

# COVID-19 3<sup>RD</sup> WAVE

## Facts, Emerging Trends & Challenges

4<sup>th</sup> Nurse-Midwife-Led Webinar Series, 1<sup>ST</sup> April 2021

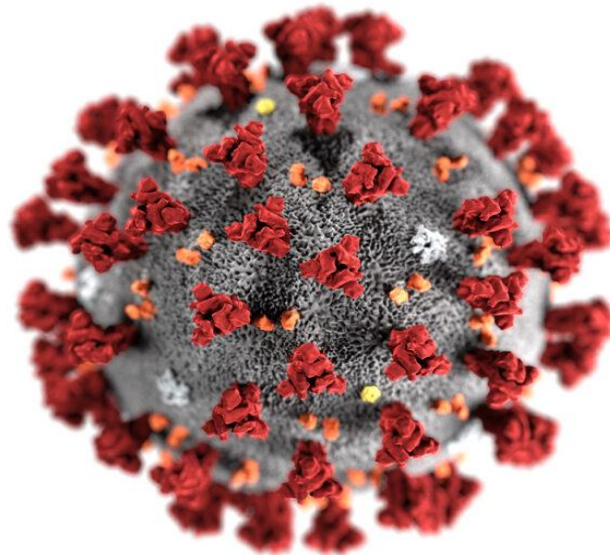
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University of Nairobi

# Outline

- COVID-19 pathology
- Clinical presentation
- Risk factors for severe disease
- 3<sup>rd</sup> wave
- Covid-19 vaccine

# PATHOLOGY

- Caused by a coronavirus called SARS-CoV-2
- Name is from its crown-like appearance (corona)



- Angiotensin-converting enzyme 2 (ACE2) receptors to facilitate viral entry into target
- Attaches to cell receptors using spike protein
- Primarily cells in upper & lower respiratory system
- But also affects other cells – blood vessels, kidneys, pancreas, etc.

# CLINICAL PRESENTATION

- Asymptomatic, mild or severe symptoms
- Mild - cough, tiredness, joint pains, fever, sore throat, headache, loss of smell, lose of taste
- Severe - shortness of breath/difficulty in breathing, pneumonia, blood clots, DM, renal failure etc.
- Death
- Mild symptoms (81%); severe (14%); critical (5%)

**No one can predict the course it will take in a patient**

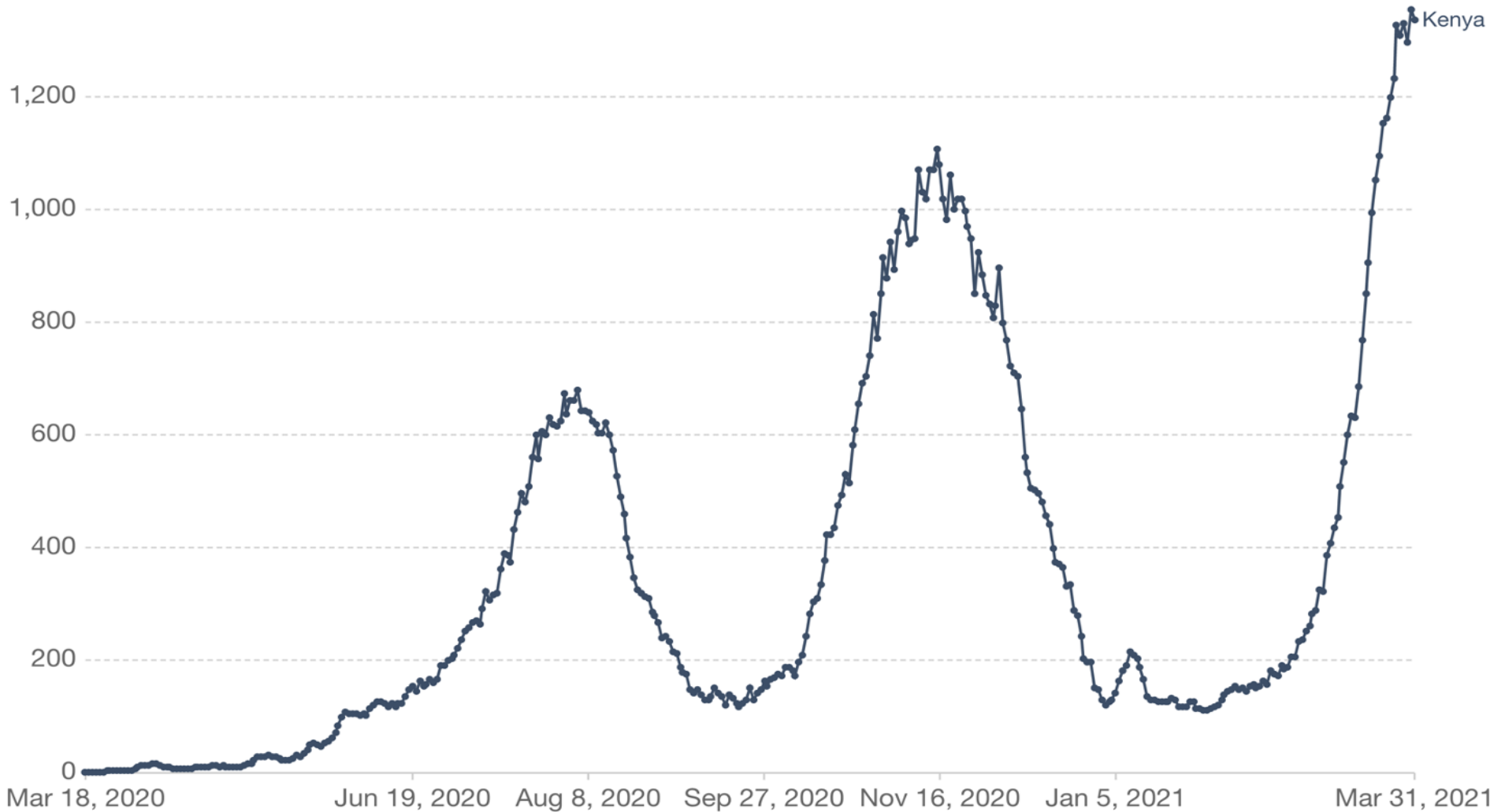
# RISK FOR SEVERE DISEASE

- Age
- Co-morbidities – CVD, DM, Chronic lung disease, cancers (haematological, lung, metastatic disease)
- Smoking
- Gender
- Viral load
- ?Genetic e.g. Blood Group “A” vs Group “O”

**THIRD WAVE**

# Daily new confirmed COVID-19 cases

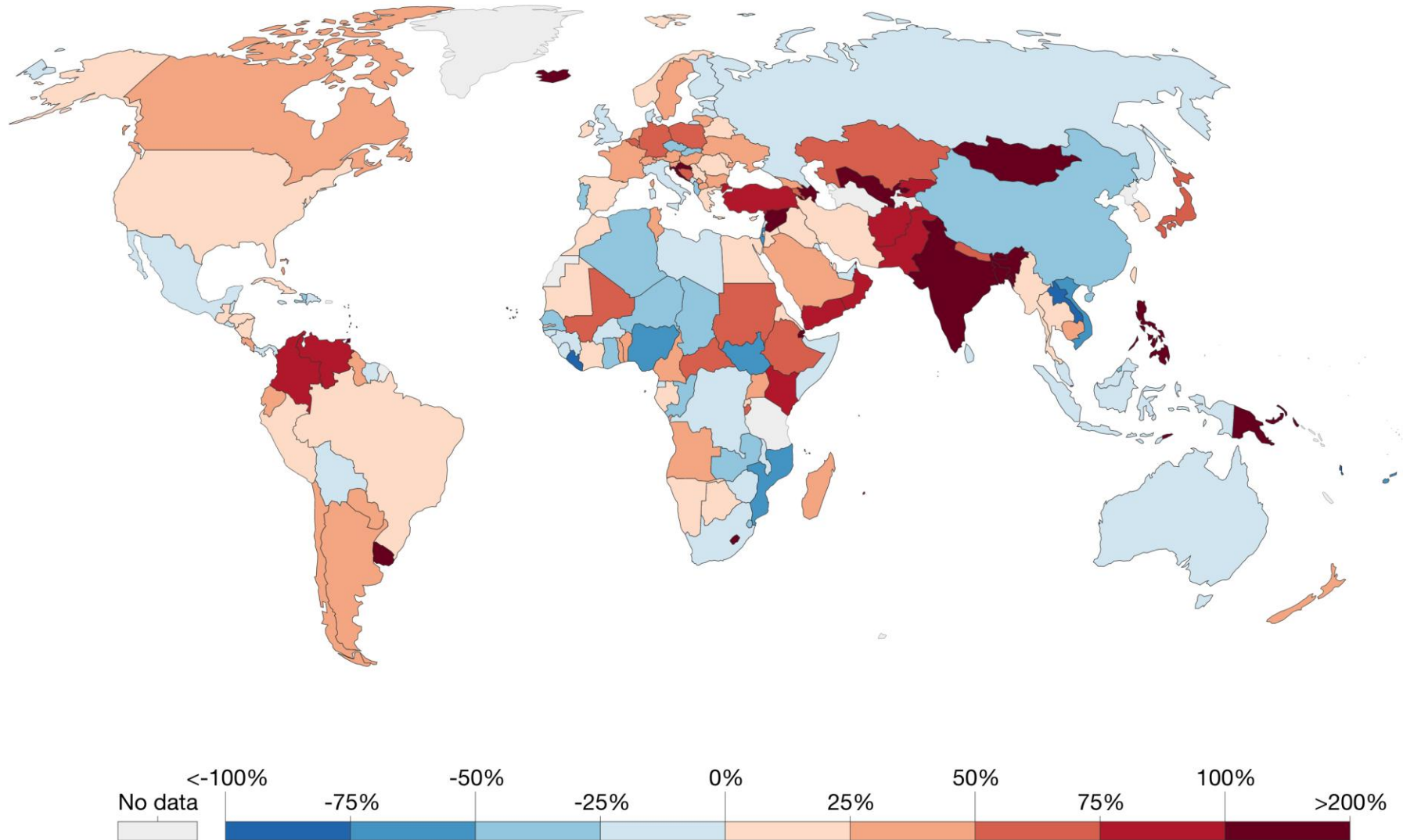
Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.





# Biweekly change in confirmed COVID-19 cases, Mar 31, 2021

The biweekly growth rate on any given date measures the percentage change in the number of new confirmed cases over the last 14 days relative to the number in the previous 14 days.



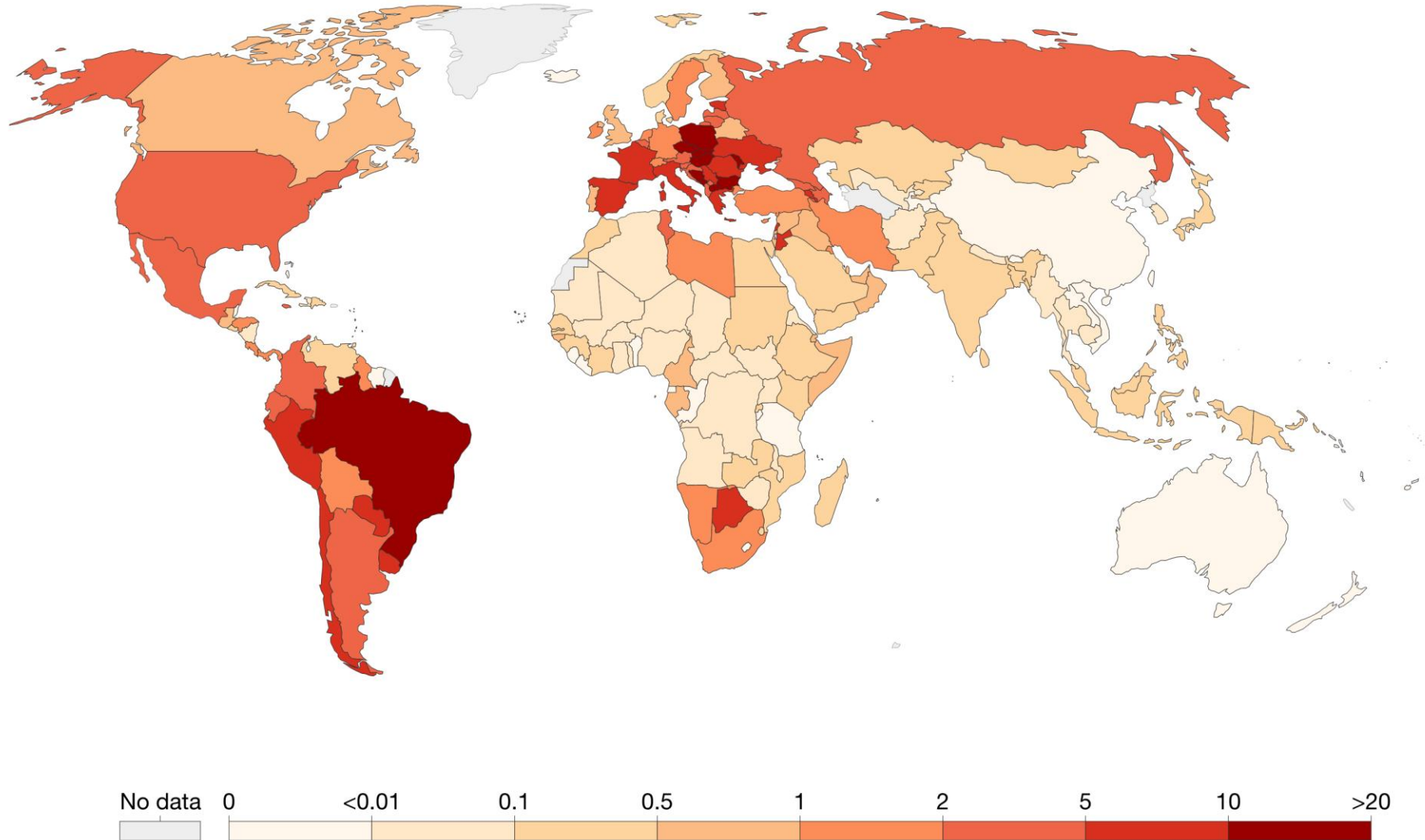
# Daily new confirmed COVID-19 deaths

Shown is the rolling 7-day average. Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.



# Daily new confirmed COVID-19 deaths per million people, Mar 31, 2021

Shown is the rolling 7-day average. Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.



# VIRUS VS HOST

- Mutations – several mutations lead to new variant
- Multiple variants globally (3 most important)
- **UK** variant known B.1.1.7
- **SA** variant known as B.1.351
- **Brazilian** variant known as P.1
- ?Transmission, ?Disease, ?Diagnosis, ?Vaccine
- Host behaviour - mask; distancing; home staying etc.



# CORONAVIRUS

## BILOU'S ADVICES

DO YOU KNOW HOW TO PROTECT YOURSELF?

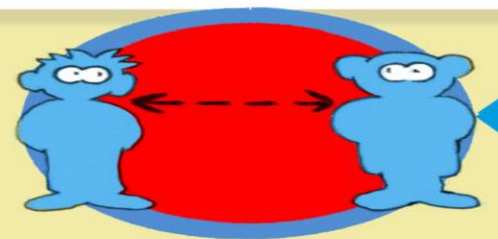
Stay at home



Wash your hands



Maintain social distancing



Do not put your fingers in your mouth



Avoid handshake to say hello



Sneeze in your elbow



Use a disposable tissue once



and threw it after use







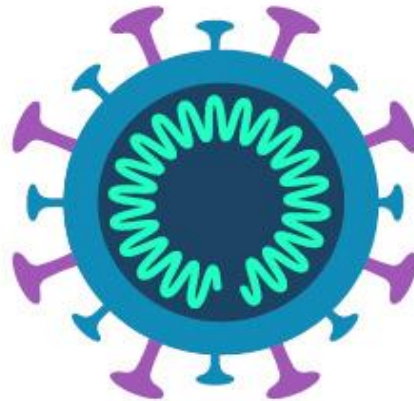




# COVID-19 VACCINES



Live Attenuated



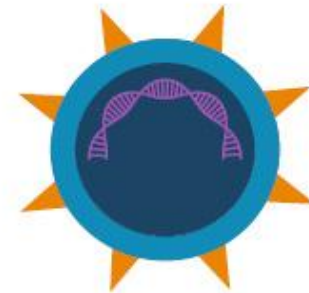
SARS-CoV-2



DNA Plasmid



Lipid Nanoparticle mRNA
























Non-Replicating Viral Vector





# How some of the Covid-19 vaccines compare

Company	Type	Doses	Storage
 <b>Oxford Uni-AstraZeneca</b>	Viral vector (genetically modified virus)	x2 	 2 to 8°C (6 months)
 <b>Moderna</b>	RNA (part of virus genetic code)	x2 	 -25 to -15°C (7 months)
 <b>Pfizer-BioNTech</b>	RNA	x2 	 -80 to -60°C (6 months)
 <b>Gamaleya (Sputnik V)</b>	Viral vector	x2 	 -18.5°C (liquid form) 2 to 8°C (dry form)
 <b>Sinovac (CoronaVac)</b>	Inactivated virus (weakened virus)	x2 	 2 to 8°C
 <b>Novavax</b>	Protein-based	x2 	 2 to 8°C
 <b>Janssen</b>	Viral vector	x1 	 2 to 8°C (3 months)

**ChAdOx1 nCoV-19  
(AstraZeneca-Oxford)**

**BNT162b2 (Pfizer-BioNTech)**

Range in brackets shows difference  
between first and second doses

Arm pain (67%)	Arm pain (92-83%)
Chills (51%)	Chills (33-58%)
Fever (18%)	Fever (17%)
Joint pains (31%)	Joint pains (17%)
Muscle aches (60%)	Muscle aches (25-58%)
Fatigue (70%)	Fatigue (42-75%)
Headache (68%)	Headache (50-67%)



**THANK YOU**

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**HEALTH CARE  
WORKERS**