VIRTUAL PRESENTATION

ISGlobal **Barcelona Institute for Global Health**

UNDP

COVID-19 POLICY REPORTS FOR RECOVERY IN THE EASTERN CARIBBEAN:
ANALYSIS, SCENARIOS AND CONSIDERATIONS FOR OPENING TO TOURISM

30 MARCH, 2021 | 10AM AST

REGISTRATION:
bit.ly/CaribbeanTourism

BARBADOS AND THE EASTERN CARIBBEAN

- Context of this report

- Situation in December 2020

- Situation now

- Scenarios analyzed: island nations then and now

- Defining a response level: transmission and health system capacity

- Informed decision about measures to implement (examples)

- Tourism proposal to BVI

CONTEXT OF THESE REPORTS

- Produced as part of UNDP COVID-19 response plan for the Eastern Caribbean

- Created October-December 2020

- In response to specific questions by countries

- Regional recommendations

- Vaccines were just starting to be rolled out
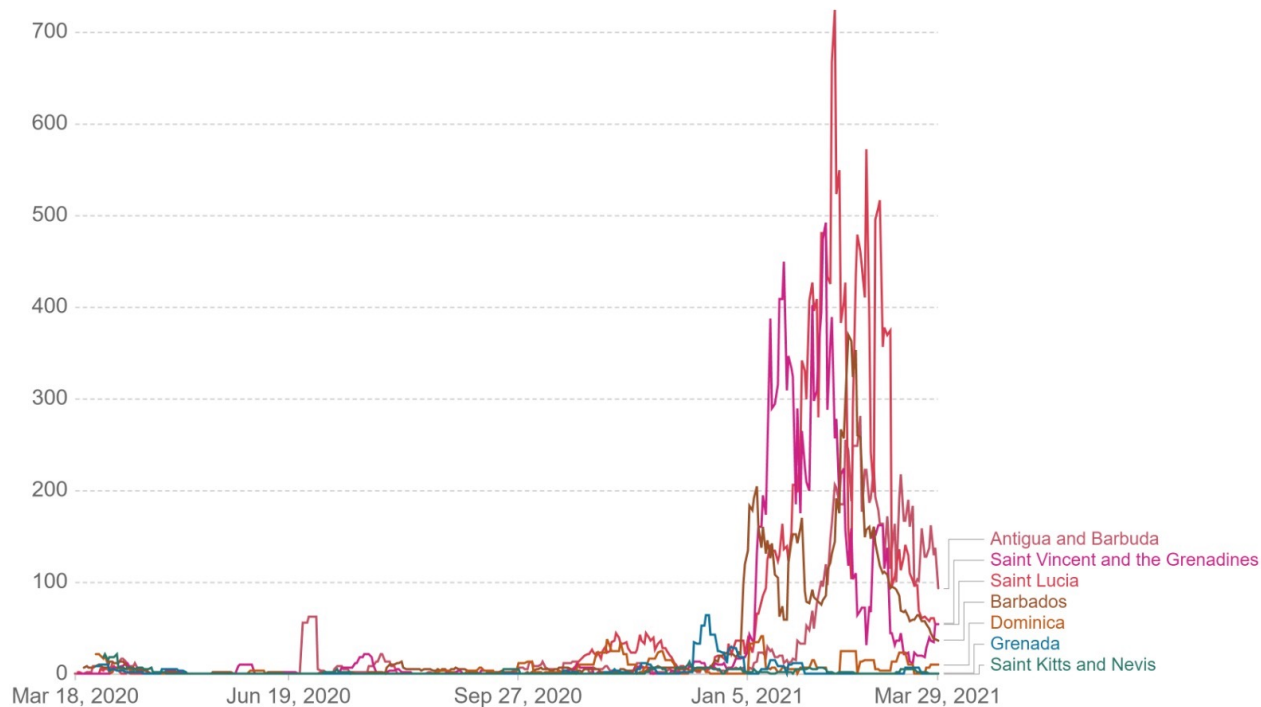
WHAT WAS THE SITUATION THEN?

By mid December 2020:

- St Lucia had reported the most cases in a single day (8)

- Barbados had the highest cumulative cases (266)

Daily new confirmed COVID-19 cases per million people
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.

Our World in Data

Antigua and Barbuda
Saint Vincent and the Grenadines
Saint Lucia
Barbados
Dominica
Grenada
Saint Kitts and Nevis

700
600
500
400
300
200
100
0

Mar 18, 2020   Jun 19, 2020   Sep 27, 2020   Jan 5, 2021   Mar 29, 2021

Source: Johns Hopkins University CSSE COVID-19 Data

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WHAT IS THE SITUATION NOW?

BARBADOS

Daily new confirmed COVID-19 cases per million people
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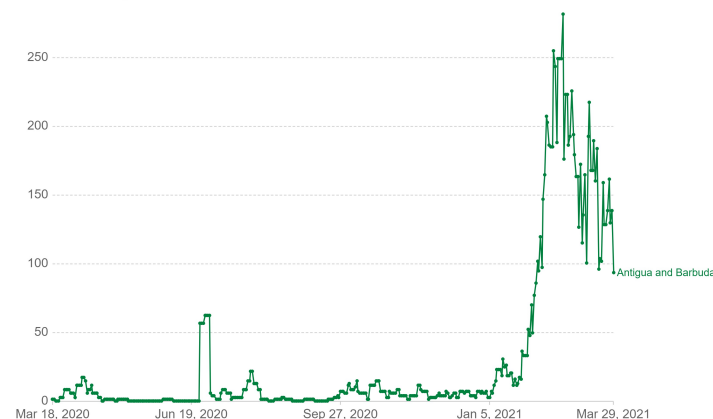

Source: Johns Hopkins University CSSE COVID-19 Data   CC BY

ANTIGUA AND BARBUDA

Daily new confirmed COVID-19 cases per million people
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.

Source: Johns Hopkins University CSSE COVID-19 Data   CC BY

ST. LUCIA

Daily new confirmed COVID-19 cases per million people
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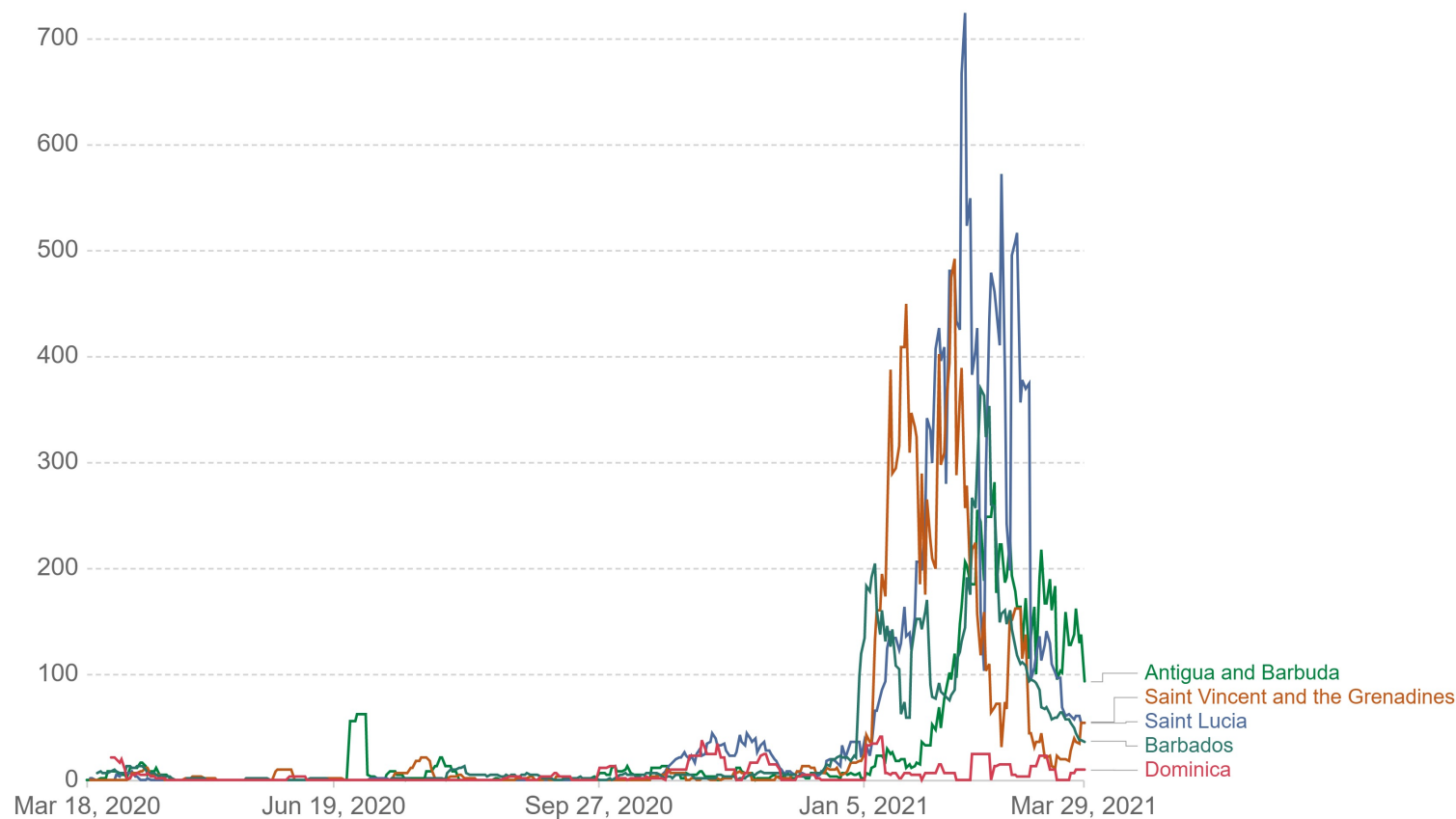Source: Johns Hopkins University CSSE COVID-19 Data   CC BY

ST. VINCENT AND THE GRENADINES

Daily new confirmed COVID-19 cases per million people
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.
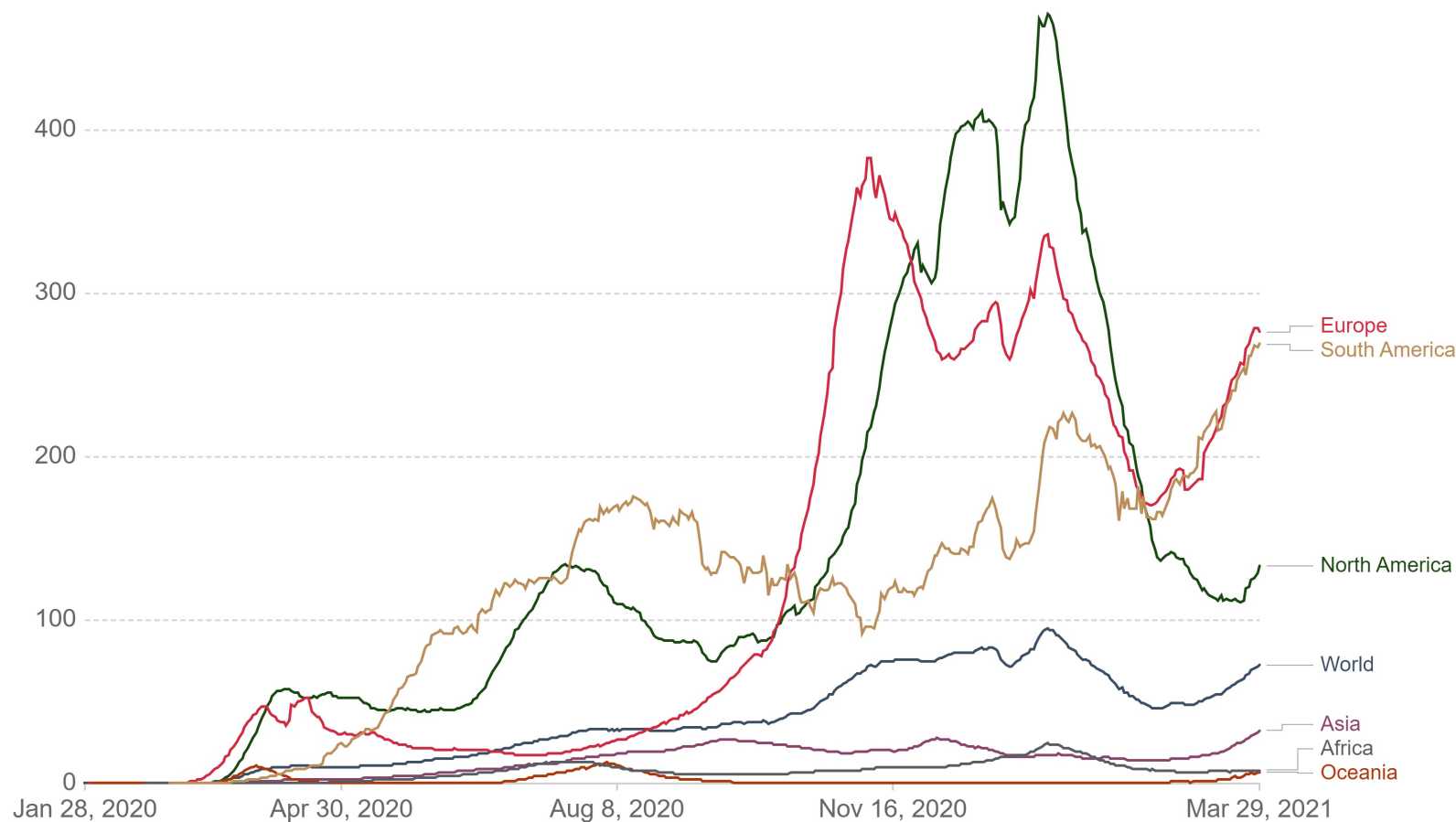

Source: Johns Hopkins University CSSE COVID-19 Data   CC BY

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Daily new confirmed COVID-19 cases per million people

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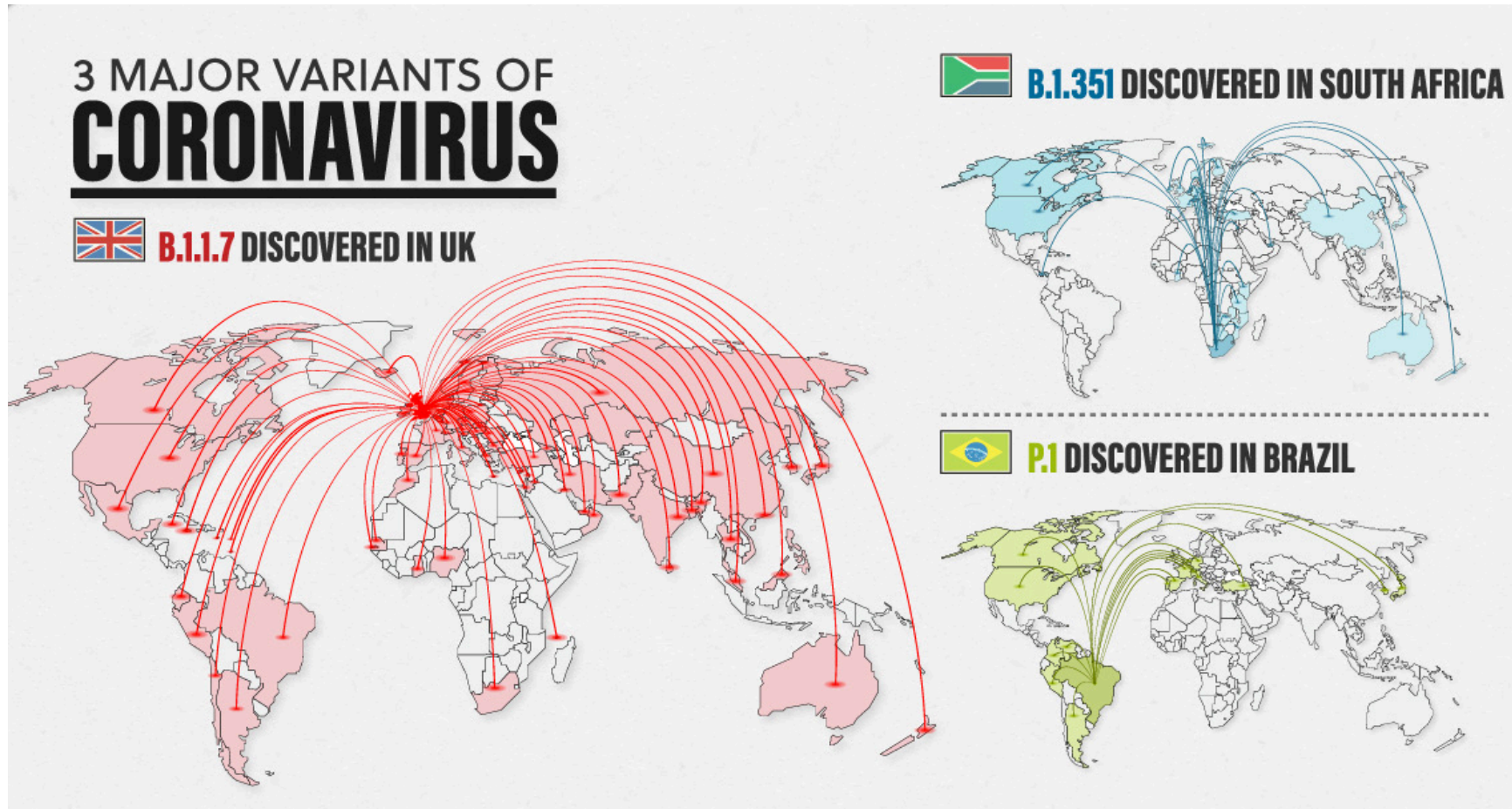
Our World in Data

Antigua and Barbuda
Saint Vincent and the Grenadines
Saint Lucia
Barbados
Dominica

700
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Mar 18, 2020   Jun 19, 2020   Sep 27, 2020   Jan 5, 2021   Mar 29, 2021

WHAT IS THE SITUATION NOW?

Daily new confirmed COVID-19 cases per million people

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Our World in Data

3 MAJOR VARIANTS OF
CORONAVIRUS

B.1.1.7 DISCOVERED IN UK

B.1.351 DISCOVERED IN SOUTH AFRICA

P.1 DISCOVERED IN BRAZIL

Source: https://www.visualcapitalist.com/the-3-major-covid-19-variants/

VARIANT OF CONCERN: B.1.1.7
FIRST DETECTED IN UNITED KINGDOM

- 30 to 75% more transmissible
- Possible increased risk of severity, hospitalization and mortality
- No significant reduction of vaccine efficacy

Figure 5. Countries, territories and areas reporting SARS-CoV-2 VOC 202012/01 as of 23 March 2021

Verification

- Verified (116)
- Under verification (9)
- Not applicable

Data Source: World Health Organization

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent

FIGURE 2. Simulated case incidence trajectories* of current SARS-CoV-2 variants and the B.1.1.7 variant,[†] assuming community vaccination[§] and initial R_t = 1.1 (A) or initial R_t = 0.9 (B) for current variants — United States, January–April 2021

Return
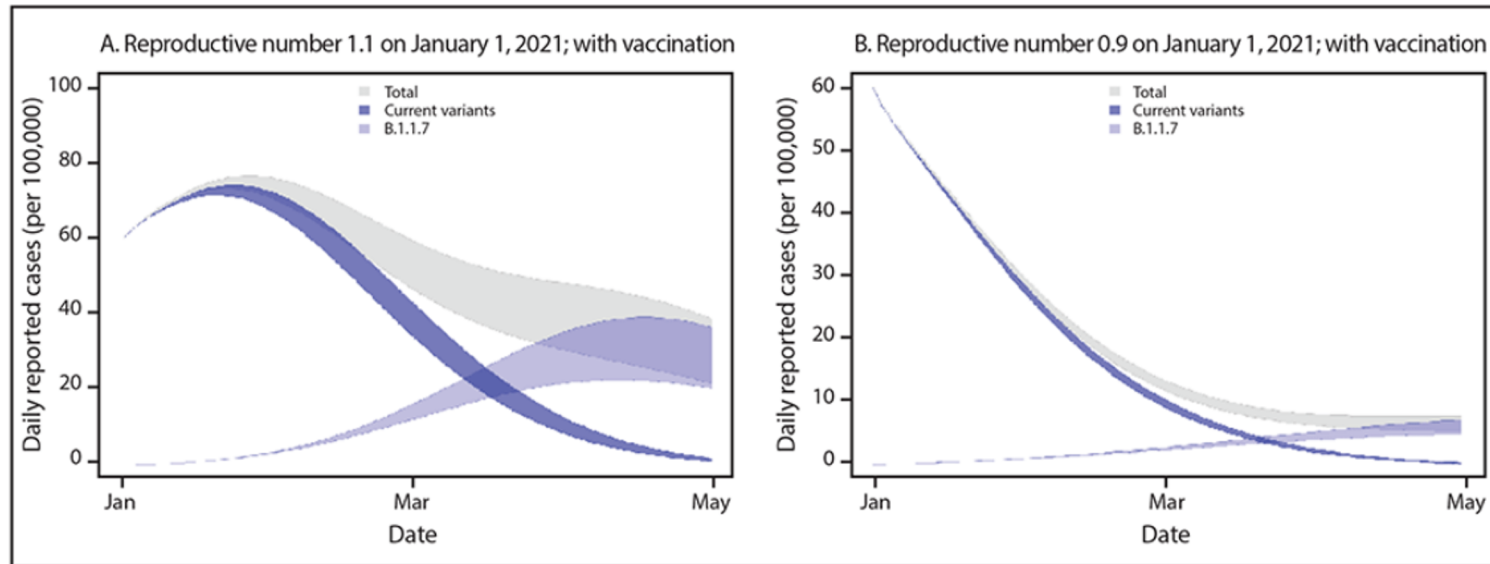
Abbreviation: R_t = time-varying reproductive number.

* For all simulations, it was assumed that the reporting rate was 25% and that persons who were seropositive or infected within the simulation became immune. The simulation was initialized with 60 reported cases of SARS-CoV-2 infection per 100,000 persons (approximately 200,000 cases per day in the U.S. population) on January 1, 2021. Bands represent simulations with 10%–30% population-level immunity as of January 1, 2021.

[†] Initial B.1.1.7 prevalence is assumed to be 0.5% among all infections and B.1.1.7 is assumed to be 50% more transmissible than current variants.

[§] For vaccination, it was assumed that 300 doses were administered per 100,000 persons per day (approximately 1 million doses per day in the U.S. population) beginning January 1, 2021, that 2 doses achieved 95% immunity against infection, and that there was a 14-day delay between vaccination and protection.

Source: https://www.cdc.gov/mmwr/volumes/70/wr/mm7003e2.htm

VARIANT OF CONCERN: B.1.351
FIRST DETECTED IN SOUTH-AFRICA

- 1.5 times more transmissible
- Possible increased risk of in-hospital mortality by 20%
- less susceptible to protection derived from prior infection from other variants and from vaccines

Figure 6. Countries, territories and areas reporting SARS-CoV-2 501Y.V2 as of 23 March 2021

Verification

Verified (60)

Under verification (15)

World Health Organization

Not applicable

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme

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VARIANT OF CONCERN: P.1
FIRST DETECTED IN BRAZIL AND JAPAN

- Increased transmission
- Modest reduction of Astrazeneca, Moderna and Pfizer vaccines. Preliminary suggestion of loss of neutralization following vaccination with Sinovac

Figure 7. Countries, territories and areas reporting SARS-CoV-2 P.1 variant as of 23 March 2021
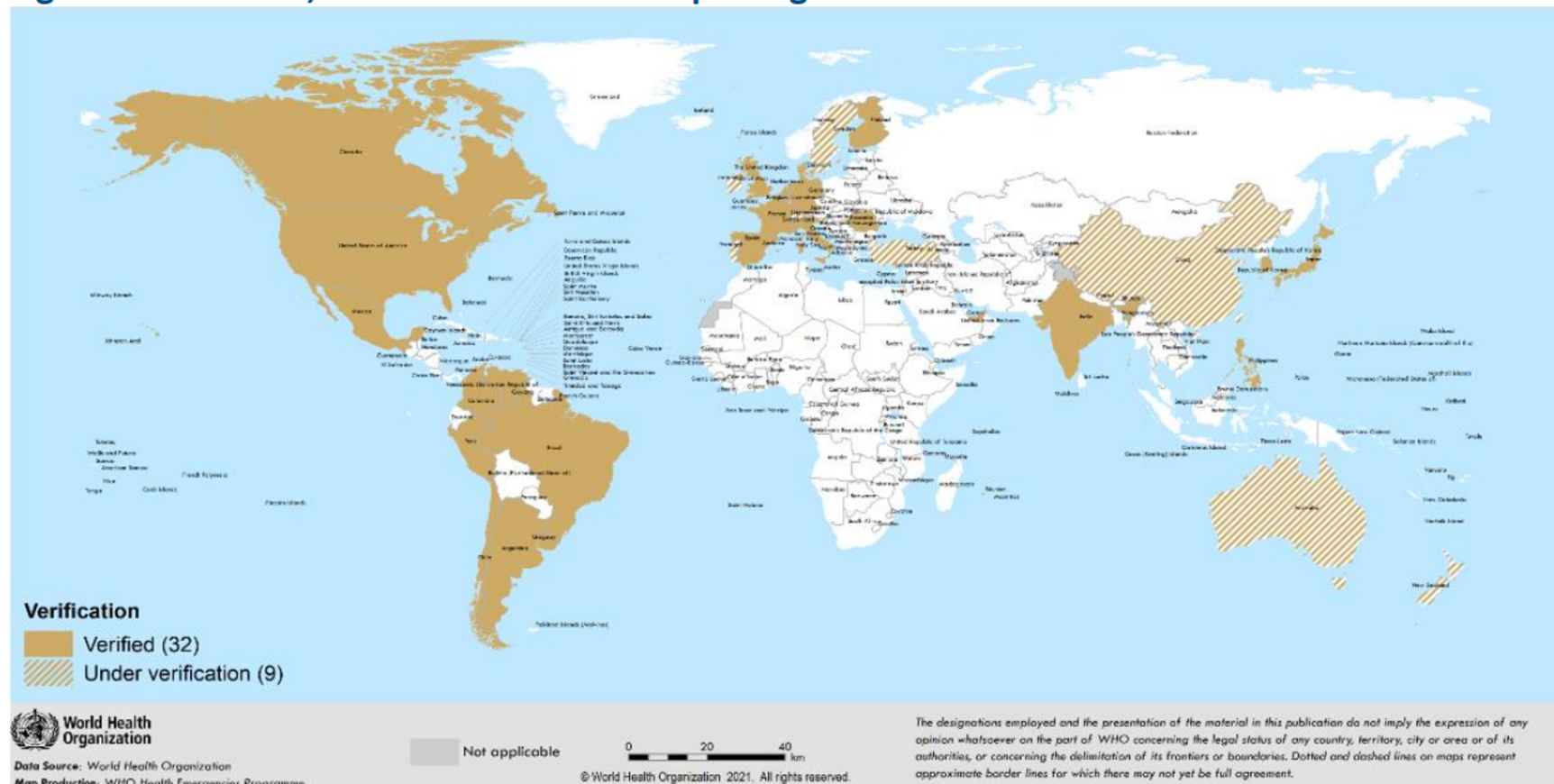
Figure 4. Proportion of SARS-CoV-2 202012/01, 501Y.V2 and P.1 variants over time in the United Kingdom, South Africa and Brazil, respectively. The estimated increase in Rt and associated 95% confidence interval is indicated below the country name.

United Kingdom (202012/01)
+41% [41% – 42%]

South Africa (501Y.V2)
+36% [32% – 40%]

Brazil (P.1)
+11% [7% – 16%]

Proportion VOC

100%

75%

50%

25%

0%

October 2020   January 2021   April 2021

October 2020   January 2021   April 2021

October 2020   January 2021   April 2021

Source: WHO weekly updates
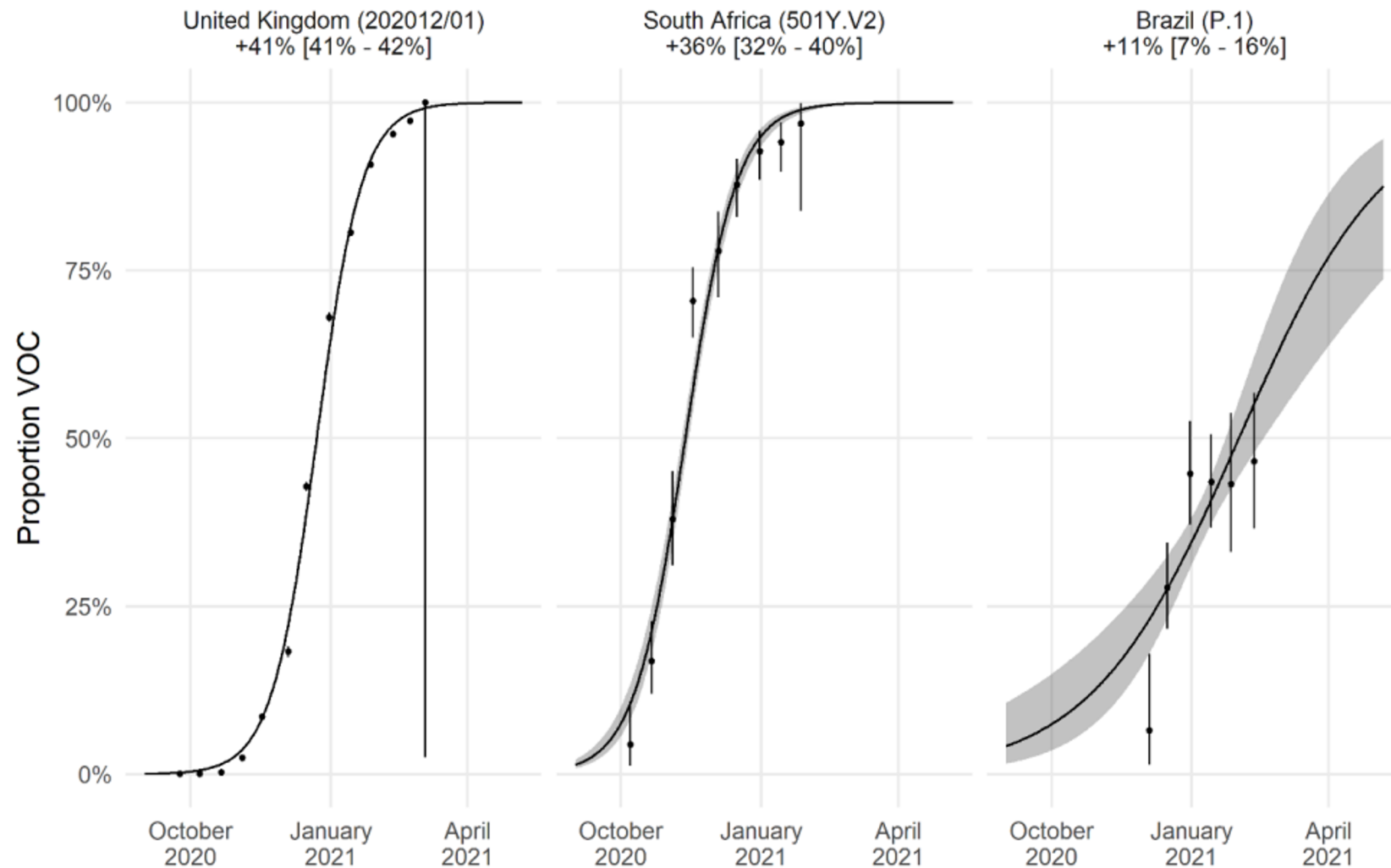
WHY HAS THE COVID-19 SITUATION WORSENED IN THE EASTERN CARIBBEAN?

- Return of tourism is unlikely to be the main contributing factors e.g. Dominica
- Introduction of variants of concern
- Christmas gatherings
- Pandemic-response fatigue
- Country-specific factors
- Vaccine effect still to be seen

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COVID-19 vaccine doses administered per 100 people

Total number of vaccination doses administered per 100 people in the total population. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).

WHAT IS THE SITUATION NOW?
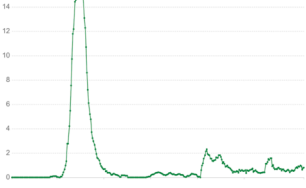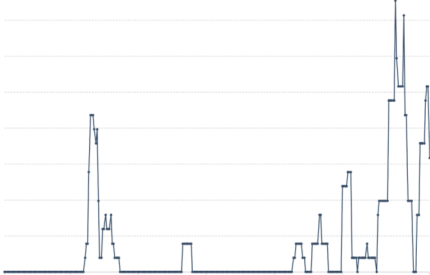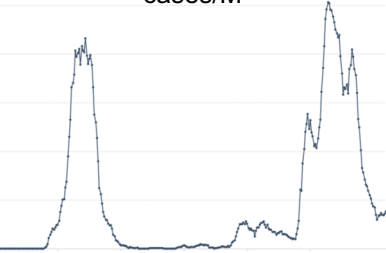
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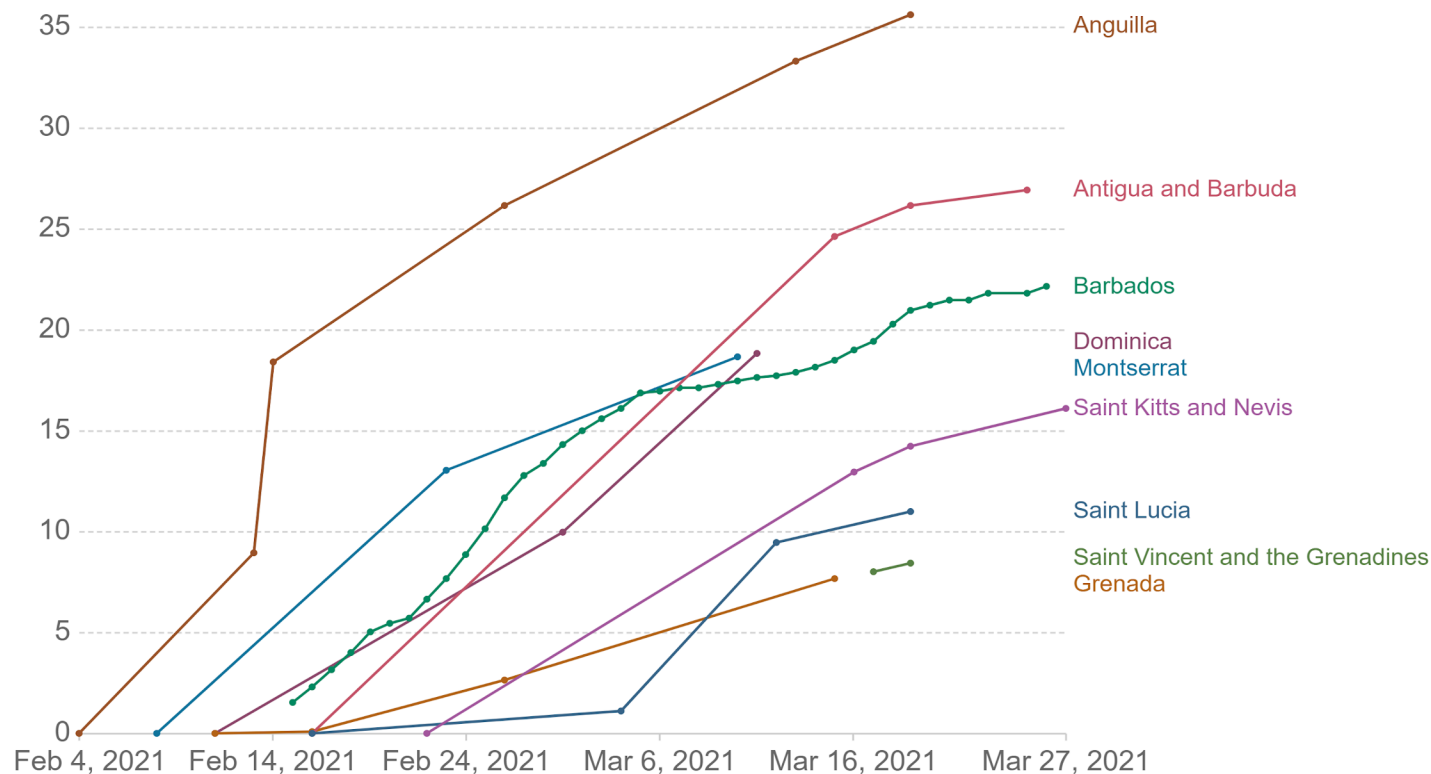
Source: Official data collated by Our World in Data

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*BVI has administered 7,000 dosis

POTENTIAL EPIDEMIOLOGICAL SCENARIOS

	New Zealand	**Dominica**	**French Polynesia**	**Iceland**
Scenario	"Sustained zero"	"Contained basal transmission"	"Epidemic transmission"	"Alternating pattern"
Epidemiological curve	Peak of incidence 15.5 cases/M	Peak of incidence 37.7 cases/M	Peak of incidence 1,681 cases/M	Peak of incidence 253 cases/M
Strategy	Zero-COVID, hard and early	Border screening, wide contact tracing and community testing	Favored re-opening to tourism with minimal restrictions	Favors tourism sector while adapting public health measures
Costs	5 deaths/M Tourism Societal: strictness	Tourism	270 deaths/M Health system collapse Economic in the long term Societal: fear of contagion	79 deaths/M Pandemic fatigue
Savings	Low health impact Economic in the long term(?) Societal: almost normal daily life	Low health impact Part of tourism sector Livelihoods depending on tourism	Part of tourism sector Part of livelihoods depending on tourism	Lower health impact than other European countries Part of tourism sector

Daily New Cases

Cases per Day
Data as of 0:00 GMT+0
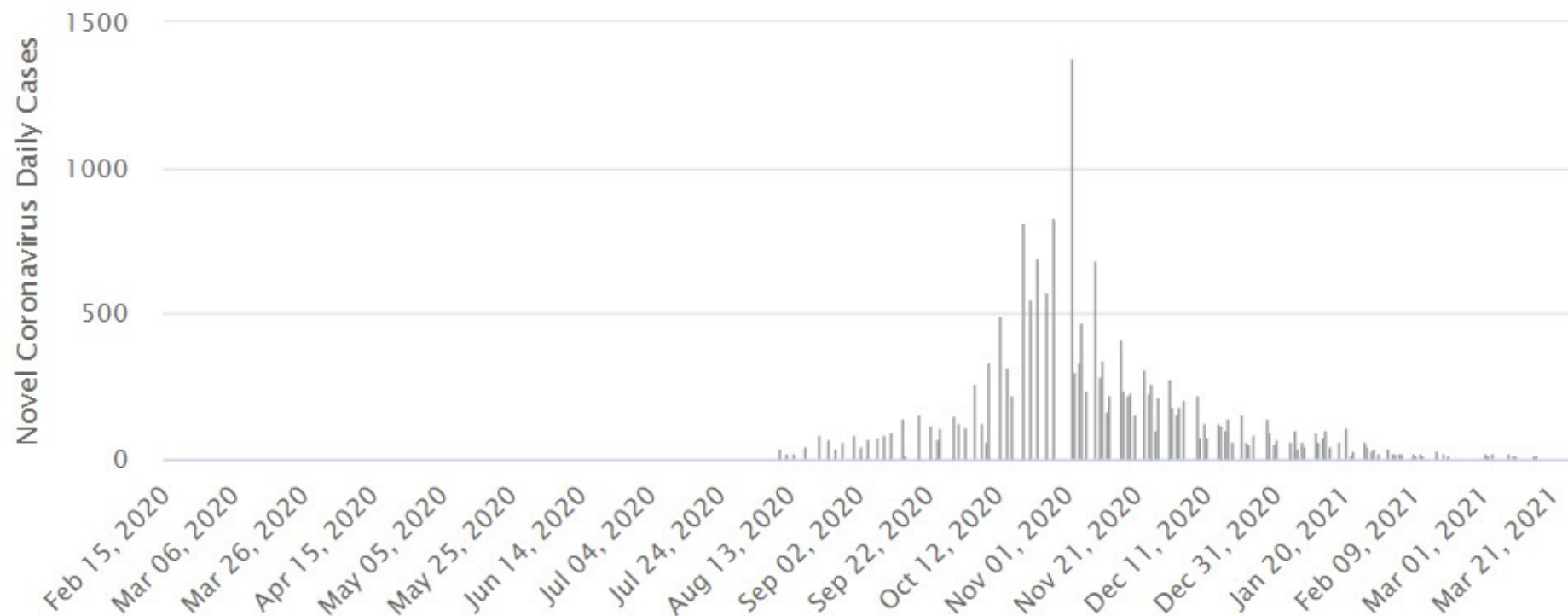
SITUATIONAL LEVELS BY WHO

"Is the epidemic controlled?"

Transmission level	Response capacity		
	Adequate	Moderate	Limited
No cases	0	0	1
Imported/Sporadic cases	0	1	1
Clusters of cases	1	1	2
Community - CT1	1	2	2
Community - CT2	2	2	3
Community - CT3	2	3	3
Community - CT4	3	3	4

"Is the health system able to detect and cope with COVID-19 cases while maintaining other essential health services?"

Domain	Indicator	Advantages/Rationale	Limitations	TRANSMISSION LEVEL CLASSIFICATION					
				No cases	Imported/Sporadic	CT1	CT2	CT3	CT4
Hospitalization Rate	New COVID19 hospitalizations per 100 000 population per week averaged over two weeks	Unlikely to be subject to surveillance policy changes/differences.	May be influenced by hospitalization policy, e.g. if even mild cases are hospitalized for isolation purposes. Delayed measure of incidence.	0	0 - <5	<5	5 - <10	10 - <30	30+
Mortality	Number of COVID-19 attributed deaths per 100 000 population per week averaged over a two-week period.	Minimally influenced by surveillance policy if testing is comprehensive.	Delayed measure of incidence. Peak of mortality occurs 15 days approximately after peak of cases. In small geographical regions can be sensitive to minor fluctuations (e.g. one versus two deaths).	0	<1	<1	1 - <2	2 - <5	5+
Case Incidence	New confirmed cases per 100 000 population per week averaged over a two-week period	Direct measure of incidence	Heavily influenced by surveillance system performance, testing policy and laboratory capacity. In small geographical regions, can be sensitive to minor fluctuations in case counts, particularly due to batch reporting.	0	<20	<20	20 - <50	50 - <150	150+

SITUATIONAL LEVELS BY WHO

*"Is the health system able to detect and cope with COVID-19 cases while maintaining other essential health services?"*

Transmission level	Response capacity		
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Community - CT1	1	2	2
Community - CT2	2	2	3
Community - CT3	2	3	3
Community - CT4	3	3	4

Domain	Indicator	Rationale	Limitations	RESPONSE CAPACITY CLASSIFICATION		
				Adequate	Moderate	Limited
Contact tracing workforce	Number of contact tracers per 100 000 population (full time)	Having enough contact tracers is key to be able to identify, isolate, test and follow contacts.	If the geography of the country is spread like in the case of islands, the numbers might be adapted to each territory, since a contact tracer might spend too many work hours travelling between territories.	>18	18-15	≤15
Contact tracing performance	Percentage of cases that are from contact lists and can be linked to known clusters	If cases can be traced back it indicates that most transmission chains have been identified, offering the opportunity for follow-up. It is a measure of the spread in the community beyond known clusters.	This may be limited by the fact that the information will certainly not have been collected at the height of the epidemic. It is heavily influenced by case investigation and contact tracing capacity.	>90%§	60% - 90%	<60%
Public health response capacity	Number of persons tested per 1000 population per week, averaged over a two-week period	Without sufficient testing, it is difficult to appropriately isolate and treat cases	Not all laboratories are able to report individuals tested. Laboratories not reporting location of cases may mask	2+	1 - <2	<1

NON-PHARMACOLOGICAL CONTROL MEASURES FOR EACH SITUATION LEVEL
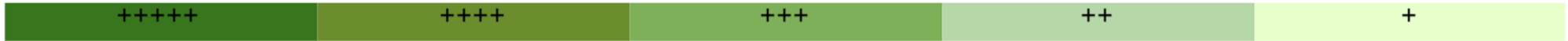
Epidemiological impact
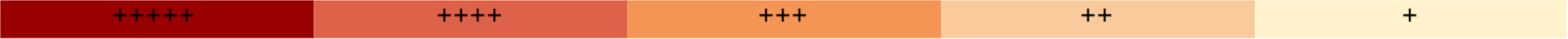
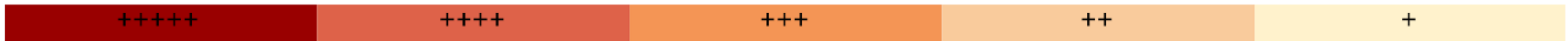| +++++	++++	+++	++	+

Societal and economic impact

+++++	++++	+++	++	+

NON-PHARMACOLOGICAL CONTROL MEASURES FOR SITUATION LEVEL 0

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Epidemiological impact

+++++	++++	+++	++	+

Societal and economic impact

+++++	++++	+++	++	+

Situational level 0 No transmission detected in the preceding 28 days and health system and public health authorities ready to respond. Surveillance should ensure that any new case can be detected and managed as early as possible.			
Potential measures	**Measure impact on transmission**	**Measure societal impact**	**Measure economic impact**
Robust surveillance in borders and sentinel centers	+++++ Essential at Level 0 to detect any imported case at borders or in the community in the sentinel centers.	+ Impact on tourists.	++ Cost of facilities and tests.
Hand washing and sanitizing available in public spaces	+++ Viable SARS-CoV-2 persists for up to 72 hours on common surface materials indoors. The relative importance of transmission through hands for SARS-CoV-2 is not known. Meta-analyses have found that 20% of respiratory illness can be prevented by all hand hygiene interventions.	+ Very simple.	+ Very cheap.

NON-PHARMACOLOGICAL CONTROL MEASURES FOR SITUATION LEVEL 1

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Epidemiological impact

+++++	++++	+++	++	+

Societal and economic impact

+++++	++++	+++	++	+
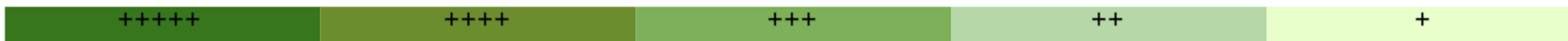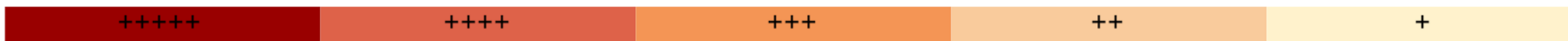
Situational level 1			
Potential measures	**Measure impact on transmission**	**Measure societal impact**	**Measure economic impact**
Contact tracing	+++++ Essential at level 1 to contain the spread.	+ Only impacted those contacts that will have to quarantine.	++ Moderate cost and taskforce.
Intensive testing (NZ) / Community testing	+++++ Allows for detection of asymptomatic or undetected clusters in the community.	+ Little impact on daily life.	+++
Promote avoidance of the '3 Cs': Closed spaces, Crowded places and Close-contact settings	+++++ Social distancing has been estimated to decrease 42.94% Rt [Bo et al].	+++ Moderate impact on daily life.	+++ Moderate impact on the economy.

NON-PHARMACOLOGICAL CONTROL MEASURES FOR SITUATION LEVEL 2

Epidemiological impact

+++++	++++	+++	++	+

Societal and economic impact

+++++	++++	+++	++	+
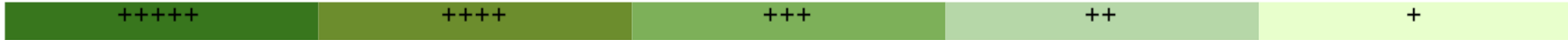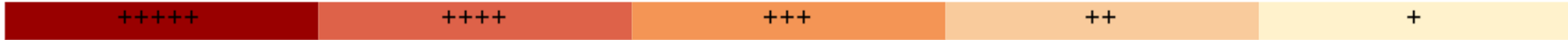
Situational level 2

Closure of indoor hosterly, while terrace service still allowed	+++ UK estimated 10-20% reduction in Rt Environmental risk in bars, pubs etc is likely to be higher than many other indoor settings due to close proximity of people, long duration of exposure, no wearing of face coverings by customers, loud talking that can generate more aerosols. Some venues are poorly ventilated, especially in winter. Consumption of alcohol impacts on behaviour.	+ Low psychological impact through reduced social contact for customers.	+++ High indirect impacts resulting from loss of income for hospitality employees.

THE SWISS CHEESE RESPIRATORY VIRUS PANDEMIC DEFENCE
RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD

PHYSICAL DISTANCE STAY HOME IF SICK
MASKS
HAND HYGIENE COUGH ETIQUETTE
AVOID TOUCHING YOUR FACE
IF CROWDED, LIMIT YOUR TIME
FAST & SENSITIVE TESTING & TRACING
VENTILATION, OUTDOORS, AIR FILTRATION
GOV'T MESSAGING & FINANCIAL SUPPORT
QUARANTINE & ISOLATION
VACCINES

PERSONAL RESPONSIBILITIES   SHARED RESPONSIBILITIES
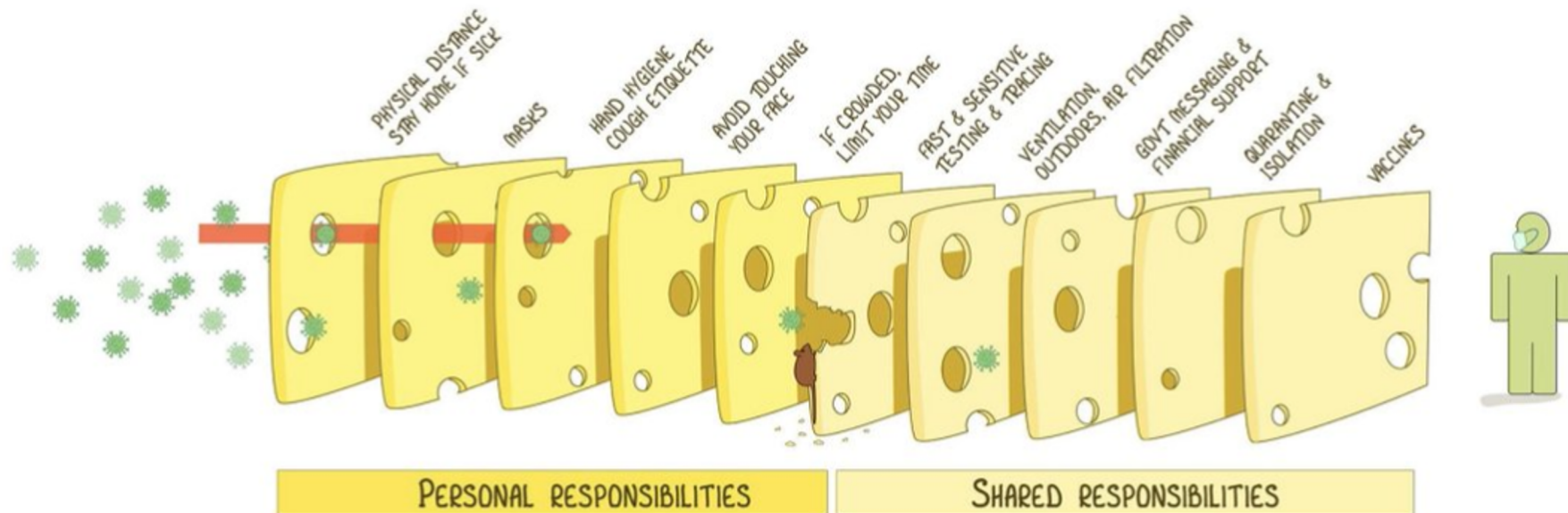
EACH INTERVENTION (LAYER) HAS IMPERFECTIONS (HOLES).
MULTIPLE LAYERS IMPROVE SUCCESS.

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

PHARMACOLOGICAL CONTROL MEASURES: VACCINES

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Strategy	Company	Reported Efficacy [1]	Storage	Number of Doses	Doses Negotiated by the EU
Messenger RNA	Moderna 🇺🇸	94%	-20°C, 4°C (1 month)	2, 4 weeks apart	160 M*
	BioNTech/Pfizer 🇩🇪 🇺🇸	95%	-70°C	2, 3 weeks apart	500 M (up to 600 M)*
	Curevac 🇩🇪	Phase 3 ongoing	4°C	2, 4 weeks apart	225 M (up to 405 M)
DNA	AnGes -Osaka University 🇯🇵	Phase 3 ongoing	Room temperature	2, 2 weeks apart	-
	Zydus Cadila 🇮🇳	Phase 3 ongoing	Room temperature	3, 4 weeks apart	-
Viral vector	AstraZeneca/Oxford (ChAd) 🇬🇧	70% (up to 90%?)	4°C	2, 4-12 weeks apart	300 M (up to 400 M)*
	Gamaleya Institute Sputnik (Ad5, Ad26) 🇷🇺	91.4%	4°C	2, 3 weeks apart	-
	CanSinoBio (Ad5) 🇨🇳	Phase 3 ongoing	4°C	1	-
	Johnson & Johnson Janssen (Ad26) 🇺🇸 🇧🇪	66%[3]	4°C	1	200 M (up to 400 M)
Protein	Novavax 🇺🇸	89.3%[2,4]	4°C	2, 3 weeks apart	-
	Medicago 🇨🇦	Phase 3 ongoing	4°C	2, 3 weeks apart	-
Inactivated virus	Sinopharm 🇨🇳	79%[2]	4°C	2, 3 weeks apart	-
	Sinovac Biotech 🇨🇳	Phase 3 ongoing	4°C	2, 2 weeks apart	-
	Bharat Biotech 🇮🇳	81%[5]	2-8°C	2, 4 weeks apart	-

"No one is safe until everyone is"

⚠ Problems with access

⚠ Difficulty in prioritization

⚠ Irruption of new variants → need of genomic surveillance

[1] Efficacy in preventing symptomatic cases in the vaccine group as compared to the placebo group.
[2] The results haven't been published yet.
[3] 57% efficacy for the South Africa variant, and 85% protection against severe disease.
[4] 95.6% efficacy for the original variant, 85.6% versus the British variant and 60% versus the South African variant (Phase 2B trial).
[5] Interim results not yet published.
* Approved for administration in the European Union.
Sources
Coronavirus Vaccine Tracker. New York Times / European Comission. Coronavirus vaccines strategy.
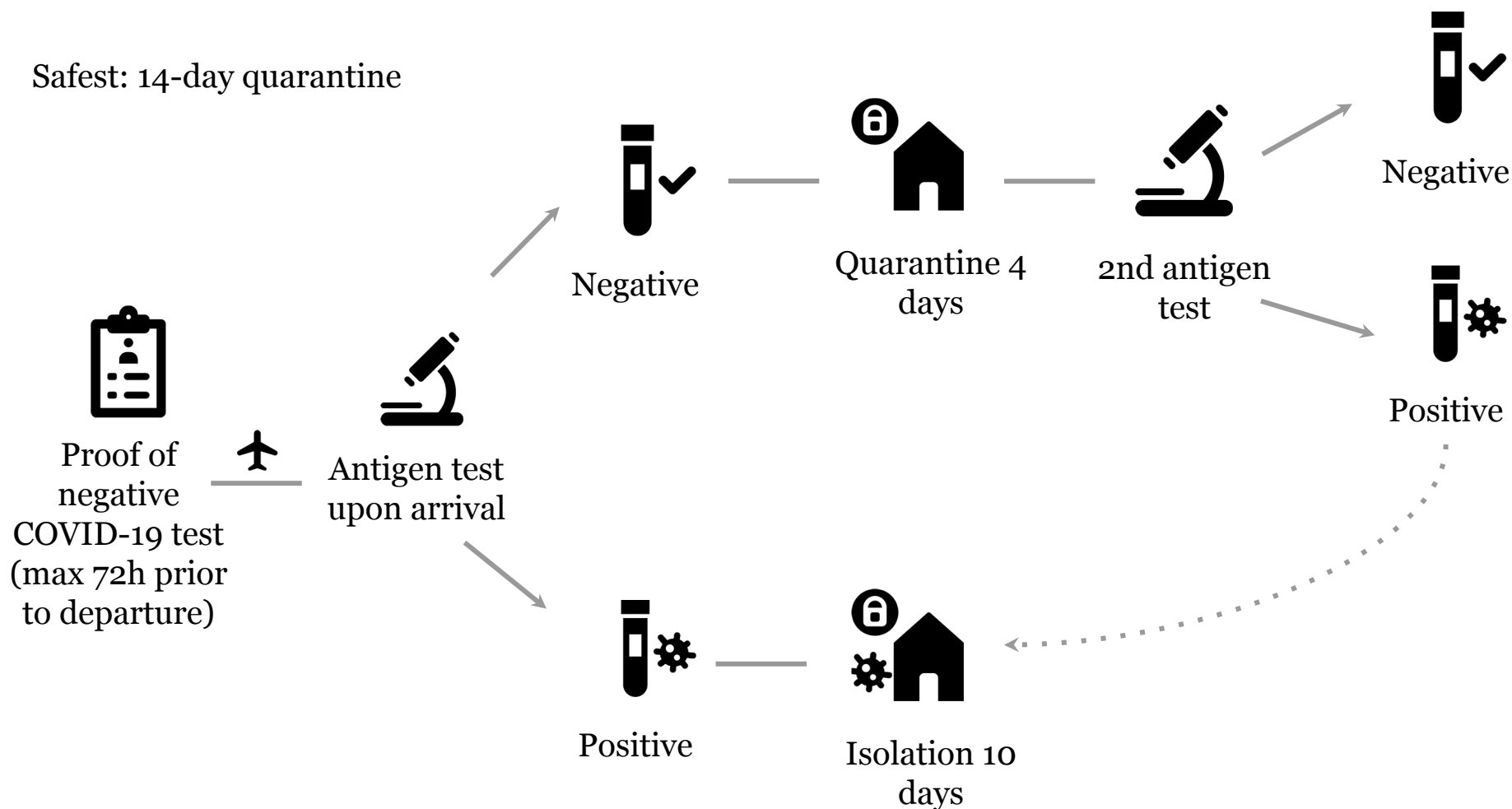
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Updated on the 4th of March

PHARMACOLOGICAL CONTROL MEASURES: PERSPECTIVES ON PROPHYLAXIS

- A preventative drug could be developed

- Would require repeated administration

- Preparedness:

    - Potentially eligible populations

    - Doses required

    - Costs for deployment

GENERAL RECOMMENDATIONS TOWARDS INCOMING TRAVELLERS

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Safest: 14-day quarantine

Proof of negative COVID-19 test (max 72h prior to departure) → Antigen test upon arrival

Negative → Quarantine 4 days → 2nd antigen test → Negative
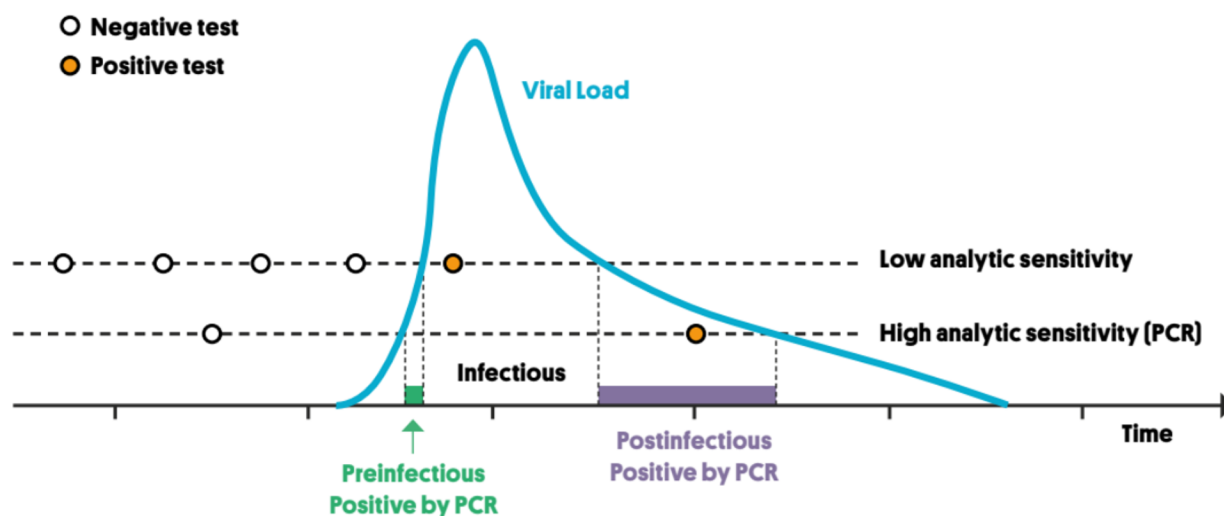
2nd antigen test → Positive

Positive → Isolation 10 days

* Looser restrictions for the CARICOM bubble

DIAGNOSTIC TESTS

Test	Basis	Sample	Analysis site	Turnaround time	Sensitivity/ specificity	Cost
PCR	Detects genetic material	Nasopharyngeal or nasal swab	Laboratory	Hours-days	Very high	High
Antigen	Detects proteins in surface of virus	Nasopharyngeal or nasal swab	Point-of-care	Few minutes	Lower sensitivity	Low

Source: https://www.nejm.org/doi/full/10.1056/NEJMp2025631

QUARANTINE LENGTH

Highest transmissibility

Symptom onset

O Negative test
● Positive test

Viral Load

Low analytic sensitivity

High analytic sensitivity (PCR)

Infectious

Preinfectious Positive by PCR

Postinfectious Positive by PCR
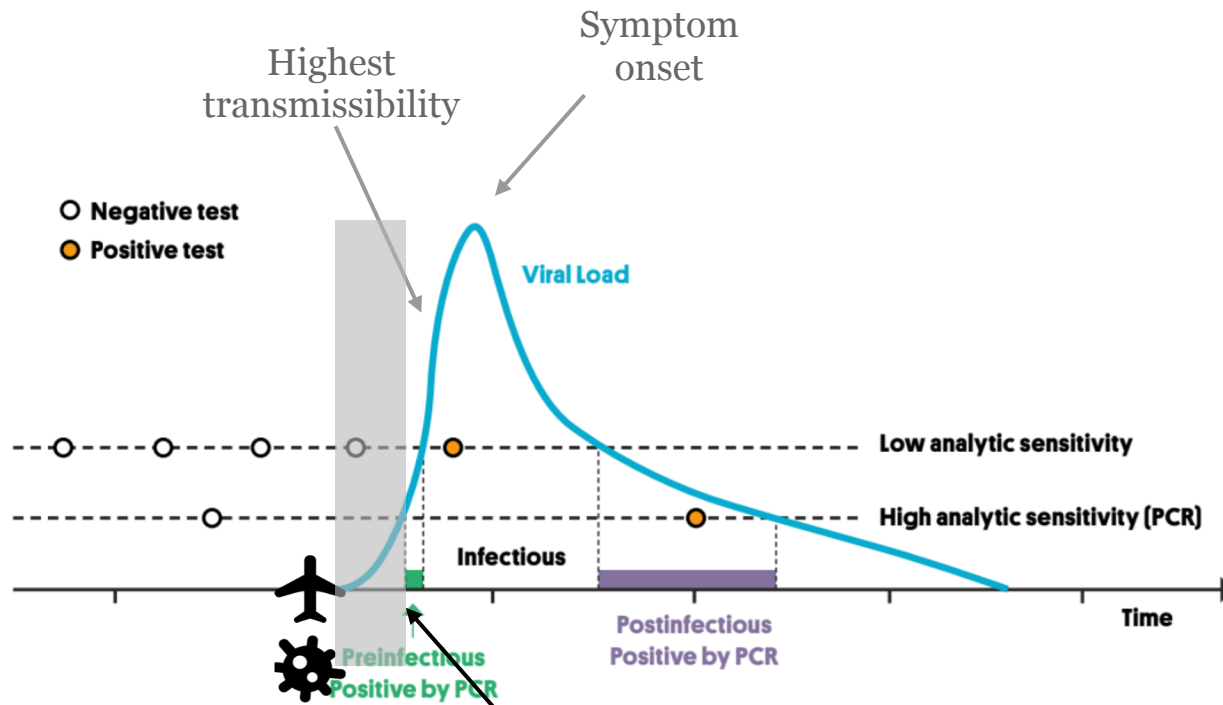
Time

The later, a person can get infected the arrival day

It would take 4 to 5 days to detect it in a PCR → quarantine

ISOLATION LENGTH

The WHO recommends:

• For **symptomatic** patients:
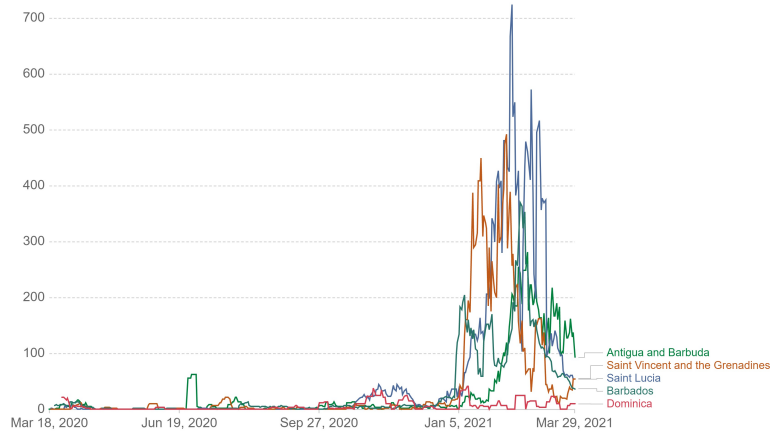
10 days after symptom onset, plus at least 3 days without symptoms

• For **asymptomatic** patients:
10 days after test positive.

FUTURE SCENARIOS?

Daily new confirmed COVID-19 cases per million people

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.
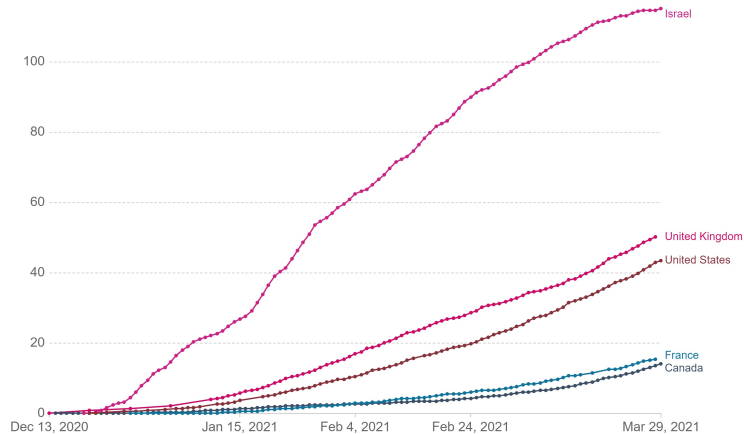

Antigua and Barbuda
Saint Vincent and the Grenadines
Saint Lucia
Barbados
Dominica

Source: Johns Hopkins University CSSE COVID-19 Data

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Daily new confirmed COVID-19 cases per million people

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.

Europe
South America
North America
World
Asia
Africa
Oceania

Source: Johns Hopkins University CSSE COVID-19 Data

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COVID-19 vaccine doses administered per 100 people

Total number of vaccination doses administered per 100 people in the total population. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).
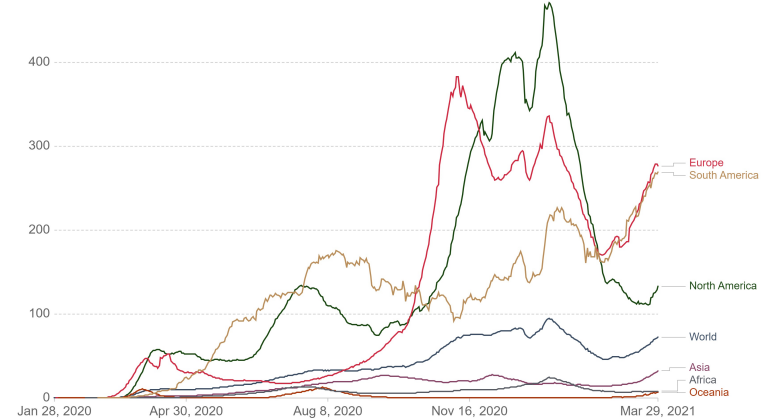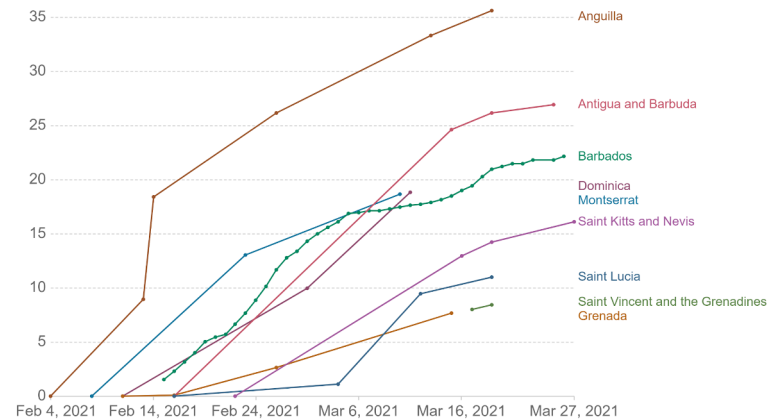

Israel
United Kingdom
United States
France
Canada

Source: Official data collated by Our World in Data

CC BY

COVID-19 vaccine doses administered per 100 people

Total number of vaccination doses administered per 100 people in the total population. This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).

Anguilla
Antigua and Barbuda
Barbados
Dominica
Montserrat
Saint Kitts and Nevis
Saint Lucia
Saint Vincent and the Grenadines
Grenada

Source: Official data collated by Our World in Data

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- Further waves?

- The impact of vaccination

- The impact of variants

- Immunity passports

- Evolution is nature´s inexorable imperative (H.G. Wells)

Snapshot of some of the attendees at the session