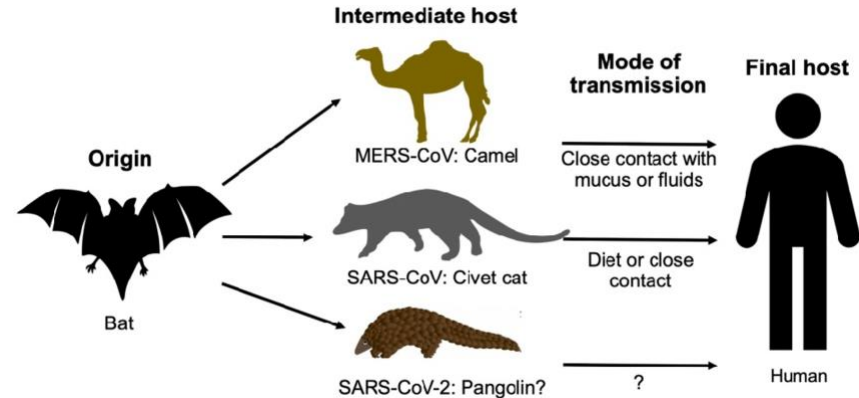
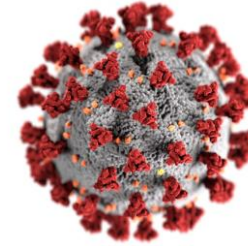


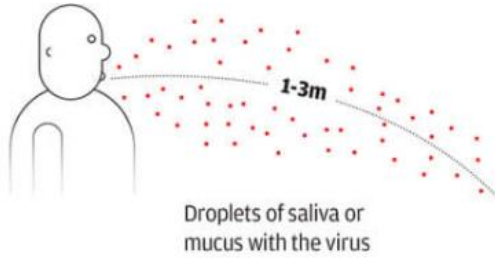
COVID-19: A South African and African Perspective

Background

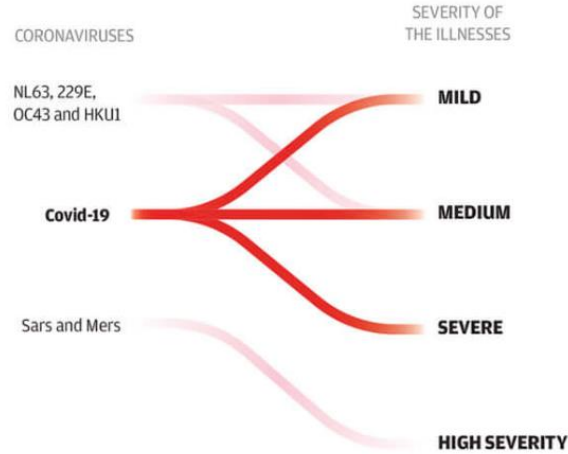
- Coronaviruses are a large family of viruses that are common in people and many different species of animals, including camels, cattle, cats, and bats
- People around the world commonly get infected with human coronaviruses 229E, NL63, OC43, and HKU1
- Coronavirus disease 2019 (COVID-19) is caused by SARS-CoV-2
- This is the third Coronavirus to emerge in the human population in the past two decades following on MERS-CoV and SARS-CoV
- All three of these viruses have their origins in bats



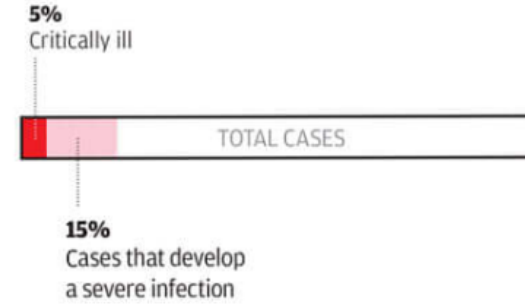
Clinical Course



Transmission

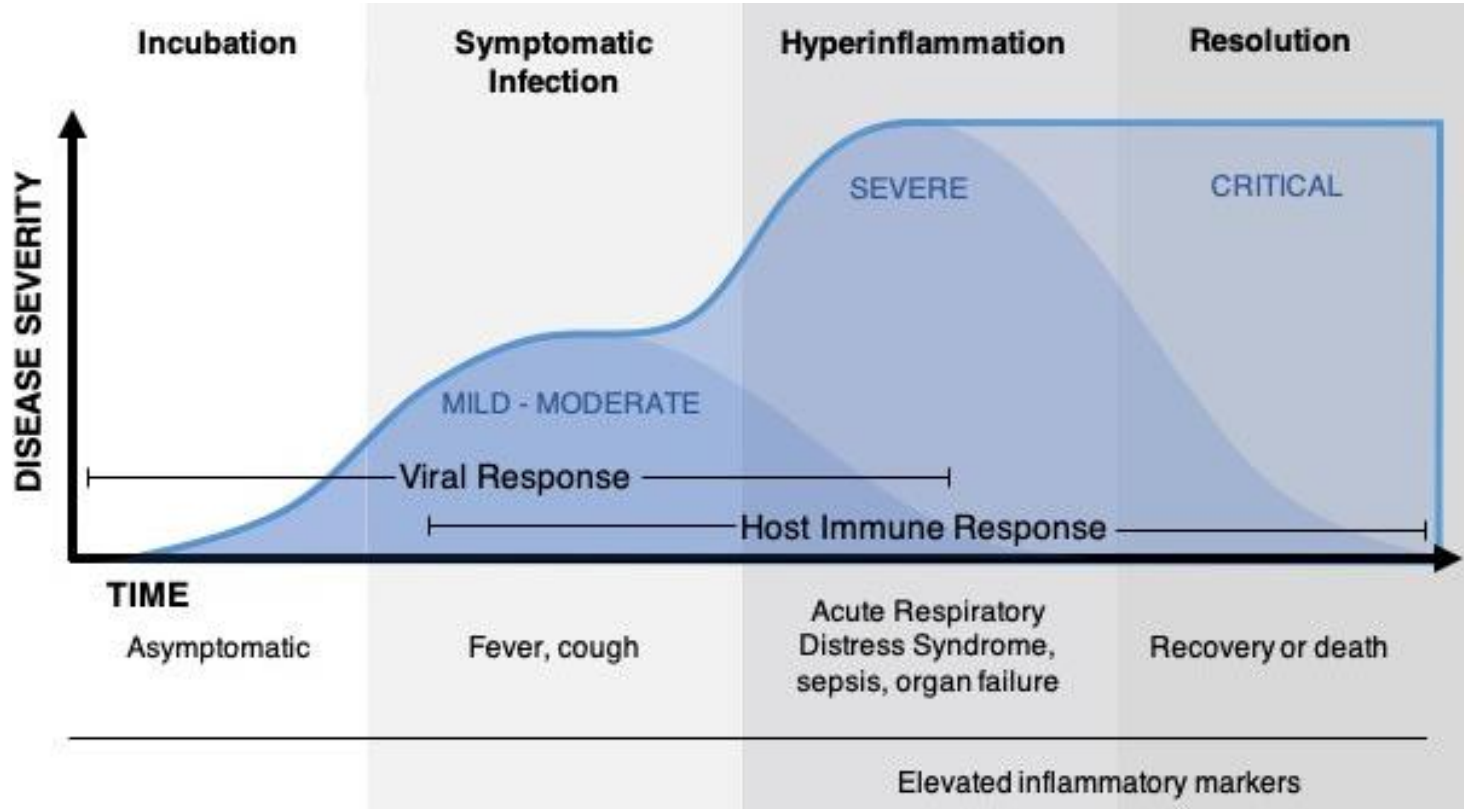


Clinical Outcomes

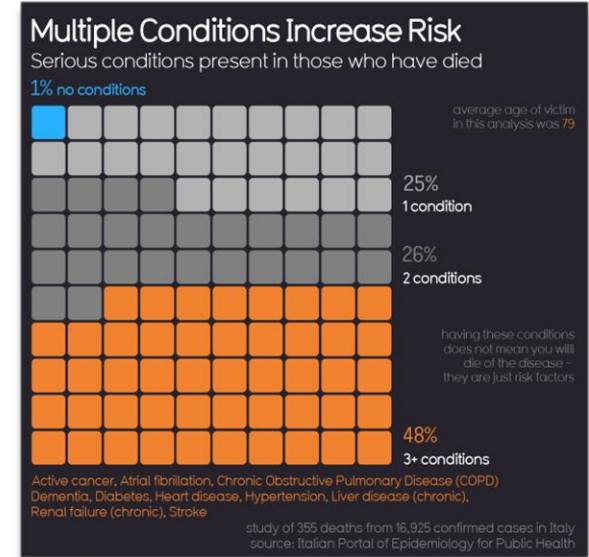
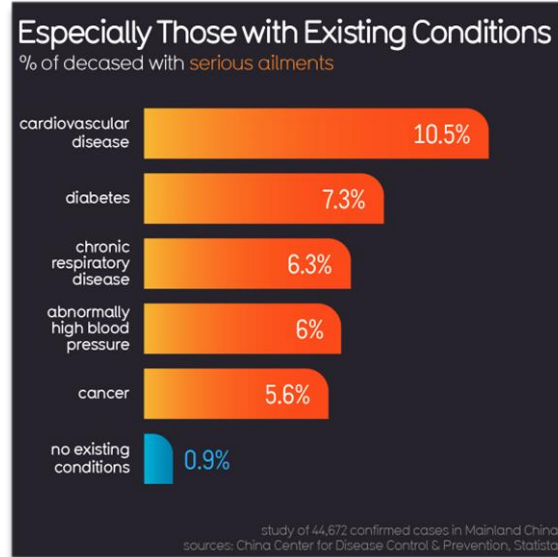
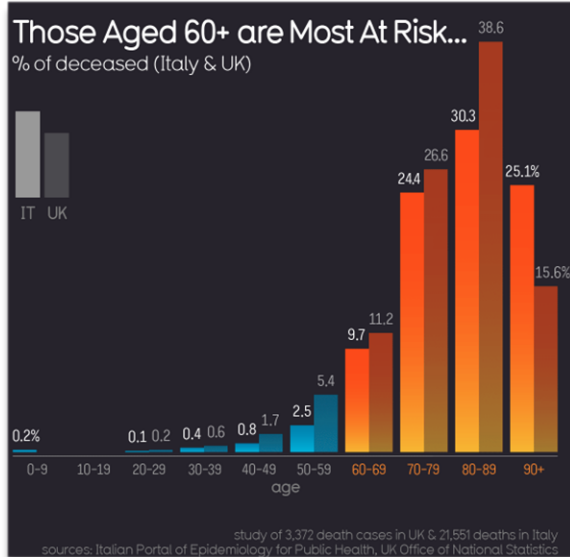


Disease Burden

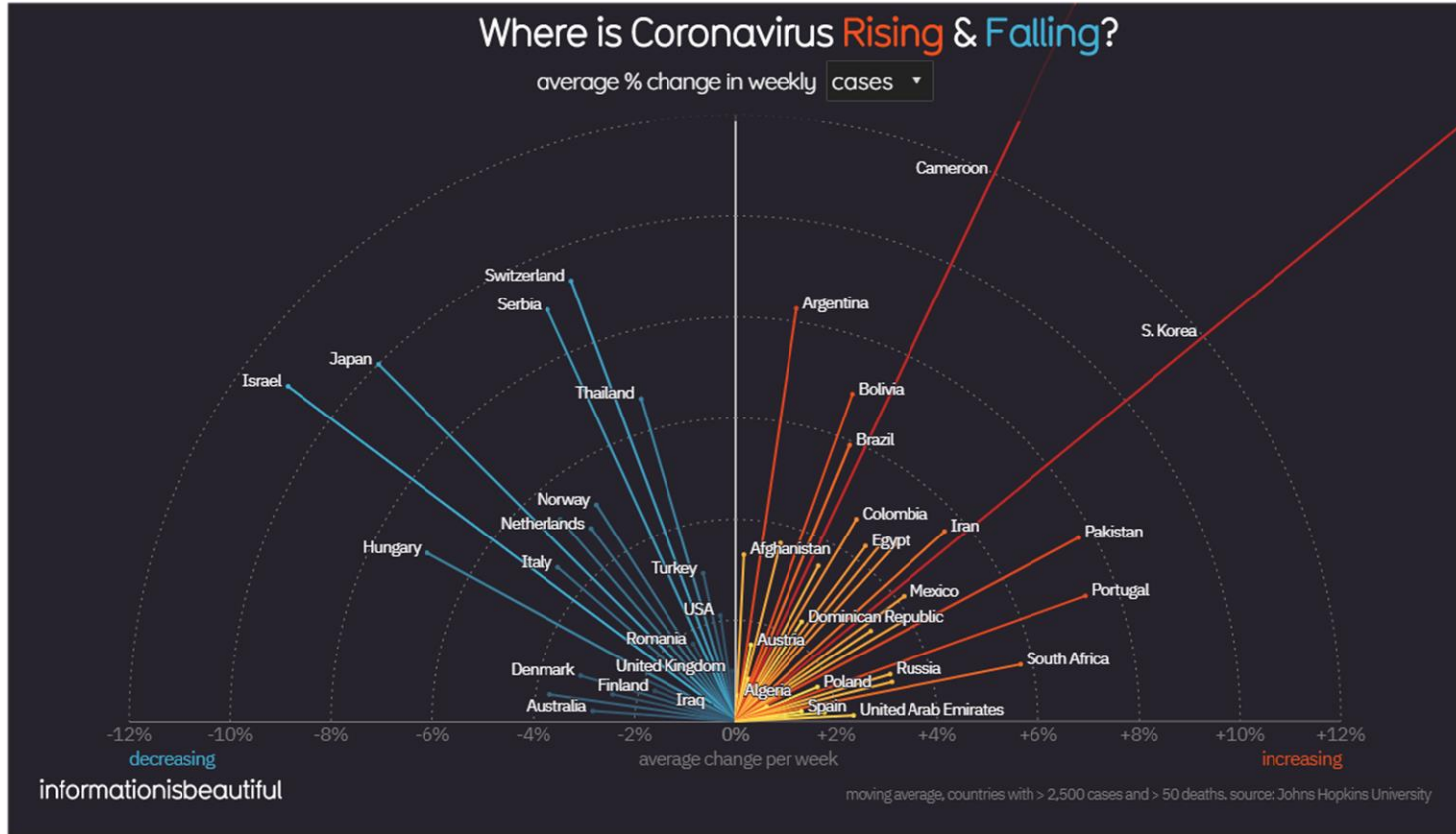
Clinical Course



Risk Factors



Pandemic evolution



The number of new confirmed COVID-19 cases has started to level off on a global basis.

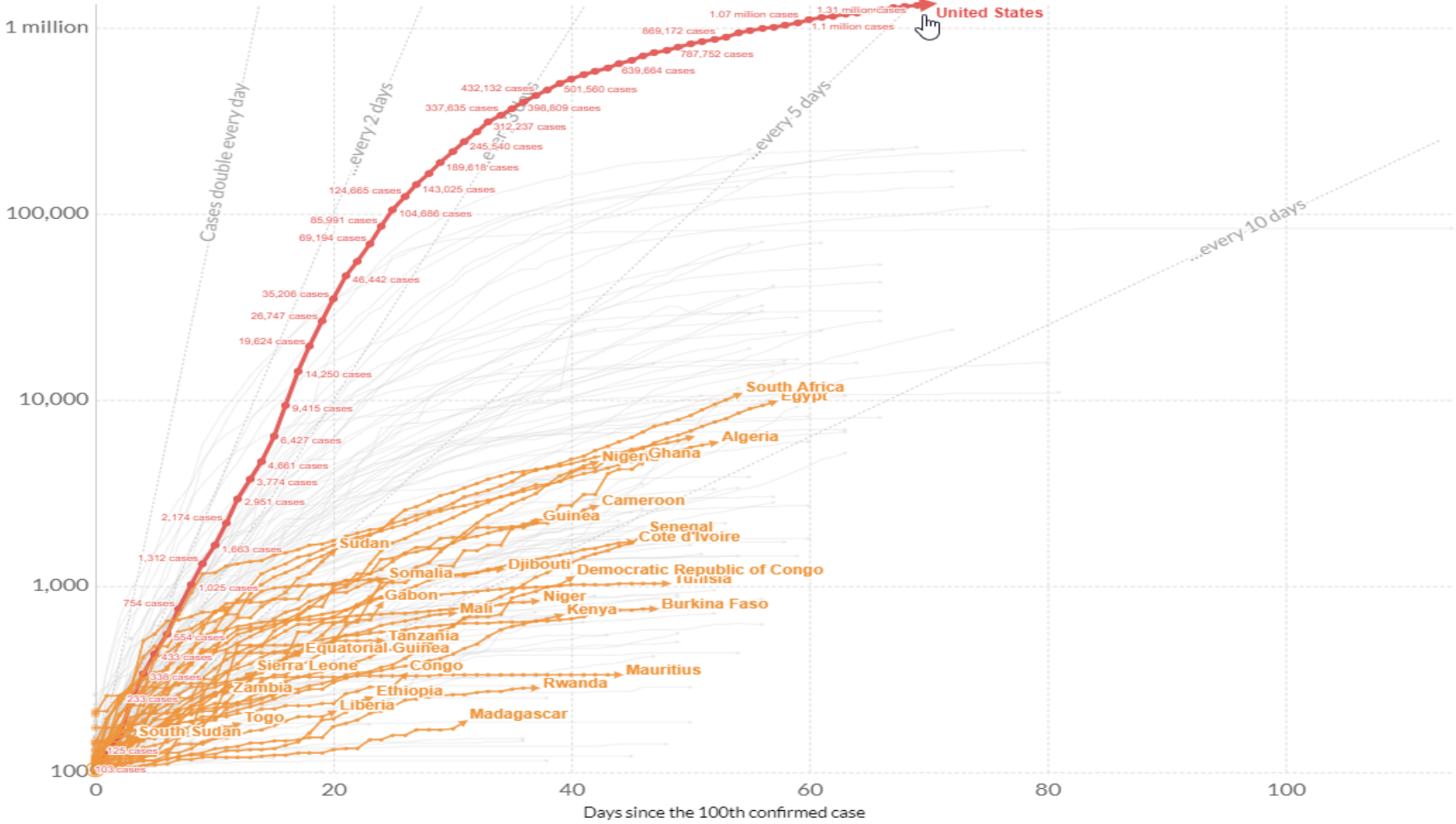
8 out of 10 of the world's most populous countries are now faced with increasing COVID-19 cases

After tentatively reopening their economy South Korea is facing a new wave of COVID-19 cases

Total confirmed COVID-19 cases: how rapidly are they increasing?

The number of confirmed COVID-19 cases is lower than the number of total cases. The main reason for this is limited testing.

LOG

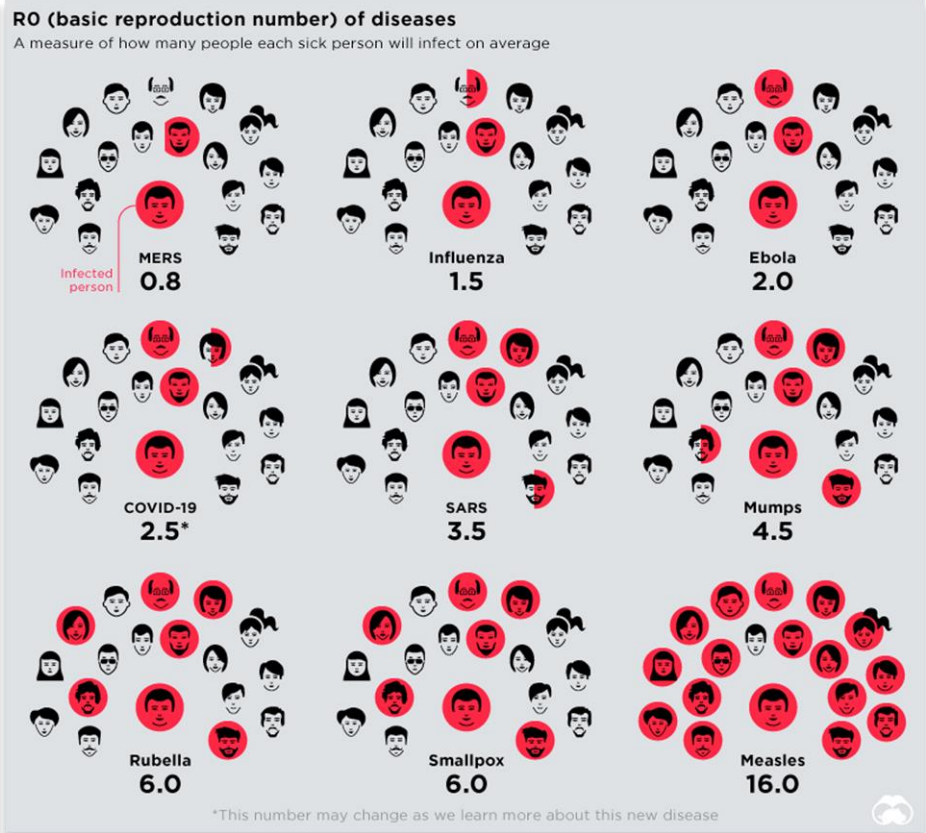
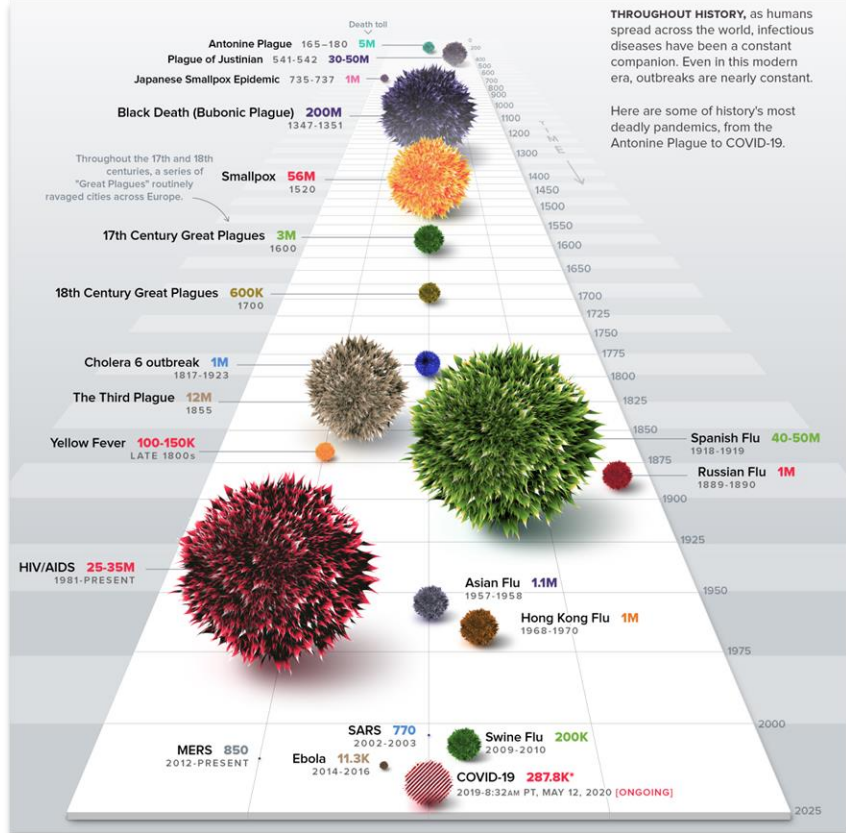


- Africa
- Asia
- Europe
- North America
- Oceania
- South America

Jan 22, 2020 — May 12, 2020

United States
 Mar 3, 2020
 Y Axis: 103 cases
 X Axis: 0 days
 May 12, 2020
 Y Axis: 1.35 million cases
 X Axis: 70 days

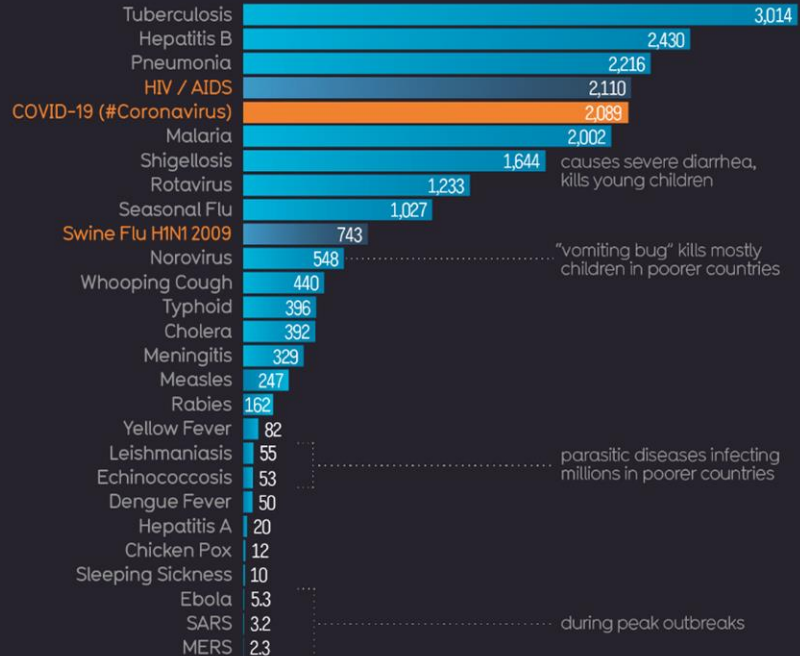
How does COVID-19 stack up to other diseases?



How does COVID-19 stack up to other diseases?

updated 7th May 2020

Average Disease Deaths per Day Worldwide



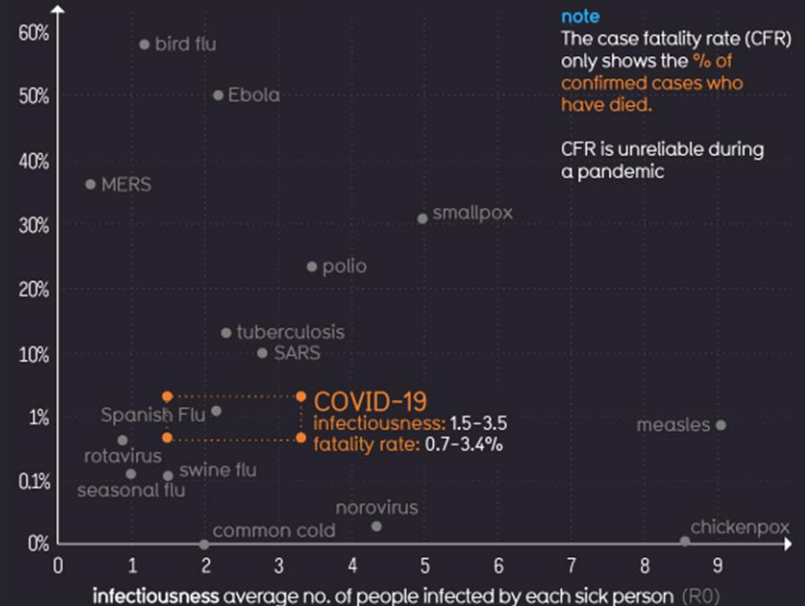
pandemic (global outbreak) endemic (always around)

sources: US Centres for Disease Control, WHO, The Lancet

How Contagious & Deadly is It?

We don't fully know yet but it's in **this range**

% who die (CASE FATALITY RATE)



note

The case fatality rate (CFR) only shows the % of confirmed cases who have died.

CFR is unreliable during a pandemic

infectiousness average no. of people infected by each sick person (R0)

sources: US Centers for Disease Control & Prevention, WHO, New York Times

Pandemic impact on other diseases

- Malaria: In the worst case – where preventative measures are suspended and access to antimalarial medicine falls dramatically - malaria deaths in Sub-Saharan Africa could jump to 769,000
- Routine immunisation: 74 countries impacted globally (end April 2020)
- More than 117 million children at risk of missing out on Measles vaccine
- 50% reduction in tests for TB and a delayed diagnosis. TB remains the leading cause of death in South Africa



COVID-19: Prevention and treatment options

There are **66 programs** working on **3 different approaches**:





#Sanofi
Acts



Our Response in the Fight against COVID-19

OUR 4 GLOBAL BUSINESS UNITS

3 core GBUs



Specialty Care

Immunology

Rare diseases

Rare blood diseases

Neurology, MS

Oncology



General Medicines

Diabetes

Cardiovascular

Established Products



Vaccines

Influenza vaccines

Pediatric combinations &
Boosters

Meningitis

Travelers

Respiratory Syncytial
Virus (RSV)

1 standalone



Consumer Healthcare

Allergy, Cough & Cold

Pain

Digestive

Nutritionals

Sanofi acts on COVID-19



100% of manufacturing sites operational

- Maintaining production and supply to avoid shortages
- Diversity of global sourcing

Business continuity secured

- Continuous access to medicines essential to patients' needs
- Clinical trials largely maintained
- Field force fully digitally engaged

Keeping employees safe

- 20,000 employees working every day in all industrial sites
- Enacting all relevant guidelines to safeguard workforce

Sanofi takes on responsibility to fight COVID-19 by investigating therapies for patients now and...



Anti-inflammatory

Sarilumab

- Global trials ongoing
- Adaptive trial design
- Data expected imminently



Anti-viral

Hydroxychloroquine

- Studies initiated and supporting independent trials
- Committed to provide 100 million doses in 50 countries



OTC Diagnostic

Smartphone-based self-testing solution

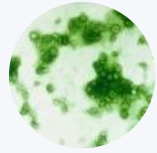
- Rapid diagnostic test to detect COVID-19 virus in development
- Leveraging Luminostics' technology
- Availability expected Q4 2020



CREATING
VACCINES,
PROTECTING
LIFE

A PORTFOLIO OF HIGH QUALITY VACCINES

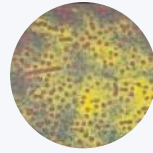
VIRAL DISEASES



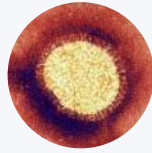
Dengue



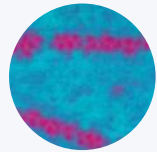
Hepatitis A



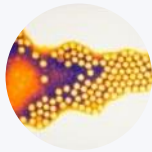
Hepatitis B



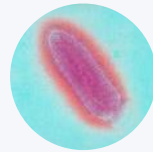
Influenza



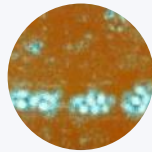
Japanese encephalitis



Poliomyelitis



Rabies



Yellow fever

BACTERIAL DISEASES



Cholera



Diphtheria



Haemophilus influenzae
type b infection



Meningococcal disease



Pertussis

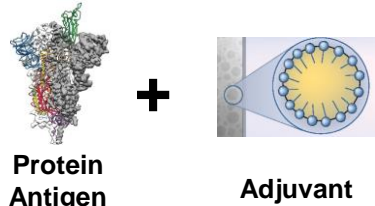
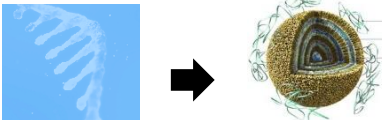



Tetanus



Typhoid Fever

...developing two complementary vaccine approaches with unparalleled pandemic capacity

Platform	<p>1</p> <p>Baculovirus recombinant vaccine approach</p>  <p>Protein Antigen + Adjuvant</p>	<p>2</p> <p>mRNA vaccine approach</p>  <p>TranslateBio mRNA Lipid nanoparticle</p>
Advantage	<ul style="list-style-type: none">• Licensed recombinant platform⁽¹⁾• Existing large scale capacity• BARDA collaboration• Collaboration with  for proven AS03 adjuvant	<ul style="list-style-type: none">• Innovative approach⁽²⁾• Potential for accelerated development• Significant existing investment in mRNA capacity to be applied towards vaccine
Expected timelines	<ul style="list-style-type: none">• FIH study start: Q4 2020• Earliest approval: H2 2021	<ul style="list-style-type: none">• FIH study start: Q4 2020• Earliest approval: H2 2021
Capacity	<ul style="list-style-type: none">• Existing capacity for 100-600 million doses• Goal to extend to >1 billion doses in 12 months⁽³⁾	<ul style="list-style-type: none">• Capacity for 90-360 million doses by H1 2021• Investigating to extend capacity significantly⁽³⁾

BARDA: Biomedical Advanced Research & Development Authority; gsk: GlaxoSmithKline; FIH: first in human

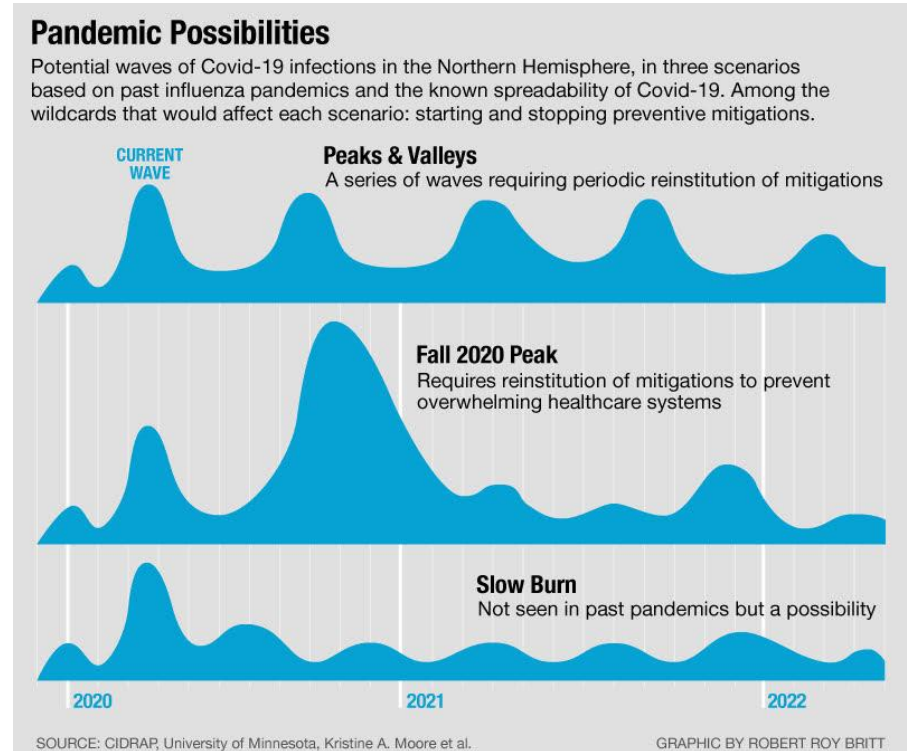
(1) Flublok® is manufactured with this platform and licensed in the U.S.

(2) In collaboration with Translate Bio

(3) Estimates pending clinical doses and industrial yields outcome

What does the future hold? Managing expectations

- There is still a lot we don't know
- Roughly 60% of SA will get infected irrespective of what we do before we develop herd immunity
- COVID-19 will be prevalent into at least 2021/22
- Mathematical Models: At the outset of this pandemic, various models were relied on to formulate policy. These models (Imperial College, Oxford, IHME, SACEMA etc.) have been proven demonstrably wrong.
- Following the course of other human coronaviruses?
 - Seasonal?
 - Duration of immunity?



Helpful Resources

- National Institute for Communicable Diseases (NICD):
 - <https://www.nicd.ac.za/>
- Returning back to work podcast (NICD):
 - <https://www.nicd.ac.za/covid-19-returning-back-to-work>
- National Institute of Occupational Health (NIOH)
 - www.nioh.ac.za
- Resource Capitalist: 7 Best COVID19 Resources
 - <https://www.visualcapitalist.com/7-best-covid-19-resources/>
- Decoding COVID Infographic
 - <https://multimedia.scmp.com/infographics/news/china/article/3075382/decoding-coronavirus-covid-19/index.html>

COVID - 19 PANDEMIC CALL CENTRES AND HOTLINES



Coronavirus Hotline: 0800 029 999	National Crisis Line: 0861 322 322	South African Police Service: 08600 10111	Reporting undue price increases: 0800 141 880	Child Line: 0800 055 555	Department of Home Affairs: 0800 601 190
Persons with Disabilities: SMS 'help' to 31531	Support to SMMEs in distress: 0860 663 7867	AIDS Helpline: 0800 012 322	Department of Trade and Industry: 080 000 6543	Suicide Helpline: 0800 567 567 OR 0800 456 789	Department of Water and Sanitation: 0800 200 200
GBVF - Related service complaints: 0800 333 177	PostBank Call Centre: 0800 53 54 55	Gender-based Violence Command centre: 0800 428 428 OR *120*7867# (free)	Department of Trade and Industry: 080 000 6543	Family Violence, Child Protection and Sexual Offences Unit: 0800 150 150	Department of Tourism: 0860 868 747
National Institute for Communicable Diseases: 0800 029 999	Women Abuse Helpline: 0800 150 150	National Human Trafficking Helpline: 0800 222 777	SASSA Call Centre: 0800 60 10 11	Presidential Hotline: 17737	<div style="font-size: 2em; font-weight: bold; margin: 0;">WE ARE HERE TO HELP</div>

WHATSAPP SUPPORT
0600 123 456
EMERGENCY NUMBER
0800 029 999
sacoronavirus.co.za


REPUBLIC OF SOUTH AFRICA



A close-up photograph of a person's hand raised in the air, palm facing forward. The hand is positioned on the left side of the frame. The person is wearing a ring on their ring finger and a wide, ornate bracelet on their wrist. The background is a blurred indoor setting with warm, ambient lighting and several bright, out-of-focus circular light sources. The text "Q&A" is centered in the middle of the image.

Q&A