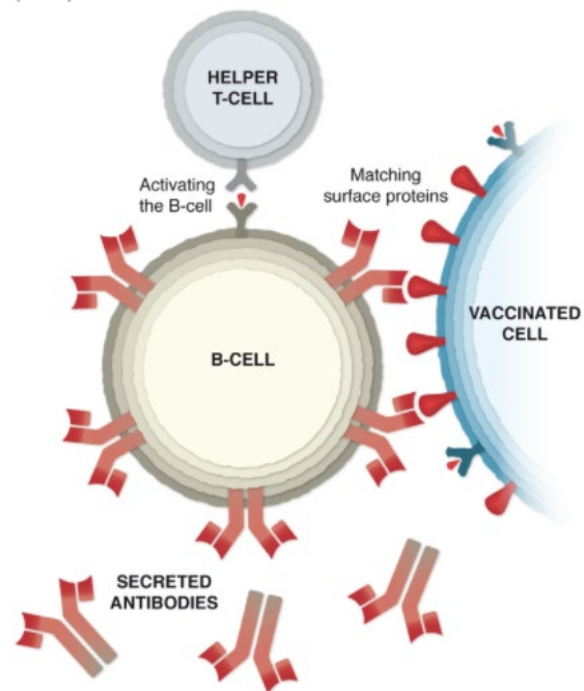
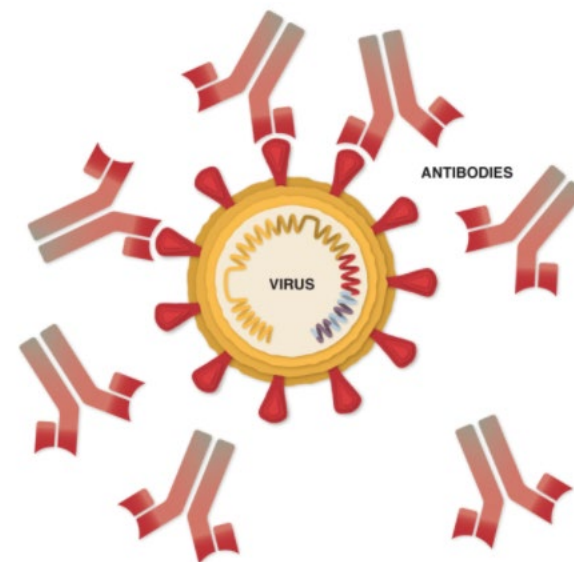
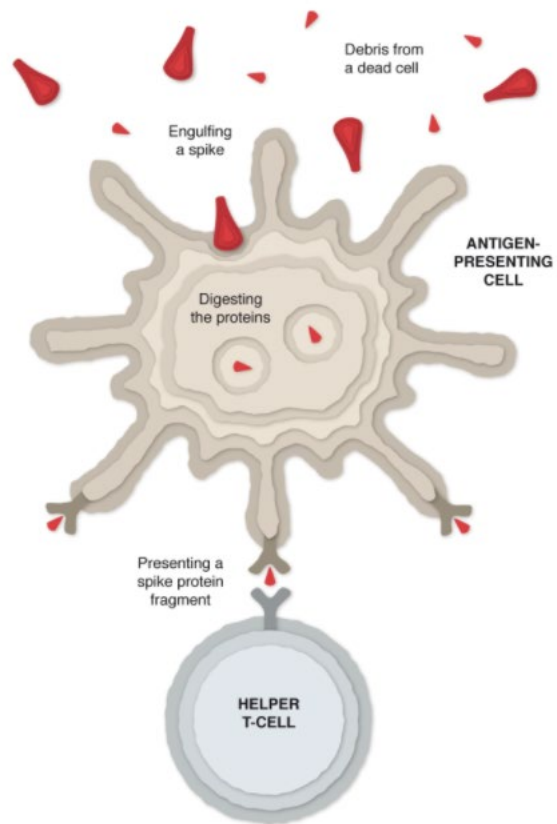


Vaccine type	Companywith NZ contracts
Viral Vector	Jansen (Johnson and Johnson) Astra Zeneca
mRNA	Pfizer
Whole virus	-
Protein subunit	Novovax



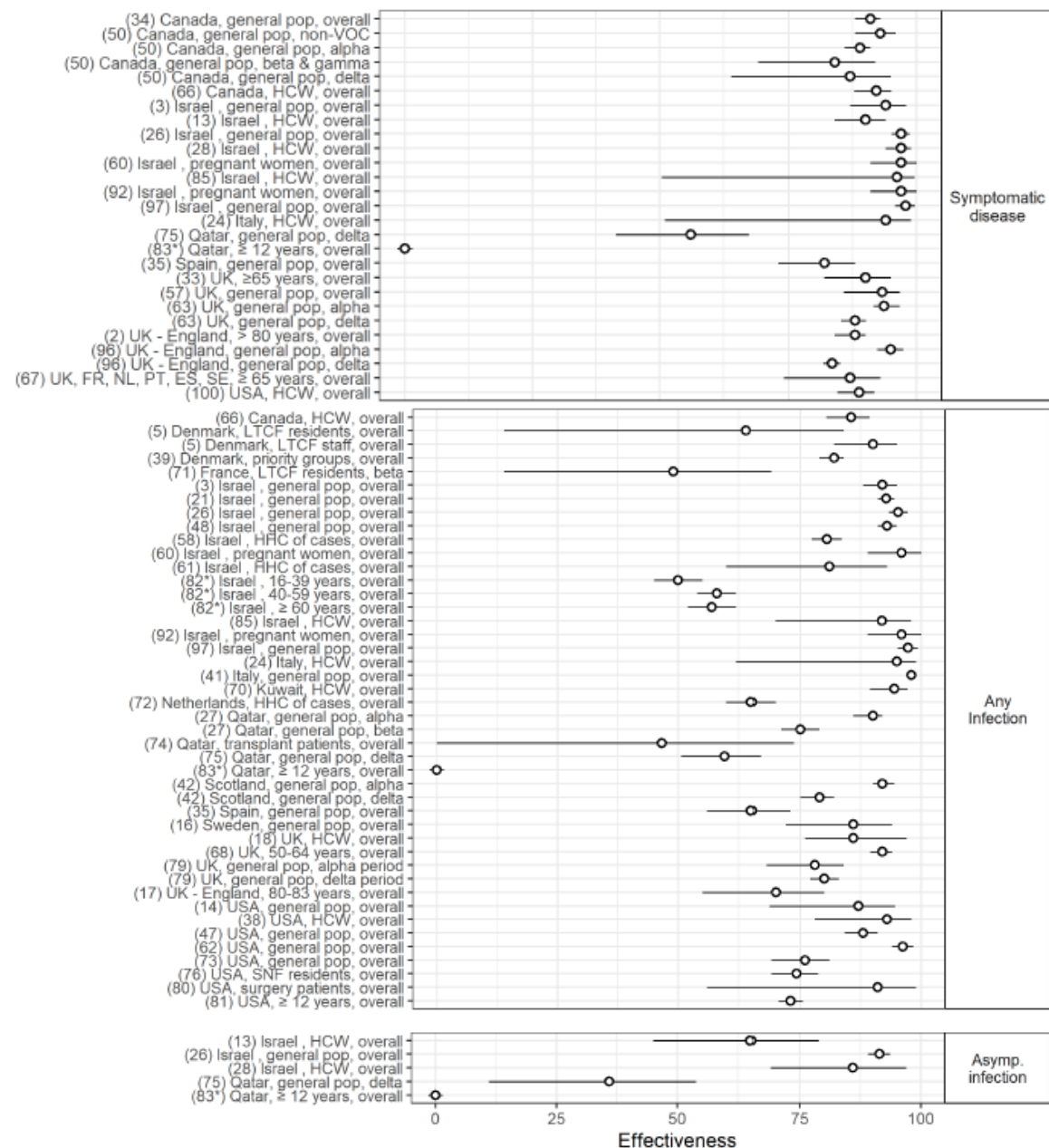
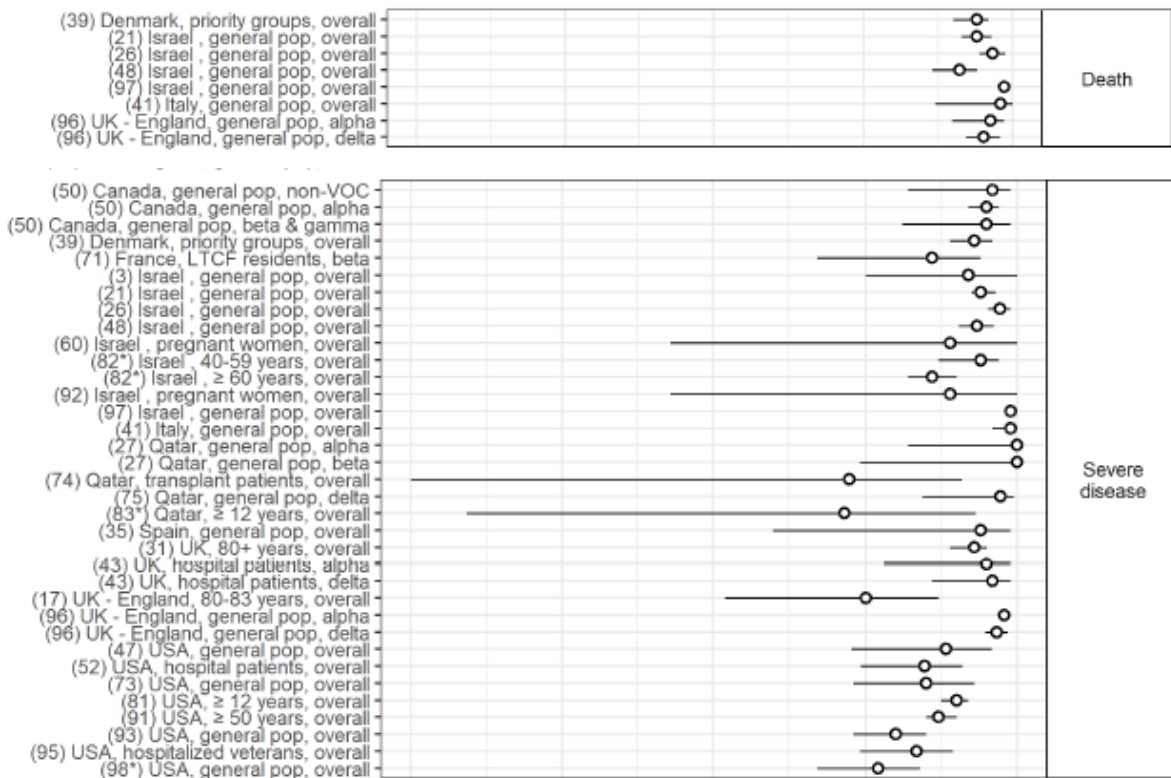
Made in a laboratory..





BNT162b2 (Pfizer) Vaccine Effectiveness, 2 Doses

(ref no) country, population, variant



Pfizer and Delta

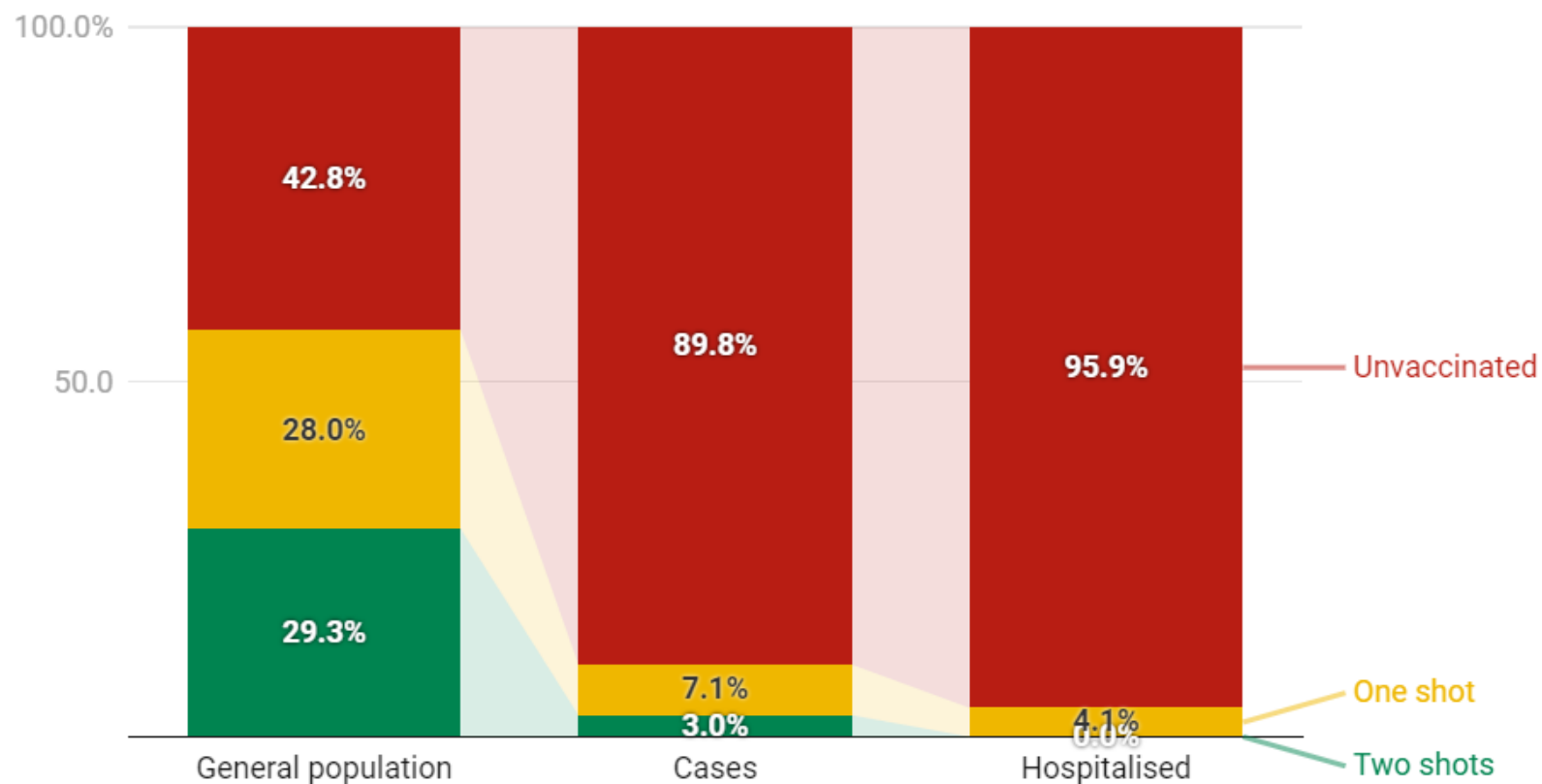
95-97% effective in stopping hospitalisation

80% effective in stopping infection

Vaccination helps YOU !

https://view-hub.org/sites/default/files/2021-09/COVID19%20VE%20Studies_Forest%20Plots_3.pdf

None of the Covid-19 cases in hospital had been fully vaccinated two weeks prior to testing positive



General population vaccination rate as of September 13.

Chart: Marc Daalder • Source: Ministry of Health • Created with [Datawrapper](#)

30% reduction in risk that you will transmit the virus to people in your house.

Household members of healthcare workers in the UK are twice as likely to get Covid.

144,525 healthcare workers and 194,362 household members

78.3% of healthcare workers received at least one dose of either Pfizer or Astra Zeneca (25.1% received a second dose) Dec 20 – March 21

Cases - 3,123 Household and 4,343 Healthcare workers

Household members of vaccinated healthcare workers had a lower risk of COVID-19 compared to household members of unvaccinated healthcare workers.

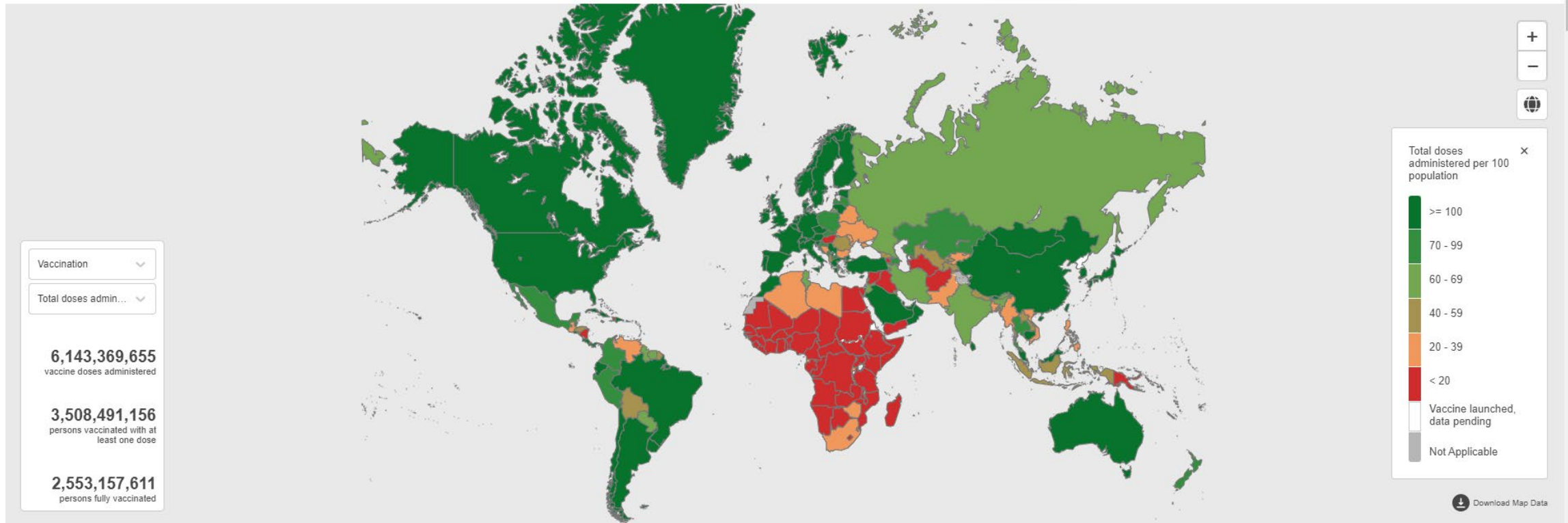
9.40 *versus* 5.93 per 100 person years = HR 0.70, 95% confidence interval [CI] 0.63 to 0.78

New England Journal of Medicine doi: [10.1056/NEJMc2106757](https://doi.org/10.1056/NEJMc2106757)

Why Vaccinate ?

3. The vaccines are safe.

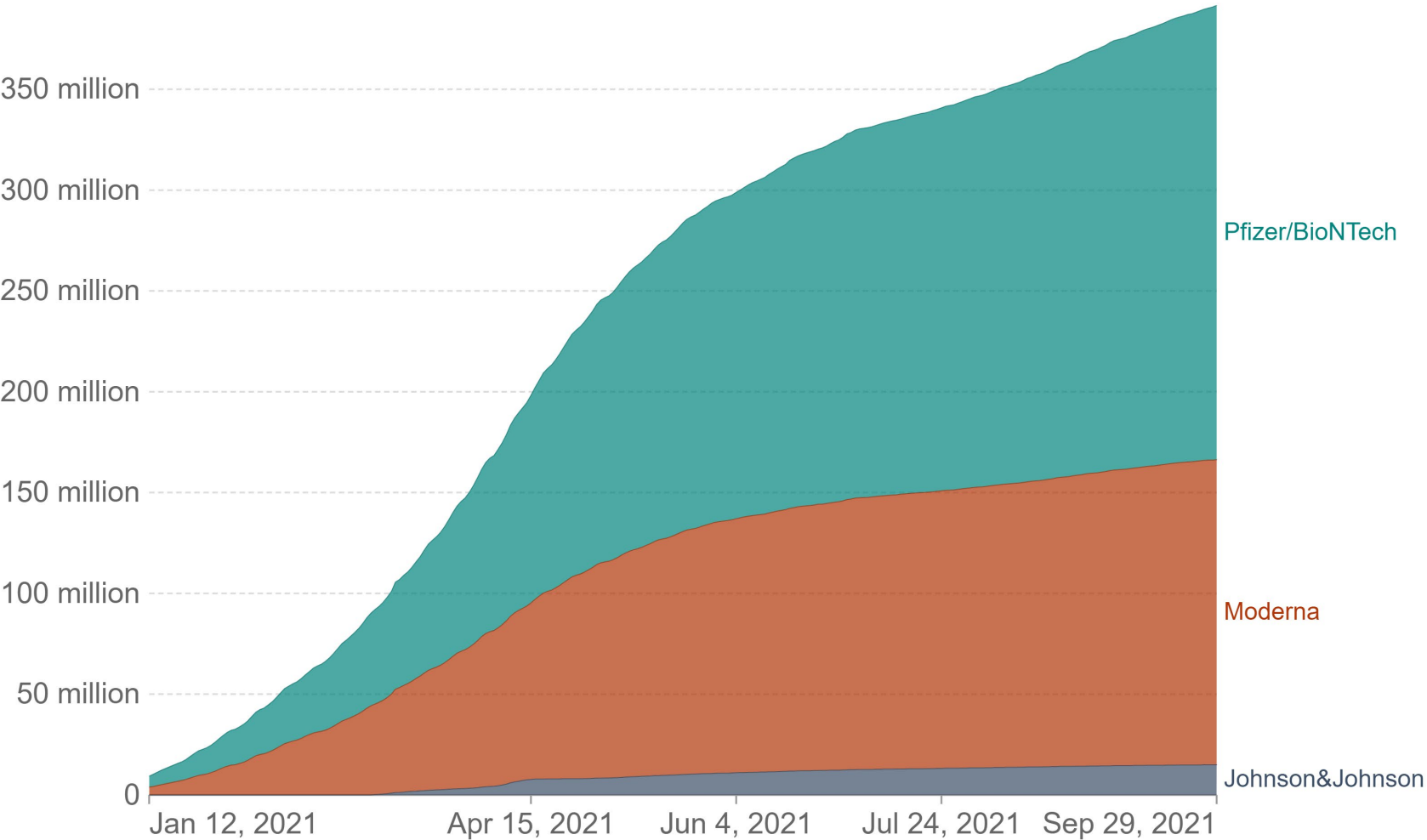
WHO Coronavirus (COVID-19) Dashboard

[Overview](#)[Measures](#)[Data Table](#)[Explore](#)

Globally, as of 5:54pm CEST, 1 October 2021, there have been 233,503,524 confirmed cases of COVID-19, including 4,777,503 deaths, reported to WHO. As of 28 September 2021, a total of 6,143,369,655 vaccine doses have been administered.

COVID-19 vaccine doses administered by manufacturer, United States

For vaccines that require multiple doses, each individual dose is counted. As the same person may receive more than one dose, the number of doses can be higher than the number of people in the population.



1.3 billion Pfizer doses delivered globally.

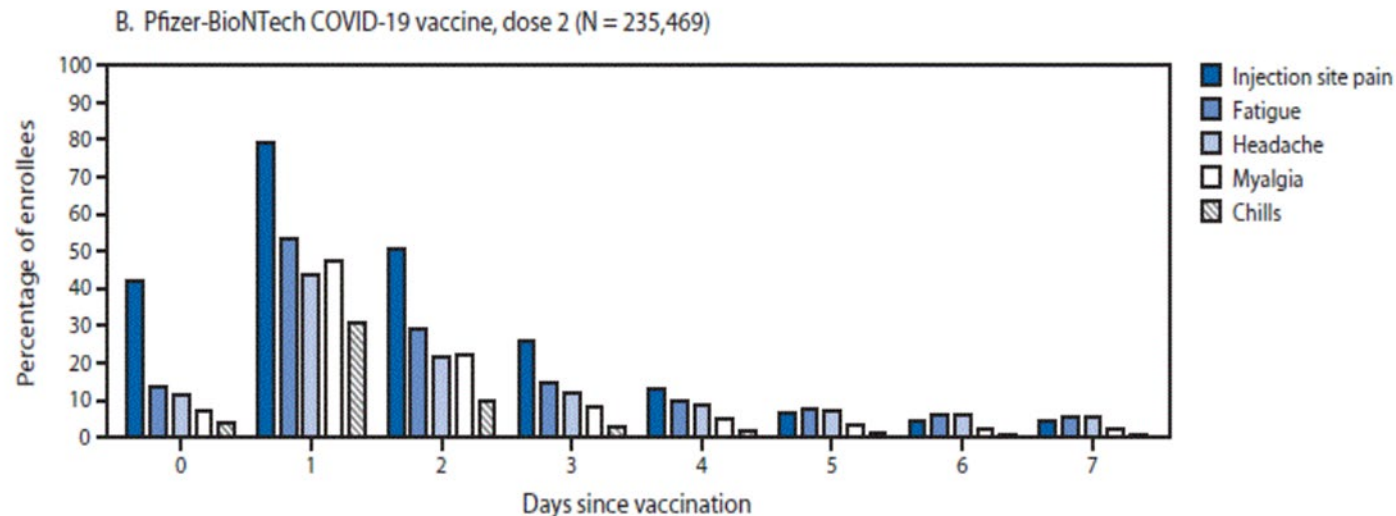
Trials started in children aged 6 months – 5 years in August 2021

Source: Official data collated by Our World in Data

OurWorldInData.org/covid-vaccinations • CC BY

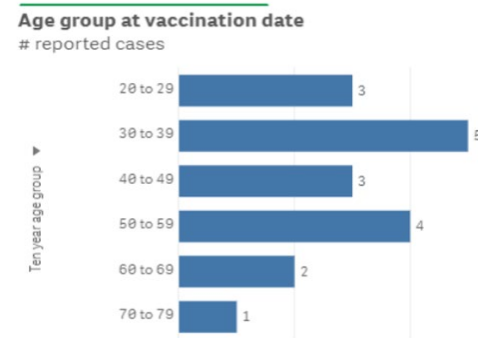
Side Effects

- Begin within 24 hours of vaccination and resolve within 1 to 2 days.
- Mild to moderate severity and do not affect daily activities.
- Milder and reported less frequently in those older than 55 years when compared to those aged 16 to 55 years.
- More common after the second dose (e.g. fever, myalgia, and fatigue).
- Managed with paracetamol or nonsteroidal anti-inflammatory drugs (NSAIDs).



Myocarditis

- Background “noise” 100- 1000 cases /million people/ yr 100 cases + per year in NZ
- Pericarditis / myocarditis due to vaccine 1 case per million vaccinations, highest risk in males aged 12 – 39 yrs (8 cases per million) – usually mild, short lived.




* these reports do not necessarily have a causal relationship with administration of Comirnaty and may represent coincidental events.

Adverse events of special interest (AESI) up to and including 11 September 2021

AESI Category	AESI	Total ^a
Immune system disorders	Guillain-Barré Syndrome	6
	Thrombocytopenia	12
	Thrombosis with thrombocytopenia syndrome (TTS)	0
	Anaphylaxis ^b	47
Cardiovascular system	Myocardial infarction (heart attack)	20
	Myocarditis/pericarditis	85
Blood and lymphatic system	Thrombosis	15
	Embolism	35
	Deep vein thrombosis (DVT)	41
	Vasculitis	6
	Haemorrhage	64
Hepato-gastrointestinal and renal system	Acute kidney injury	9
	Acute liver injury	0
Nervous system	Aseptic meningitis	0
	Encephalitis	<6
	Stroke	39
	Bell's Palsy/facial paralysis	62
	Myelitis/myelitis transverse	<6
Infections and musculoskeletal	Erythema multiforme	<6
	Arthritis	17
	Herpes zoster	105
Pregnancy, puerperium and perinatal conditions	Abortion (spontaneous abortion /miscarriage)	<6

a. Includes all reports, both serious and non-serious. Counts below 6 are reported as <6 for privacy reasons. Counts may change due to receipt of additional information and subsequent reclassification of cases.

b. Includes reports meeting levels 1-3 of the [Brighton Collaboration case definition](#) .

Adverse Effects of Special Interest

Global database of disease incidence reports

Post-marketing surveillance looking for any signals in the noise that might flag a side effect.

Anaphylaxis – 4.7 per million doses

How so fast ?

- mRNA technology was years in development - manufacturing process was ready.
- China shared genetic information about SARS-CoV-2.
- Stages of testing process done simultaneously.
- Money - the companies had resources they needed.
- mRNA technology allows faster approach.
- Ease of enrolling study volunteers.
- SARS-CoV-2 so contagious and widespread, many volunteers who got the vaccine were exposed to the virus.
- Companies began manufacturing vaccines ahead of authorization/ approval.

What's in the Pfizer BioNtech vaccine

- Active ingredient: 30µg of a nucleoside modified messenger RNA (BNT162b2) encoding the viral spike (S) glycoprotein of SARS-CoV-2 embedded in a lipid nanoparticle
- Fats (these ingredients make up the lipid nanoparticle which is the transport mechanism for the active ingredient to make it inside a cell without being broken down)
 - 0.43 mg (4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate)
 - 0.05 mg 2[(polyethylene glycol)-2000]-N,N-ditetradecylacetamide
 - 0.09 mg 1,2-distearoyl-sn-glycero-3- phosphocholine
 - 0.2 mg cholesterol
- Salts (these ingredients help ensure the vaccine pH is close to that of human cells)
 - 0.01 mg potassium chloride
 - 0.01 mg monobasic potassium phosphate
 - 0.36 mg sodium chloride
 - 0.07 mg dibasic sodium phosphate dihydrate
- Sugar (this ingredient protects the lipid nanoparticle at the very cold temperatures [around -80°C] that the vaccine is stored at)
 - 6mg sucrose

Why Vaccinate ?

4. Prevention is better than cure

They can treat it now ..

Proven

Supportive therapy (Paracetamol Honey Eat well Fluids Rest “PHEVR”)

Prone posture on ventilator - halved mortality

High dose Dexamethasone – hospitalised patients needing supplemental oxygen – increases time without mechanical ventilation and alive

Being tested

Inhaled steroids

Antiviral therapies (remdesivir/ molnupiravir)

Immune modulating therapies (interferons, IL1,IL6 inhibitors)

Convalescent plasma

Recombinant monoclonal antibodies (casirivimab)

Colchicine

Trumpian

vit D, Vit C, Zinc, Hydroxchloroquine , Ivermectin

Regen-Cov (casirivimab and imdevimab) “Game Changer” RNZ

- Mild – moderate covid 696 received casirivimab–imdevimab compared to untreated patients. Primary outcome was rate of hospitalization.
- The median age of the antibody-treated cohort was 63 years
- High-risk characteristics were hypertension (52.4%), body mass index ≥ 35 (31.0%), diabetes mellitus (24.6%), chronic lung disease (22.1%), chronic renal disease (11.4%), congestive heart failure (6.6%), and compromised immune function (6.7%)
- Patients who received casirivimab–imdevimab had significantly lower all-cause hospitalization. Day 14 (1.3% vs 3.3%; CI 0.5–3.7%), day 21 (1.3% vs 4.2%; CI: 1.2–4.7%), and day 28 (1.6% vs 4.8%; CI: 1.4–5.1%).

PS 1 person not hospitalised for every 50 people treated

[https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370\(21\)00382-5/fulltext](https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(21)00382-5/fulltext)

Tocilizumab – “Cuts Deaths From Covid” BBC

- Patients with hypoxia, systemic inflammation and SARS-CoV-2.
- 4116 adults were randomly assigned to tocilizumab (n=2022) or usual care (n=2094)
- mean age was 63·6 years , 67% were male, and 73% were White
- Most patients (82% in both groups) were receiving systemic corticosteroids
- 35% of patients allocated to usual care died vs 31% of patients treated tocilizumab (rate ratio 0·85; 95% CI, 0·76–0·95; p=0·0028).

PS – 1 death prevented for every 25 patients treated.

Merk's Molnupiravir "Can Halve Risk of Hospitalisation" BBC

- Potent ribonucleoside analogue that inhibits the replication of SARS-CoV-2
- 775 mild-to-moderate COVID-19, with symptom onset in past 5 days
- All patients were required to have at least one risk factor associated with poor disease outcome.
- 7.3% of patients who received molnupiravir were either hospitalized or died through Day 29 following randomization (28/385), compared with 14.1% of placebo-treated patients (53/377); $p=0.0012$.
- No deaths were reported in patients who received molnupiravir, as compared to 8 deaths in patients who received placebo.

PS 1 person not hospitalised for every 14 treated.

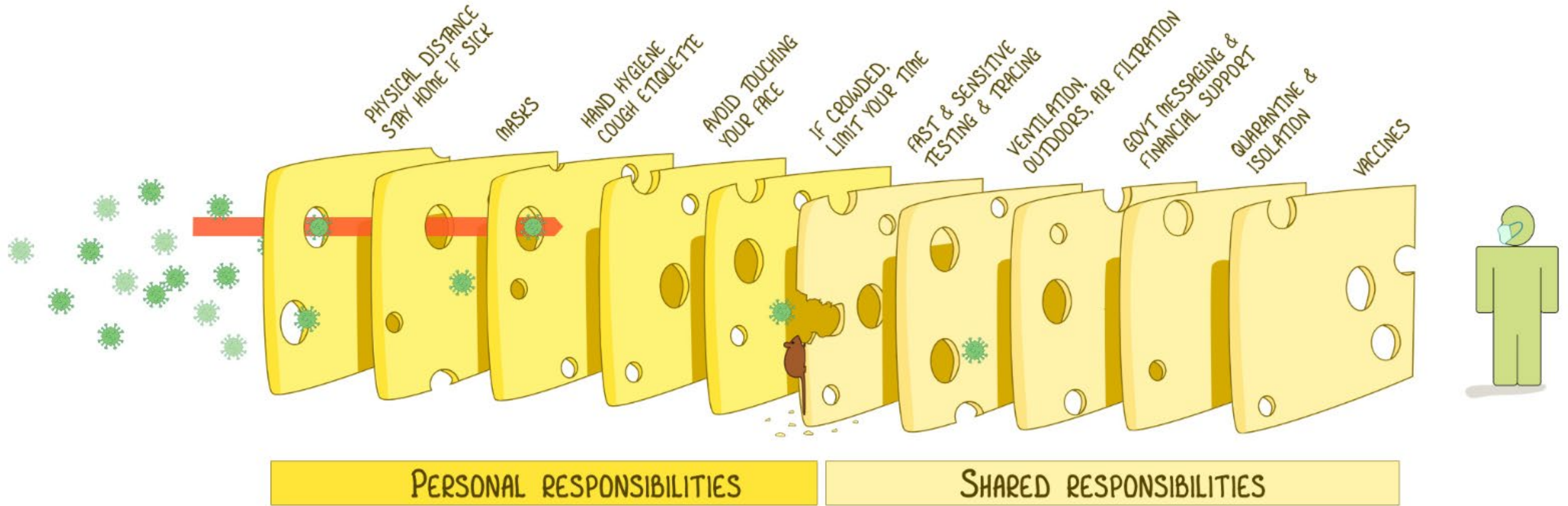
<https://www.merck.com/news/merck-and-ridgebacks-investigational-oral-antiviral-molnupiravir-reduced-the-risk-of-hospitalization-or-death-by-approximately-50-percent-compared-to-placebo-for-patients-with-mild-or-moderat/>

Why Vaccinate ?

5. Preventing Covid needs every layer of the cheese.

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.

74,577

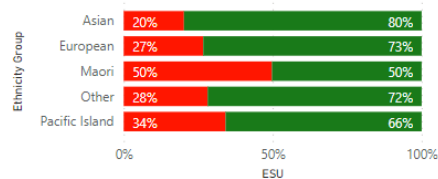
1st dose

69 %

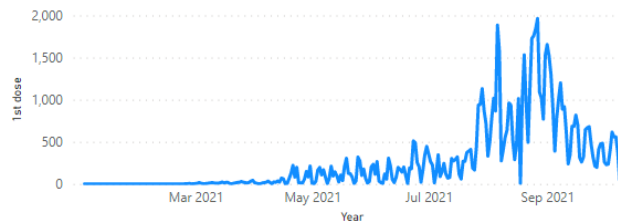
1st dose coverage

ESU by Ethnicity Group and 1st dose given

1st dose given ● No ● Yes

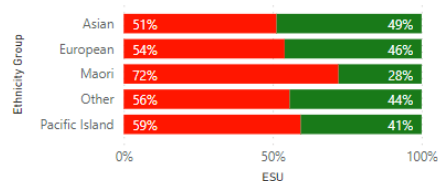


1st dose by Year, Quarter, Month and Day



ESU by Ethnicity Group and 2nd dose given

2nd dose given ● No ● Yes



2nd dose by Year, Quarter, Month and Day



NOTE: This page is filtered to only show patients aged 12+ who are eligible to receive the Covid vaccine.

192,935

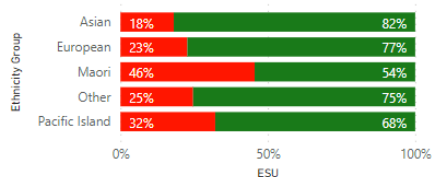
1st dose

73 %

1st dose coverage

ESU by Ethnicity Group and 1st dose given

1st dose given ● No ● Yes

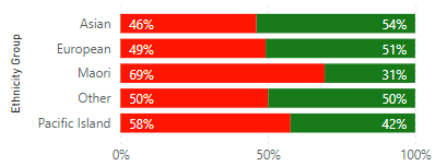


1st dose by Year, Quarter, Month and Day

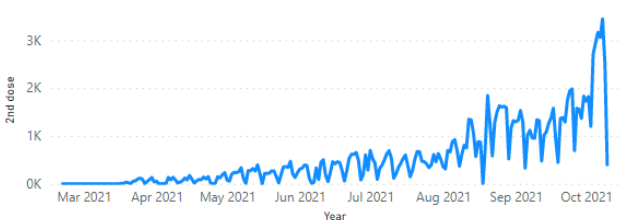


ESU by Ethnicity Group and 2nd dose given

2nd dose given ● No ● Yes



2nd dose by Year, Quarter, Month and Day



NOTE: This page is filtered to only show patients aged 12+ who are eligible to receive the Covid vaccine.

Nationally 73% of the rural population has had a first dose compared to 82% in urban areas.

9% gap between rural and urban.

53% of the rural Māori population have had a first dose of the vaccine compared to 59% of urban Māori

20% gap with the rest of the population

6% gap with urban.

We still have 40k rural people eligible to be vaccinated across the Midlands region.



VACCINATION IS ONE POWERFUL TOOL WE ALL USE TO STAY WELL

OTHER TOOLS THAT HELP US:



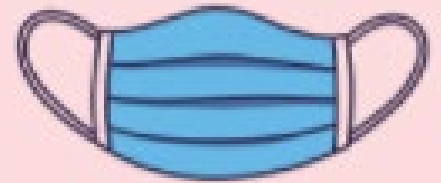
Sick leave so we
can stay home



Wastewater
testing



Improving indoor
air quality



Mask wearing
in public

AND HERE'S WHY WE DO IT:



To care for our family
and loved ones



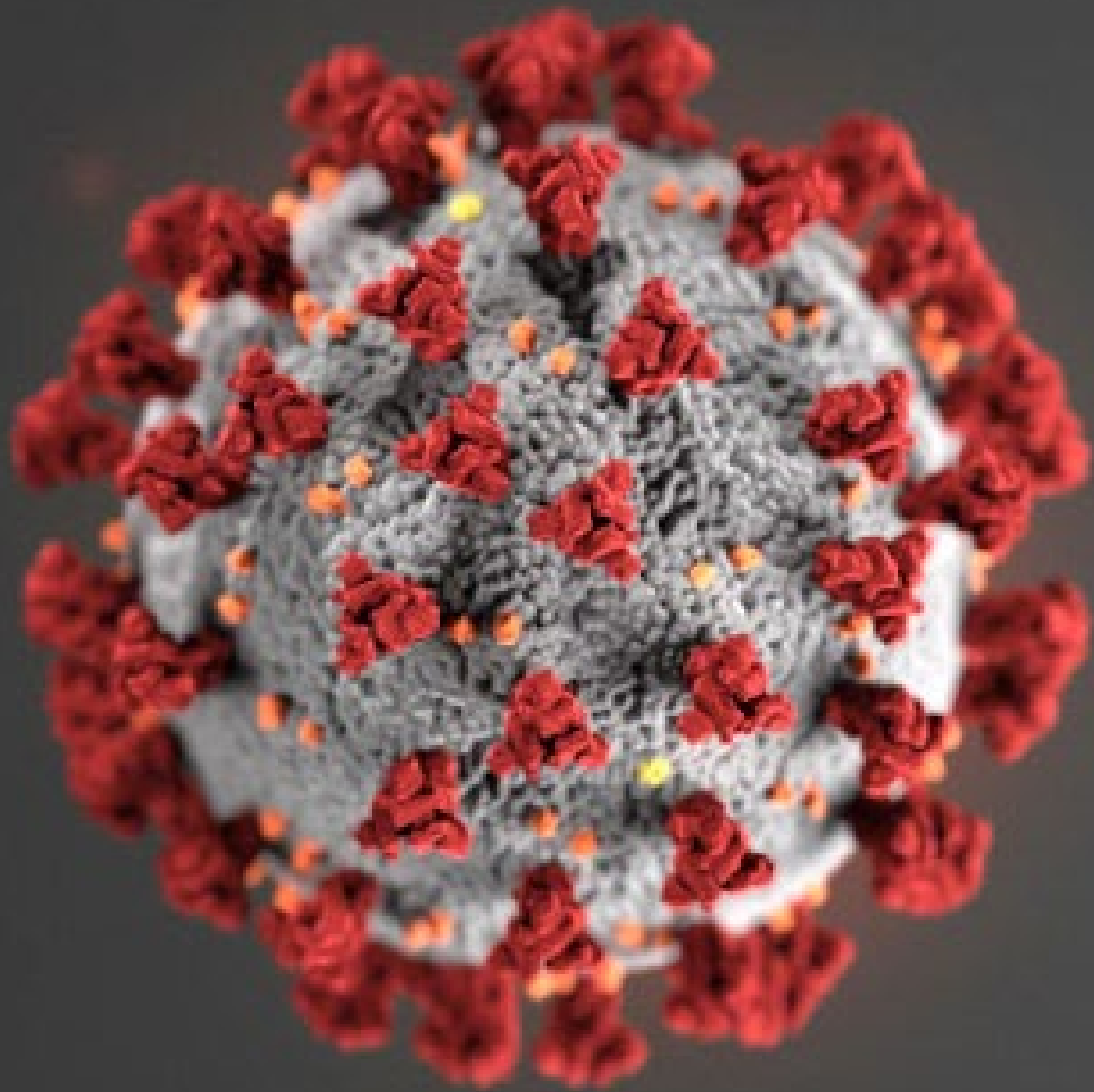
To keep the
community well



To get this darn
thing over with

More Information – use reliable sources.

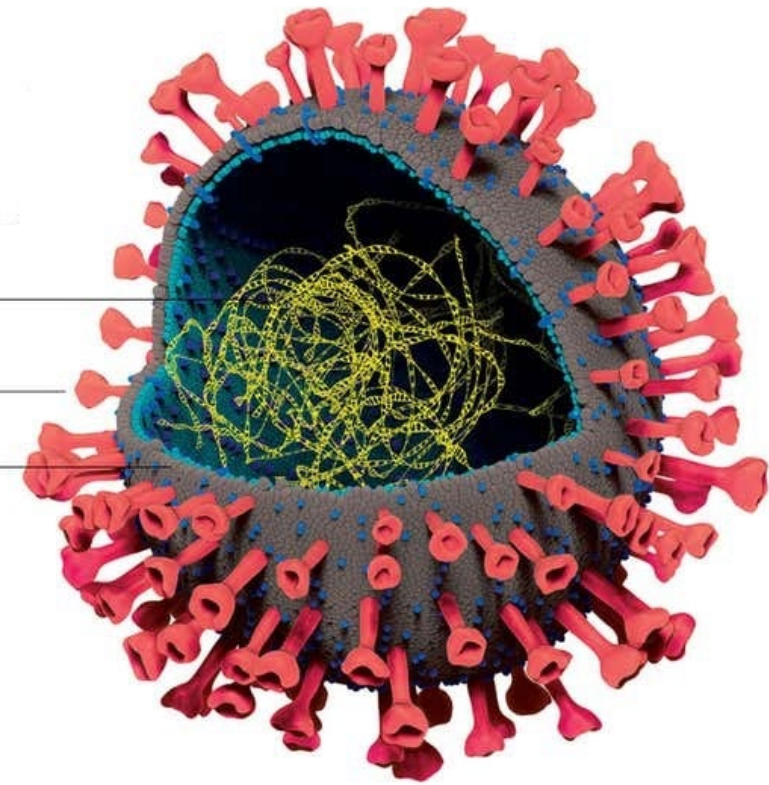
- Immune.org.nz (<https://www.immune.org.nz/>)
- Awhina App (<https://apps.apple.com/nz/app/%C4%81whina/id1507046145>)
- MOH covid 19 pages (<https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus>)
- Health Navigator (<https://www.healthnavigator.org.nz/>)
- Health Pathways (<https://midland.communityhealthpathways.org/>)
- Dynamed (<https://www.pinnaclepractices.co.nz/>)
- Goodfellow unit (<https://www.goodfellowunit.org/>)
- RNZCGP (<https://www.rnzcgp.org.nz/>)



RNA enclosed
in protein

Spike protein

Lipid membranes



Vaccinate
Vaccinate
Vaccinate