PHAC: COVID-19 Foundational Webinar:
SARS-CoV-2 Variants and Vaccines

Speaker: Dr. Gary Van Domselaar, Lindsay Whitmore, Eva Wong, Dr. Victoria Ng
Moderator: Dr. David Alexander

Zoom

Please use the Q&A tab to pose questions to presenters at any time
Please send technical and troubleshooting questions to nccid@umanitoba.ca
Webinar recording and slides will be available after the webinar at nccid.ca

Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

SARS-CoV-2 Variants and Vaccines

June 23 2021

PROTECTING AND EMPOWERING CANADIANS
TO IMPROVE THEIR HEALTH

Declarations of Interest

- Dr. Gary Van Domselaar - Nothing to Declare
- Lindsay Whitmore - Nothing to Declare
- Eva Wong - Nothing to Declare
- Dr. Victoria Ng - Nothing to Declare

- Moderator – Dr. David Alexander- Nothing to Declare

Objectives

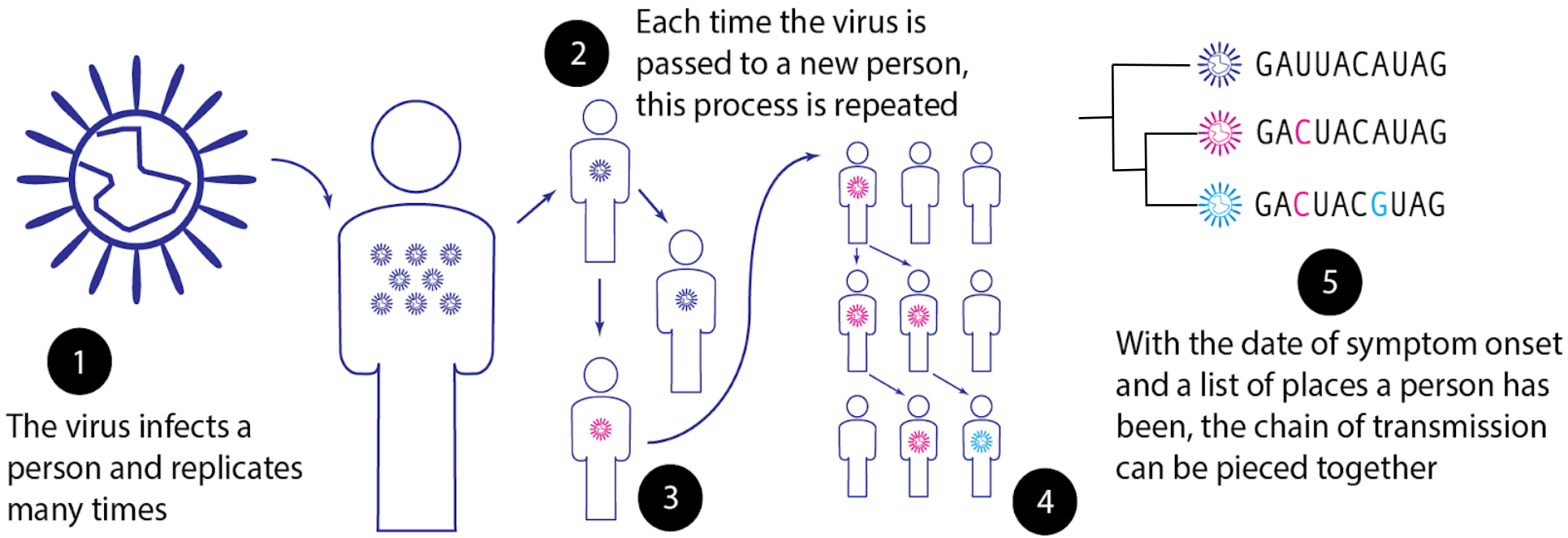
Identify the National surveillance systems that detect and track SARS-CoV-2 variants, including variants of concern (VoC), in Canada

Discuss key findings on vaccine efficacy and effectiveness against VoCs, internationally and in Canada

Summarize how predictive epidemiological models can inform Canadian forecasts and response to SARS-CoV2

VARIANTS OF CONCERN IN CANADA

Tracking Transmission with Genomics

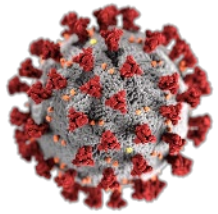


CanCOGeN

Canadian **CO**VID **Ge**nomics **N**etwork (CanCOGEN)

$40 Million, 2-Year Federal Investment through Genome Canada

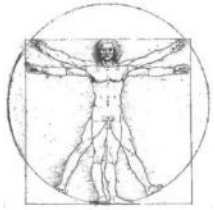
Goal: To create a national coordinated genomics-related network to address the current COVID-19 outbreak and build capacity for future outbreaks



VirusSeq

$20 Million Viral Sequencing – VirusSeq

- Goal: Large-scale, nationwide sequencing of SARS-CoV-2
- Facilitate data sharing nationally and internationally
- Perform SARS-CoV-2 Genomic Surveillance
- https://virusseq.ca

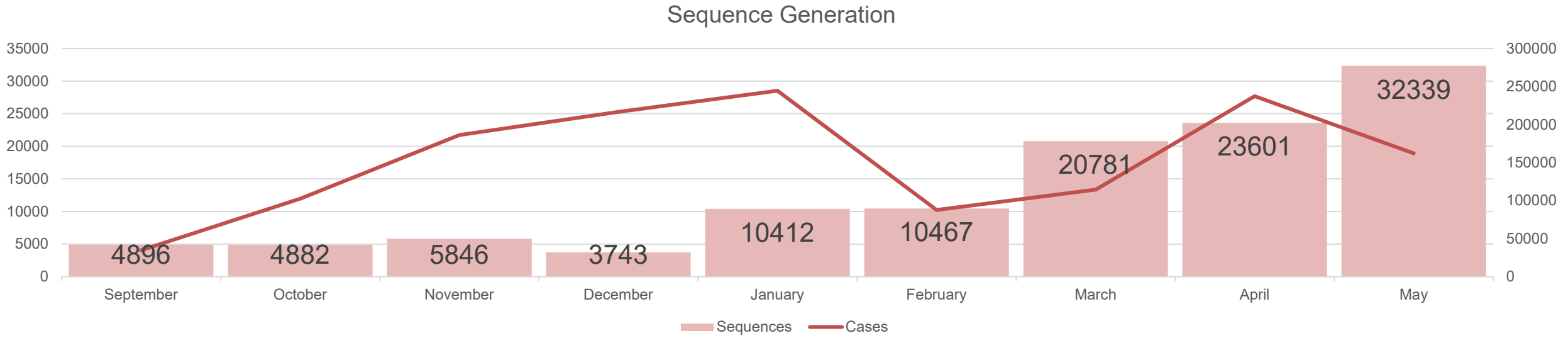


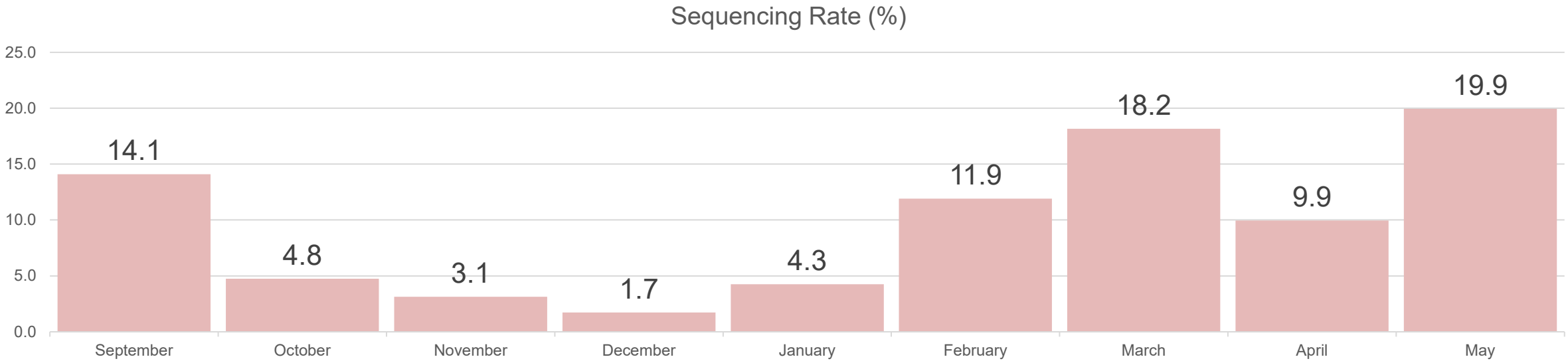
HostSeq

$20 Million Human Sequencing – HostSeq

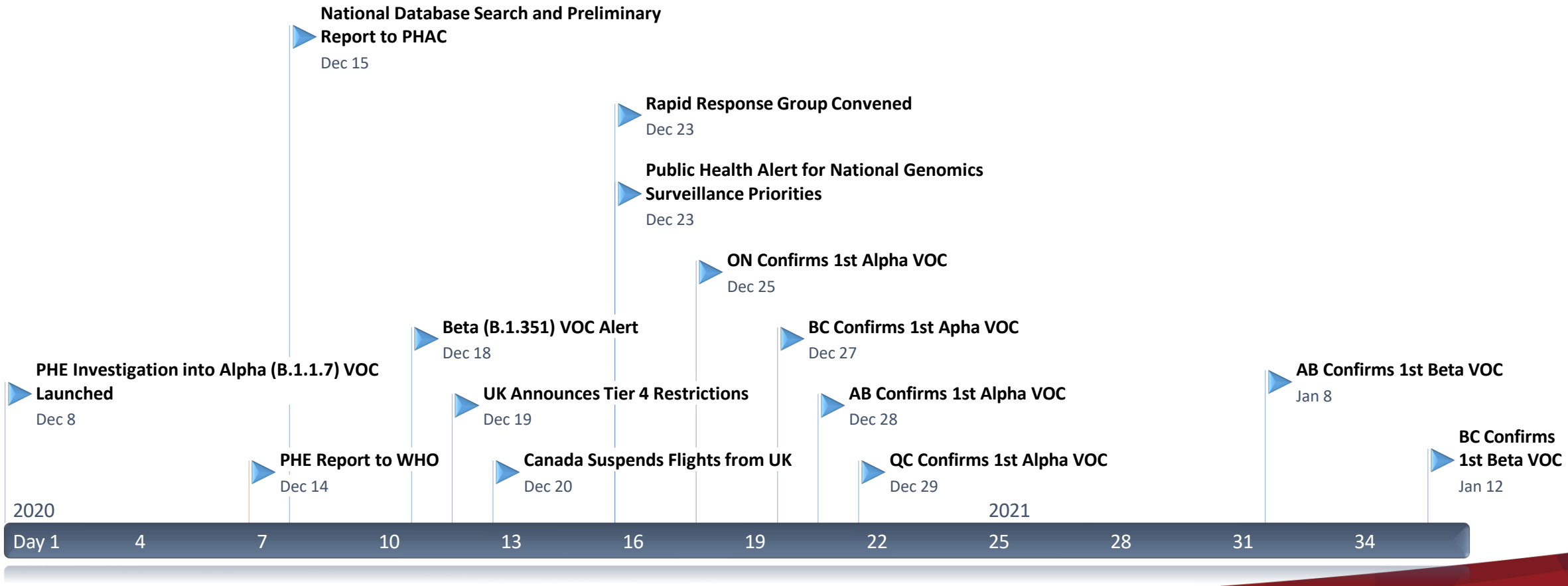
- Goal: To sequence up to 10,000 genomes of infected Canadians to allow identification of new predictive genotypes, immune-phenotypes or biomarkers of risk
- www.cgen.ca/project-overview

Total Genomes Sequenced to June 01: 111,530

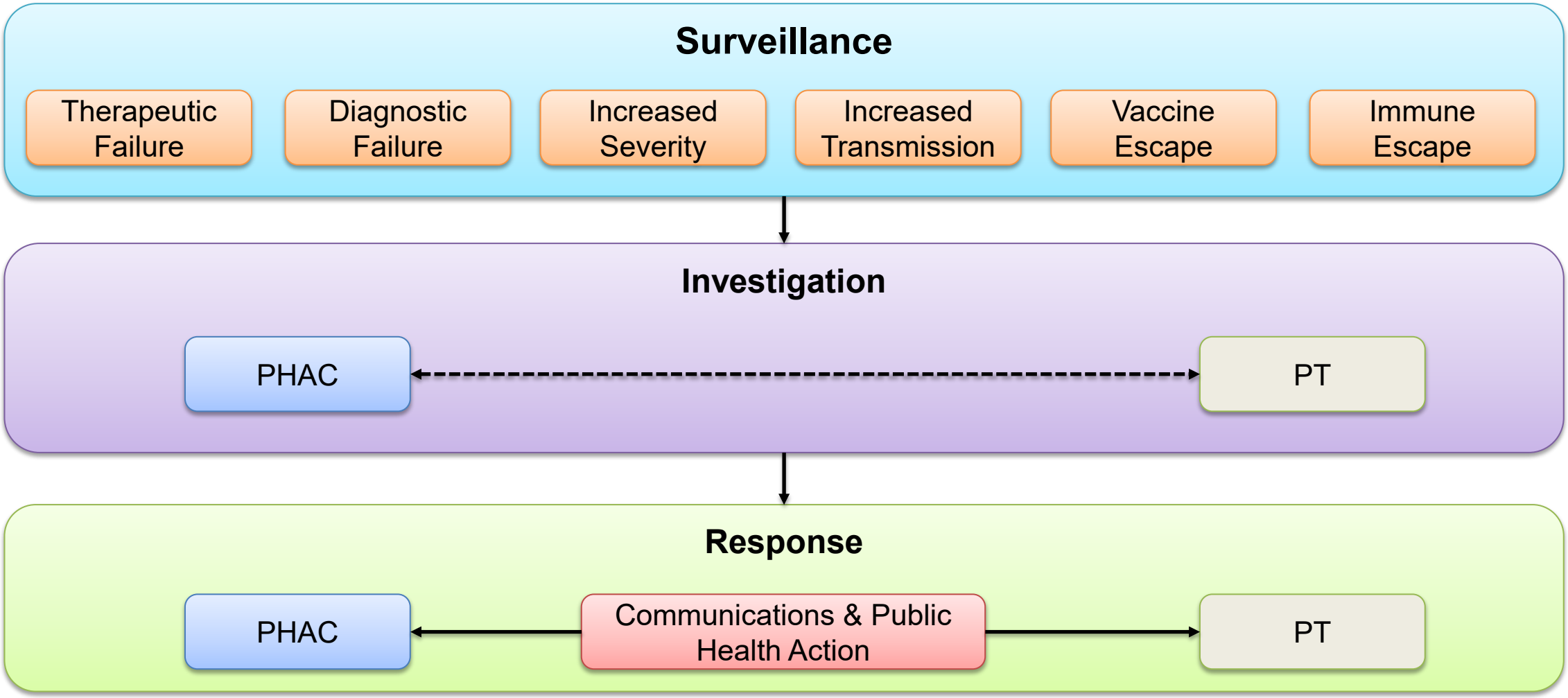




Investigation and Response to VOC in Canada



Genomic Surveillance of SARS-CoV-2



National definitions provide framework for designation

Variant of concern

A SARS-CoV-2 variant is a VOC if, through a comparative assessment, it has been demonstrated to be associated with one or more of the following:

- increased transmissibility or detrimental change in COVID-19 epidemiology;
- increased virulence or change in clinical disease presentation;
- decreased effectiveness of available diagnostics, vaccines, therapeutics, or public health measures;

or

- is otherwise assessed to be a VOC by WHO;

or

- is otherwise assessed to be a VOC by the provincial / territorial assessment group.

Variant of interest

A SARS-CoV-2 variant is a VOI if it:

- has a genome with mutations associated with changes in epidemiology, antigenicity, or virulence, or changes that potentially have a negative impact on available diagnostics, vaccines, therapeutics, or public health measures;

and

- is known to cause community transmission/multiple COVID-19 cases/clusters in Canada or has been detected in multiple countries;

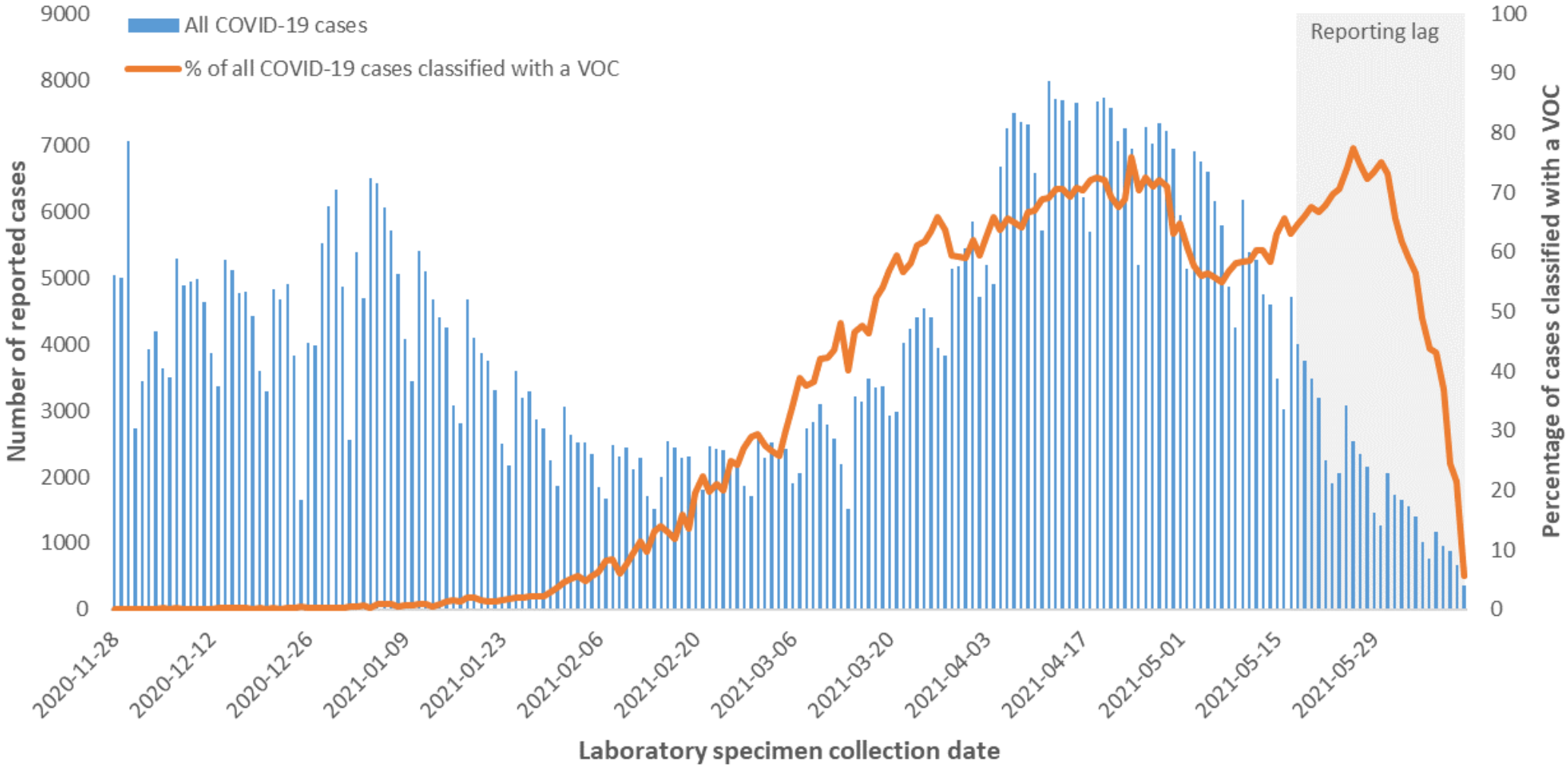
or

- is otherwise assessed to be a VOI by WHO;

or

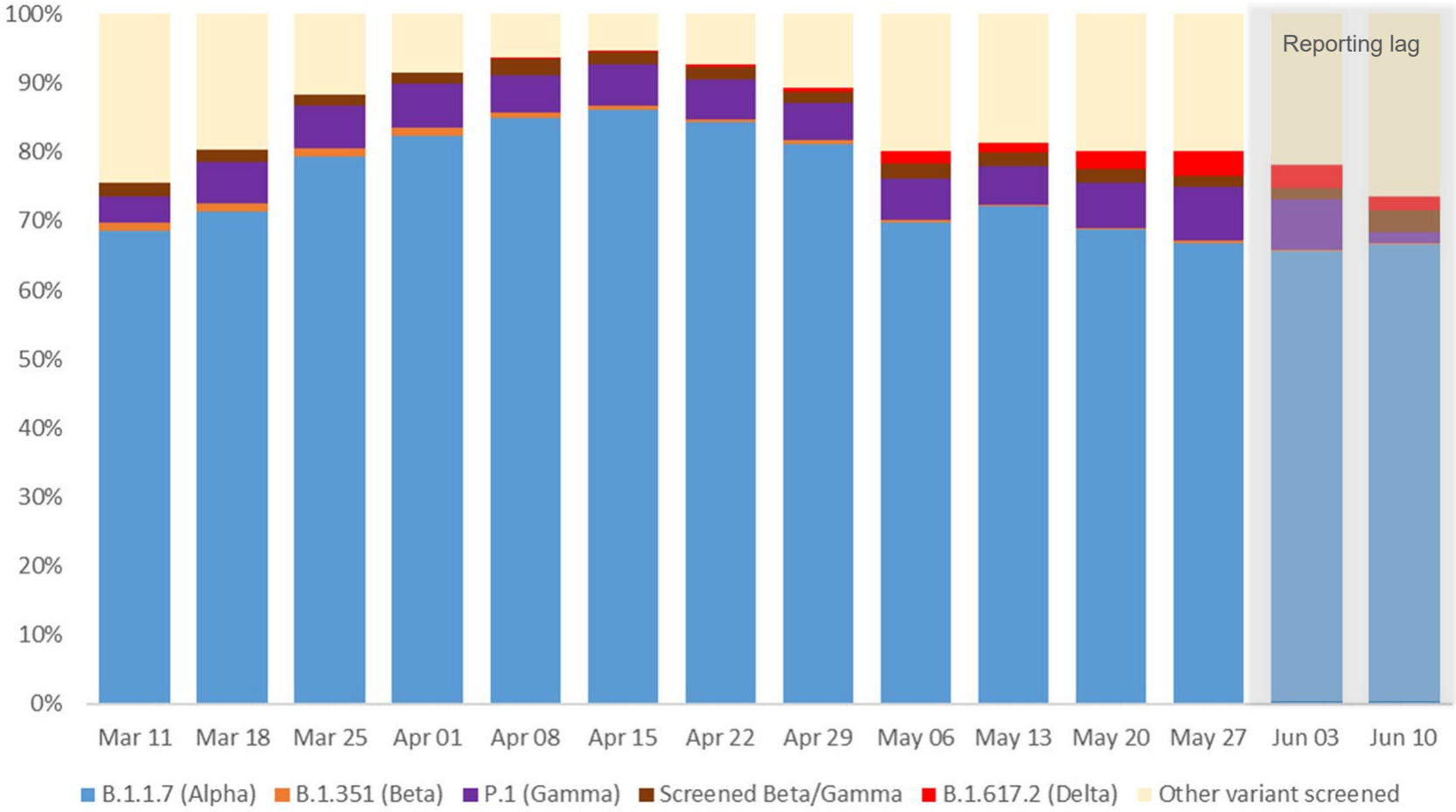
- is otherwise assessed to be a VOI by the provincial / territorial assessment group.

The proportion of cases classified as a VOC is increasing
Fluctuations are caused by changes in VOC testing



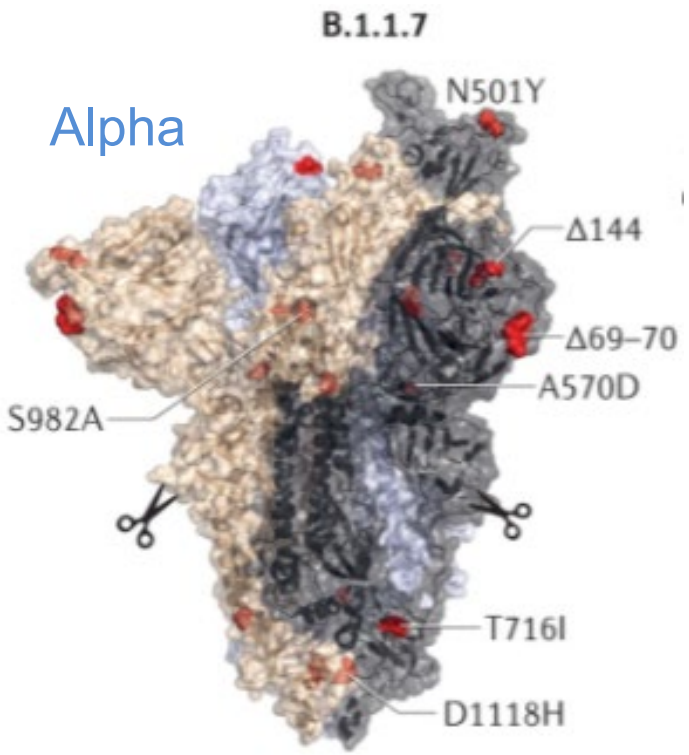
Data as of **June 14, 2021**; includes both sequence results and VOC-specific screening results for B.1.1.7 (Alpha), B.1.351 (Beta), B.1.617.2 (Delta), and P.1 (Gamma)

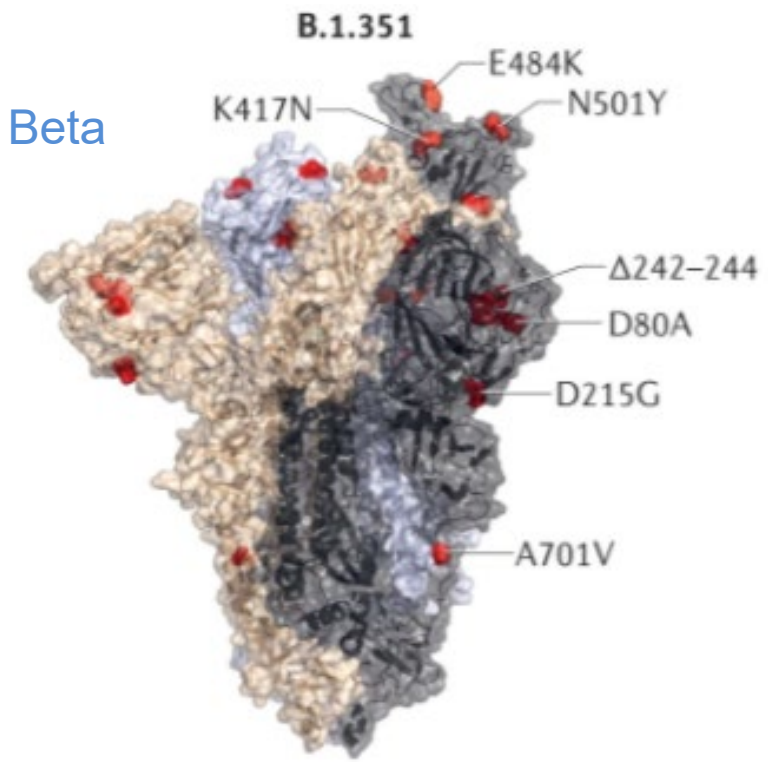
The proportion of B.1.1.7 (Alpha) cases continues to decline while P.1 (Gamma) and B.1.617.2 (Delta) are increasing.

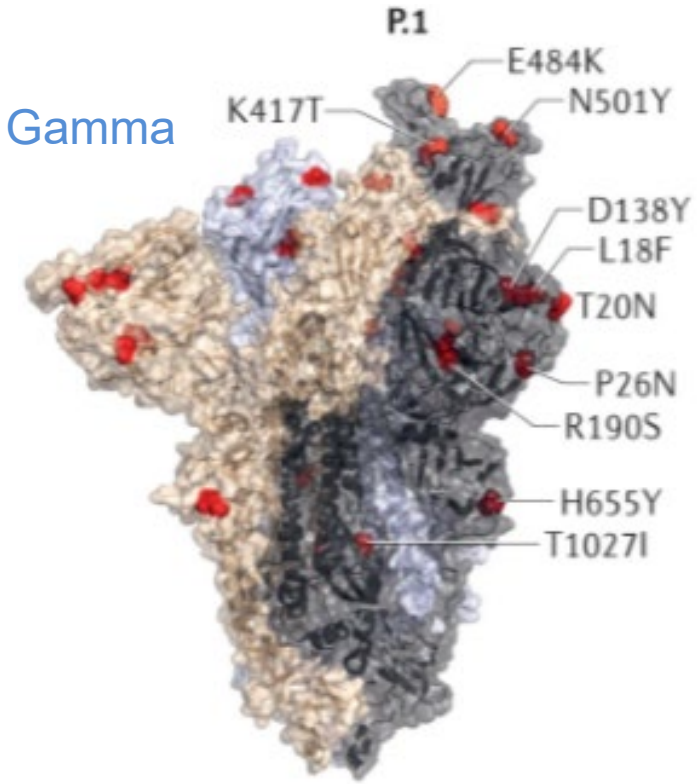


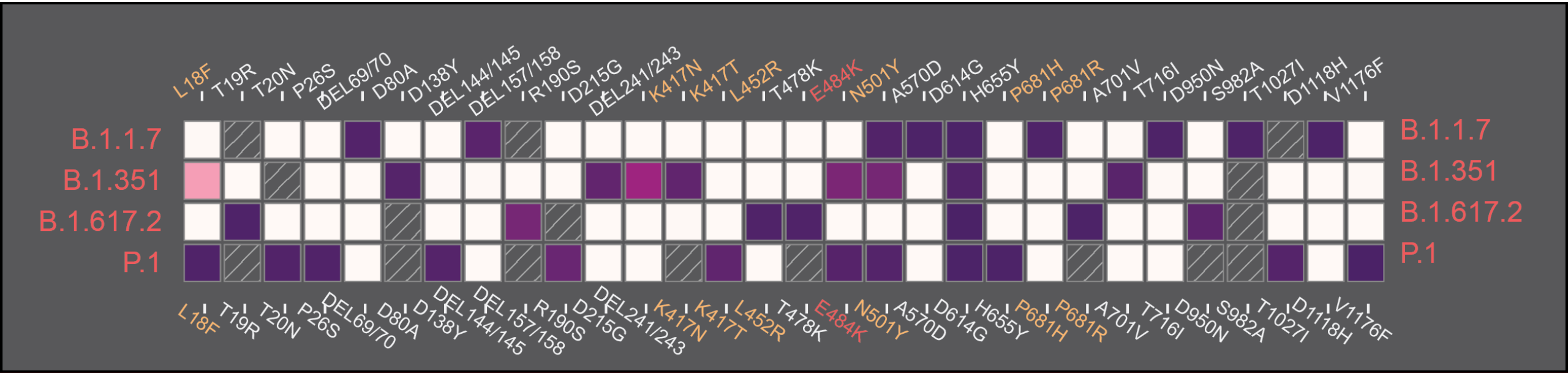
Data as of **June 14, 2021**; includes both sequence results and VOC-specific screening results for B.1.1.7 (Alpha), B.1.351 (Beta), B.1.617 (Delta), and P.1 (Gamma). “Other variant screened” indicates cases where the screening result provided does not distinguish any of the four current VOCs.

- Cases of B.1.617.2 (Delta) continue to increase nationally
  - The 20-39 age group is the most impacted group with 45% of cases.
  - Over one third of B.1.617.2 (Delta) cases are likely the result of community transmission
- A greater proportion of B.1.617.2 (Delta) cases (9.2%) report being hospitalized compared to B.1.1.7 (Alpha) cases (5.3%).
- Early estimates based on limited data demonstrate that a greater proportion of B.1.617.2 (Delta) cases are partially vaccinated (one dose) and/or fully vaccinated (two doses) compared to B.1.1.7 cases (Alpha).


B.1.1.7
Alpha
N501Y
Δ144
Δ69–70
A570D
S982A
T716I
D1118H


B.1.351
Beta
E484K
K417N
N501Y
Δ242–244
D80A
D215G
A701V

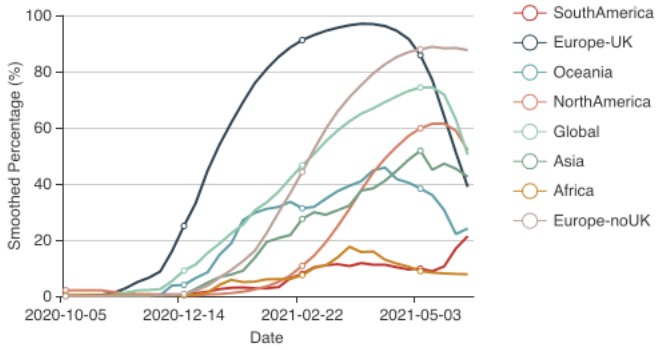

P.1
Gamma
E484K
K417T
N501Y
D138Y
L18F
T20N
P26N
R190S
H655Y
T1027I


L18F
T19R
T20N
P26S
DEL69/70
D80A
D138Y
DEL144/145
DEL157/158
R190S
D215G
DEL241/243
K417N
K417T
L452R
T478K
E484K
N501Y
A570D
D614G
H655Y
P681H
P681R
A701V
T716I
D950N
S982A
T1027I
D1118H
V1176F
B.1.1.7
B.1.351
B.1.617.2
P.1

VACCINE IMPACT ON VARIANTS OF CONCERN

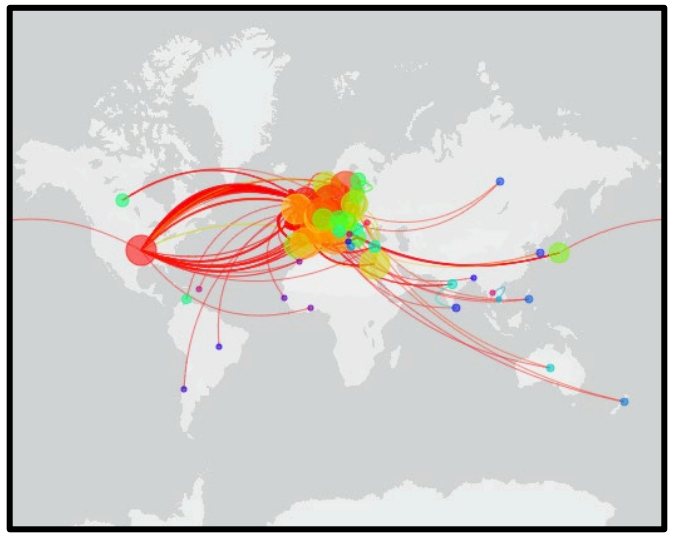
B.1.1.7 (Alpha) - Spread

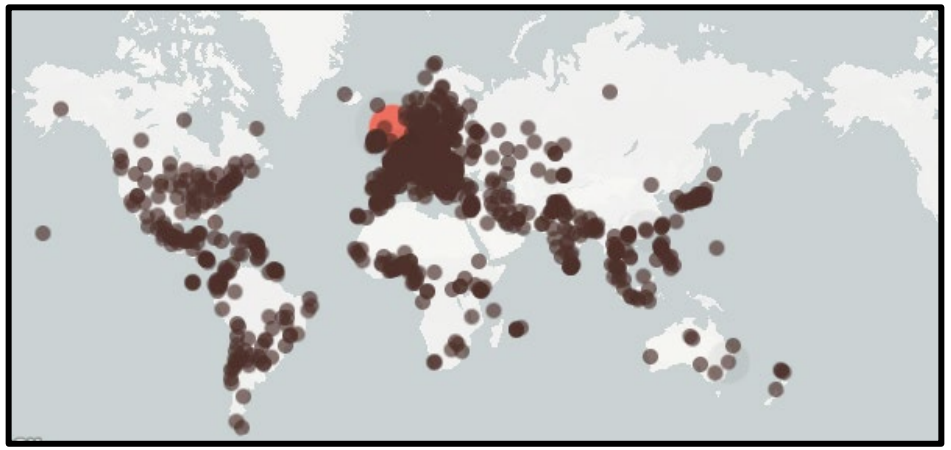
Relative variant genome frequency per region



Countries involved in pivotal phase 3 vaccine trials

Country	Total incidence (count)	Incidence in past 4 weeks (count)	Incidence in past 4 weeks (%)
United Kingdom	251,230	8,043	30.2
USA	163,729	10,365	63.9
Germany	92,296	8,575	92.5
France	27,078	882	80.1
Canada	7,568	0	0
Israel	7,604	0	0
Japan	11,706	20	28.6
Brazil	333	4	1.3
Mexico	529	97	19.3
Colombia	75	0	0
South Africa	38	0	0
Peru	3	0	0
Argentina	123	0	0
China	90	16	66.7

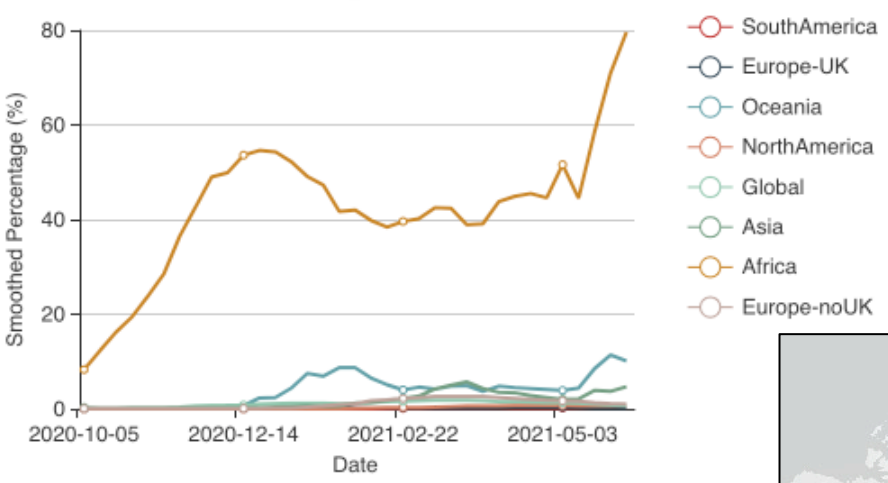




https://www.gisaid.org/hcov19-variants/ *(Accessed **June 9** 2021)*

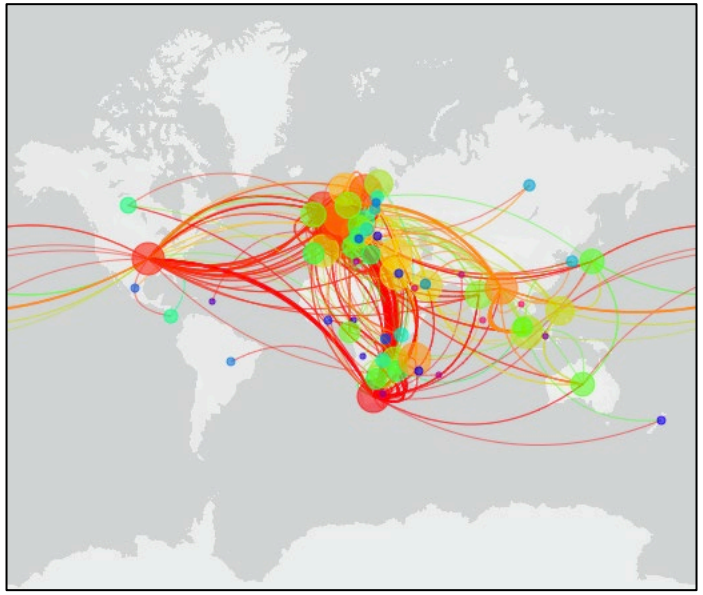
B.1.351 (Beta) - Spread

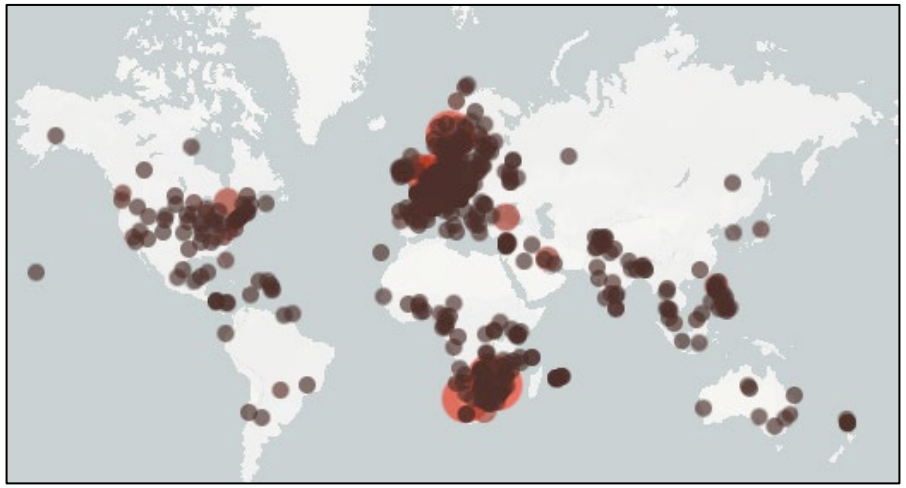
Relative variant genome frequency per region



Countries involved in pivotal phase 3 vaccine trials

Country	Total incidence (count)	Incidence in past 4 weeks (count)	Incidence in past 4 weeks (%)
South Africa	4,169	0	0
USA	2,081	89	0.5
Germany	2,073	91	1
France	1,667	48	4.4
Canada	629	0	0
United Kingdom	624	17	0.1
Israel	229	0	0
Japan	69	8	11.4
China	30	1	4.2
Mexico	13	1	0.2
Brazil	5	0	0
Argentina	1	0	0
Peru	0	0	0

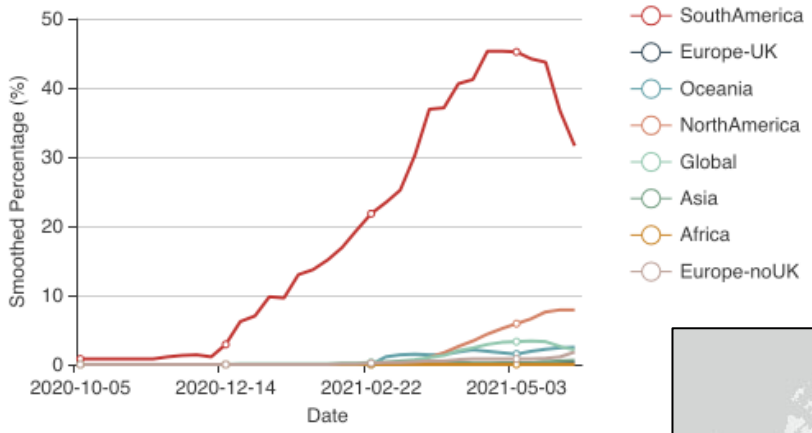




https://www.gisaid.org/hcov19-variants/ (Accessed **June 9** 2021)

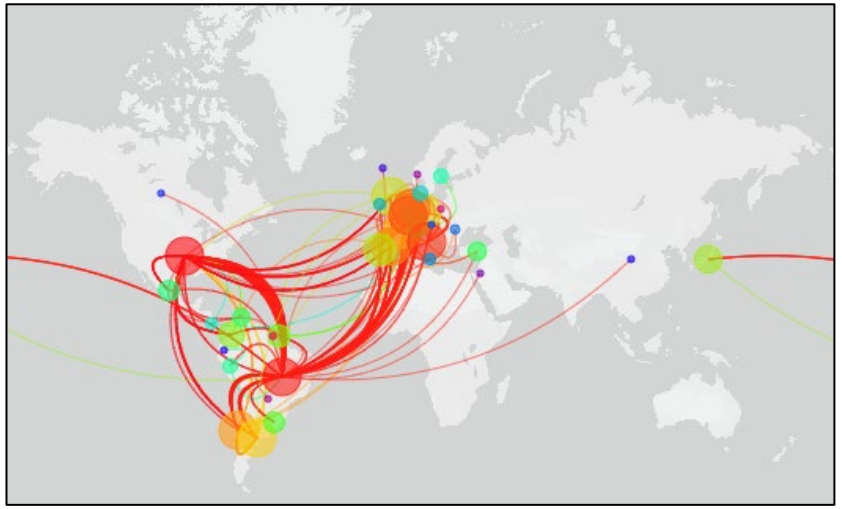
B.1.1.28/P.1 (Gamma) - Spread

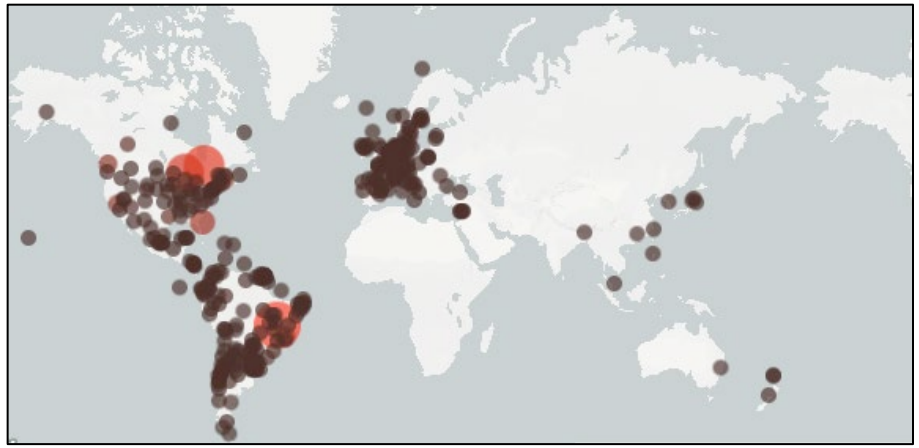
Relative variant genome frequency per region



Countries involved in pivotal phase 3 vaccine trials

Country	Total incidence (count)	Incidence in past 4 weeks (count)	Incidence in past 4 weeks (%)
USA	12,427	1,519	9.4
Brazil	5,711	163	51.3
Canada	2,956	0	0
Argentina	222	7	12.7
France	198	10	0.9
Colombia	171	0	0
United Kingdom	139	18	0.1
Germany	112	20	0.2
Japan	102	2	2.9
Mexico	84	0	0
Peru	25	0	0
Israel	4	0	0
China	2	0	0
South Africa	0	0	0

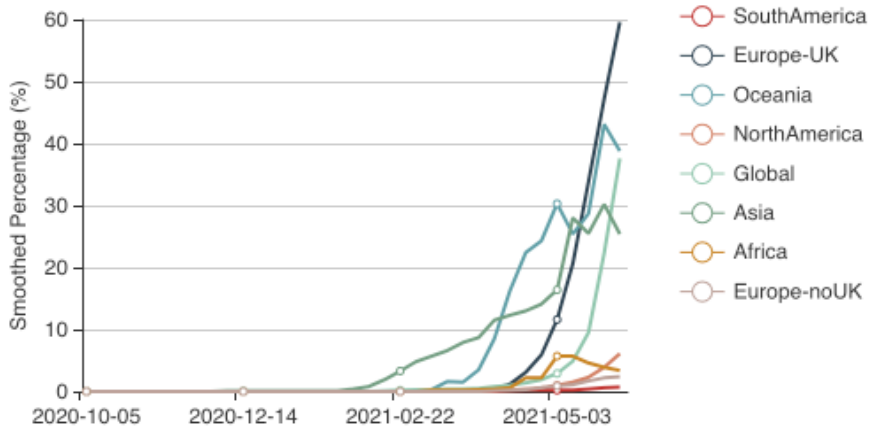




https://www.gisaid.org/hcov19-variants/ *(Accessed June 9 2021)*

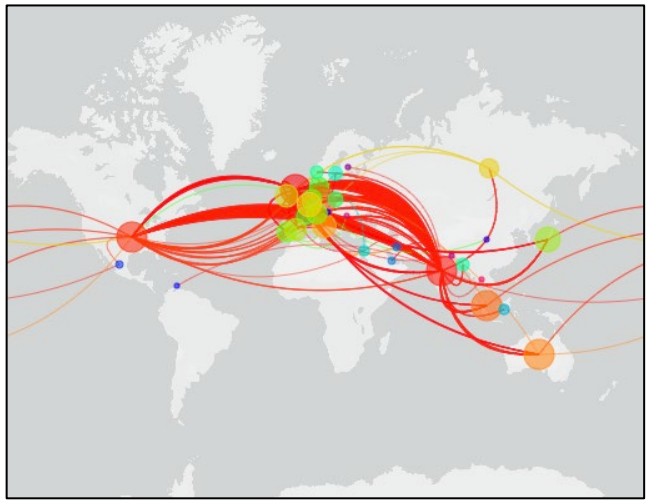
B.1.16.72 (Delta)- Spread

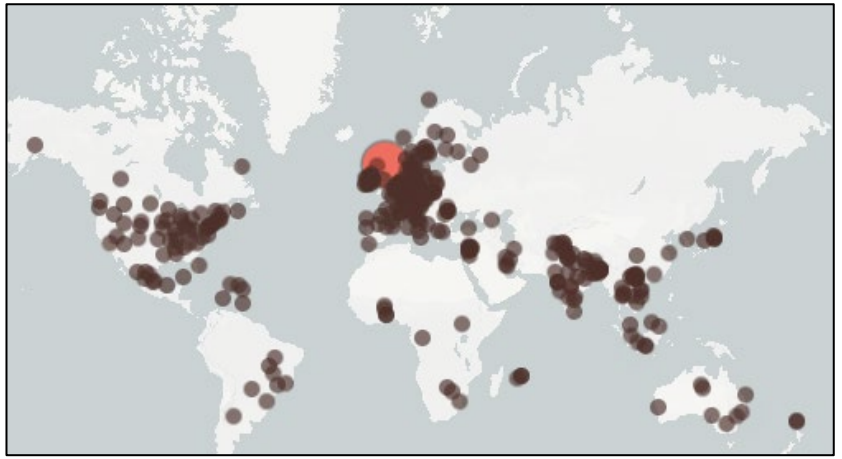
Relative variant genome frequency per region



Countries involved in pivotal phase 3 vaccine trials

Country	Total incidence (count)	Incidence in past 4 weeks (count)	Incidence in past 4 weeks (%)
United Kingdom	23,015	18,260	68.6
India	5,749	330	89.9
USA	2,097	649	4
Germany	633	234	2.5
Canada	360	0	0
Japan	183	22	31.4
France	146	18	1.6
Israel	38	0	0
Mexico	37	11	2.2
South Africa	21	0	0
China	18	0	0
Brazil	14	4	1.3
Argentina	1	0	0
Colombia	0	0	0
Peru	0	0	0





https://www.gisaid.org/hcov19-variants/ (Accessed **June 9** 2021)

WHO summary of vaccine performance against variants of concern (VOC) relative to ancestral stains (June 8, 2021)

VOC 202012/01 (B.1.1.7 - Alpha)	501Y.V2 (B.1.351 - Beta)	P.1 (B.1.1.28.1 - Gamma)	B.1.617.2 (Delta)
Efficacy/effectiveness against disease or infection			
Protection retained against disease Severe disease: • No/minimal loss: Pfizer-BioNTech Symptomatic disease & infection: • No/minimal loss: AstraZeneca, Novavax, Pfizer-BioNTech Asymptomatic infection: • No/minimal loss: Pfizer-BioNTech • Inconclusive/Moderate-substantial loss : AstraZeneca	Reduced protection against disease, limited evidence Severe disease: No/minimal loss: Janssen, Pfizer-BioNTech Mild-moderate disease: • Moderate loss: Janssen, Novavax • Inconclusive/Substantial loss: AstraZeneca Infection: Moderate loss: Pfizer-BioNTech Asymptomatic infection: No evidence	Protection likely against disease (no evidence for vaccines authorized for use in Canada)	Protection likely against disease Symptomatic disease: No/minimal loss: AstraZeneca after one dose and Pfizer-BioNTech after two doses Minimal/modest loss: AstraZeneca after two doses and Pfizer-BioNTech after one dose
Neutralization			
No/minimal loss: Moderna, Novavax, Pfizer-BioNTech, Minimal/moderate loss: AstraZeneca	Minimal to substantial loss: Moderna, Pfizer-BioNTech Moderate to substantial loss: AstraZeneca, Novavax, Janssen	No/Minimal loss: AstraZeneca Minimal/moderate loss: Moderna, Pfizer-BioNTech	Modest/moderate loss: Pfizer-BioNTech Substantial loss: single dose of AstraZeneca

Adapted from WHO Weekly epidemiological update on COVID-19 – **8 June 2021**. Table 4: www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---8-june-2021

Summary table of estimates of vaccine effectiveness

No data available for Medicago or Sanofi and GlaxoSmithKline (GSK)

Vaccine	B.1.1.7 (Alpha)	B.1.351 (Beta)	P.1 (Gamma)	B.1.617 (Delta)
Pfizer-BioNTech	14 days after 1st dose: • 46 to 60% from infection 7 days after 2nd dose: • 70 to 94% from infection • 90% from symptomatic infection (95%CI) • 92 to 98% from severe disease • 94 to 98% from death	35-41 days after 1st dose: • 43% (95% CI, 22 to 59) from symptomatic infection 7 days after 2nd dose: • 88% (95% CI, 61 to 96) from symptomatic infection	No data	Symptomatic disease After 1 dose: • 33.2% (95% CI, 8.3 to 51.4) After 2 doses: • 87.9% (95% CI, 78.2 to 93.2)
Moderna	15-41 days after 1st dose: • 58.9% (95% CI, −9.7 to 84.5) from infection • 61% (95% CI, 56 to 66) from symptomatic infection 7-15 days after 2nd dose: • 85.7% (95% CI, 67.2 to 93.9) from infection • 90% (95% CI, 88 to 100) from symptomatic infection	35-41 days after 1st dose: • 43% (95% CI, 22 to 59) from symptomatic infection 7 days after 2nd dose: • 88% (95% CI, 61 to 96) from symptomatic infection	No data	No data
AstraZeneca	21 to 28 after 1st dose: • 65-74% from any infection After 2 doses: • 70.4% (95% CI, 43.6 to 84.5) from symptomatic infection	After 2 doses: • 10.4% (95% CI, -76.8 to 54.8) from mild to moderate disease • no data on protection against severe disease	No data	Symptomatic disease After 1 dose: • 32.9% (95% CI, 19.3 to 44.3) After 2 doses: • 59.8% (95% CI, 28.9 to 77.3)
Janssen	No data	52.0% and 64.0% at 14 days and 28 days for moderate, and 73.1% and 81.7% for severe cases	No data	No data
Novavax	After 2 doses: • 86.3% (95% CI, 71.3 to 93.5)	7 days after 2nd dose: • 57.7% (95% CI, 25.7 to 75.9) from infection	No data	No data

1. Adapted from: Lorio A, Little J, Linkins L, Bennett D, Lavis JN. COVID-19 living evidence profile #6 (version 6.7): What is the efficacy and effectiveness of available COVID-19 vaccines in general and specifically for variants of concern? Hamilton: Health Information Research Unit, **01 June 2021.**

2. Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of COVID -19 vaccines against the B.1.617.2 variant

VOC-specific vaccines and future directions

- Moderna
  - Study evaluating COVID-19 booster vaccine candidates (Mar 2021)
    - A variant-specific booster candidate, mRNA-1273.351, based on the B.1.351 (Beta) variant first identified in the Republic of South Africa, at the 50 µg dose level and lower.
    - A multivalent booster candidate, mRNA-1273.211, which combines mRNA-1273, Moderna's authorized vaccine against ancestral strains, and mRNA-1273.351 in a single vaccine at the 50 µg dose level and lower.

- Pfizer-BioNTech
  - "Discussions with regulatory authorities are ongoing regarding an additional registration-enabling study using an mRNA vaccine with a variant sequence; this would provide a flexible solution for rapidly adapting the vaccine for use against the B.1.351 (Beta) lineage or other new strains that may emerge as possible immune escape virus variants" (Feb 2021)

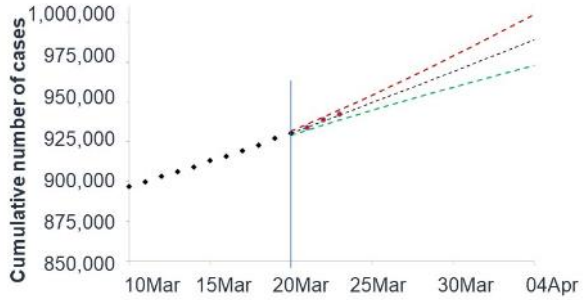
- Medicago & GSK
  - initiated a feasibility study of a vaccine candidate to address the emerging COVID-19 variants (Mar 2021)

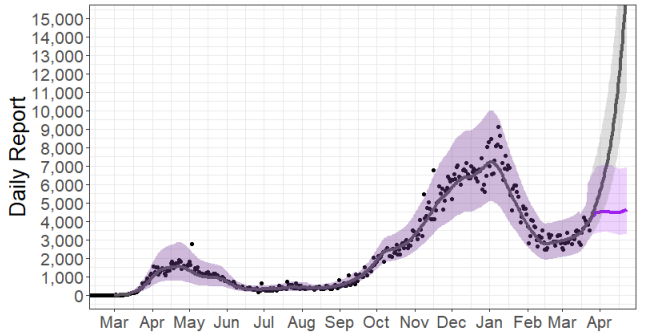
- GSK & CureVac
  - "jointly develop next generation mRNA vaccines for COVID-19 with the potential for a multi-valent approach to address multiple emerging variants in one vaccine" (Feb 2021)

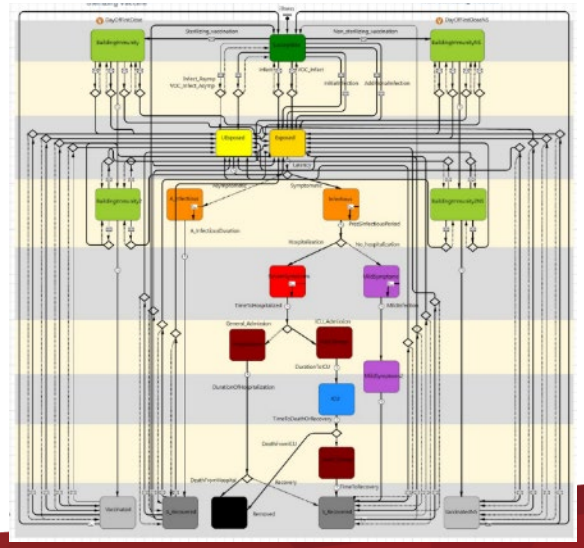
IMPACTS OF VARIANTS OF CONCERN

MODELS USED BY PHAC

1. **Statistical forecast models:**
   - Short-range forecast of expected cases given recent incidence
2. **Long-range forecast models**:
   - Dynamic compartment model adapted to project near-future given recent incidence and scenarios for control/release/variants of concern
3. **Models to explore scenarios of opening up**:
   - More complex models
     - Deterministic, age structured compartment model
     - Agent-based, age structured computational model
   - Initially developed to model control measures needed
   - Recently adapted to model effects of vaccination rollout and transmission of VOCs





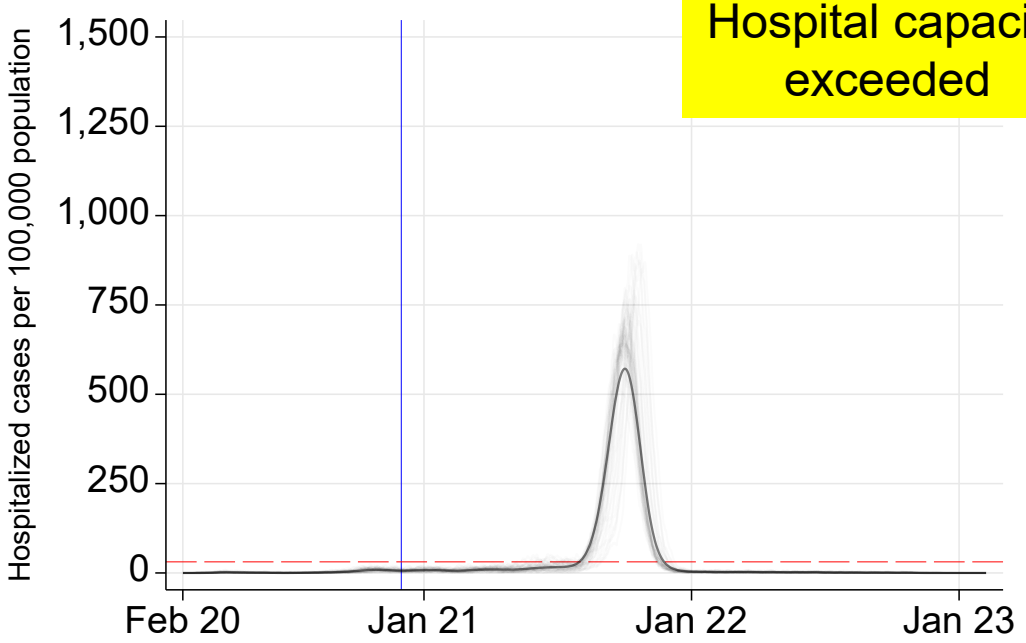


MODELLING THE IMPACT OF VACCINATION AND VARIANTS 1

Introduction of B.1.1.7 (alpha) only on Dec 1, 2020 (blue line)
No other immune escape VOCs

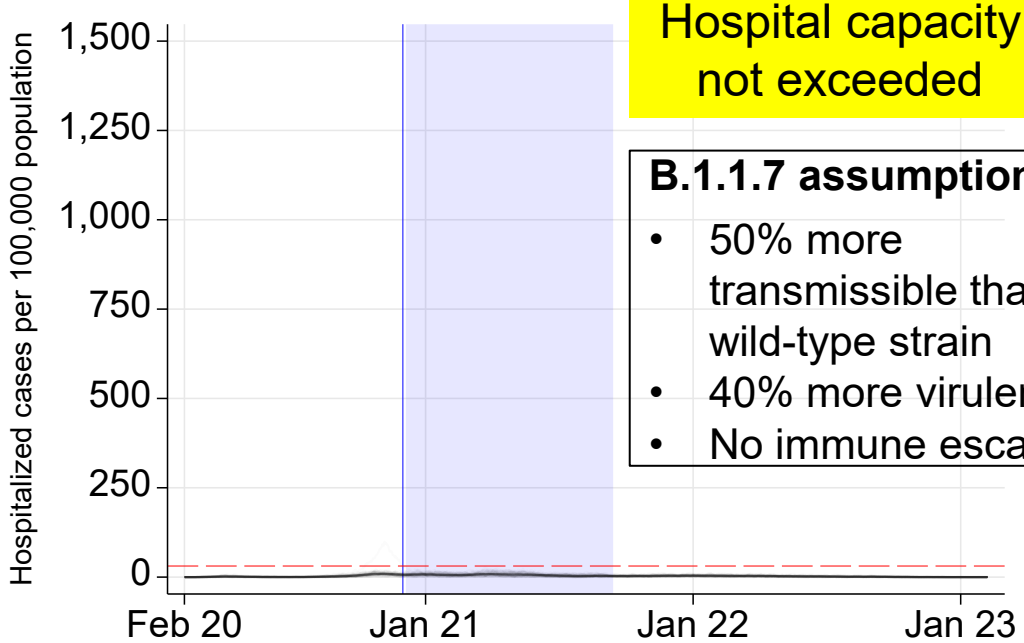
Without Vaccination

Hospital capacity exceeded



With vaccination

Hospital capacity not exceeded



B.1.1.7 assumptions:

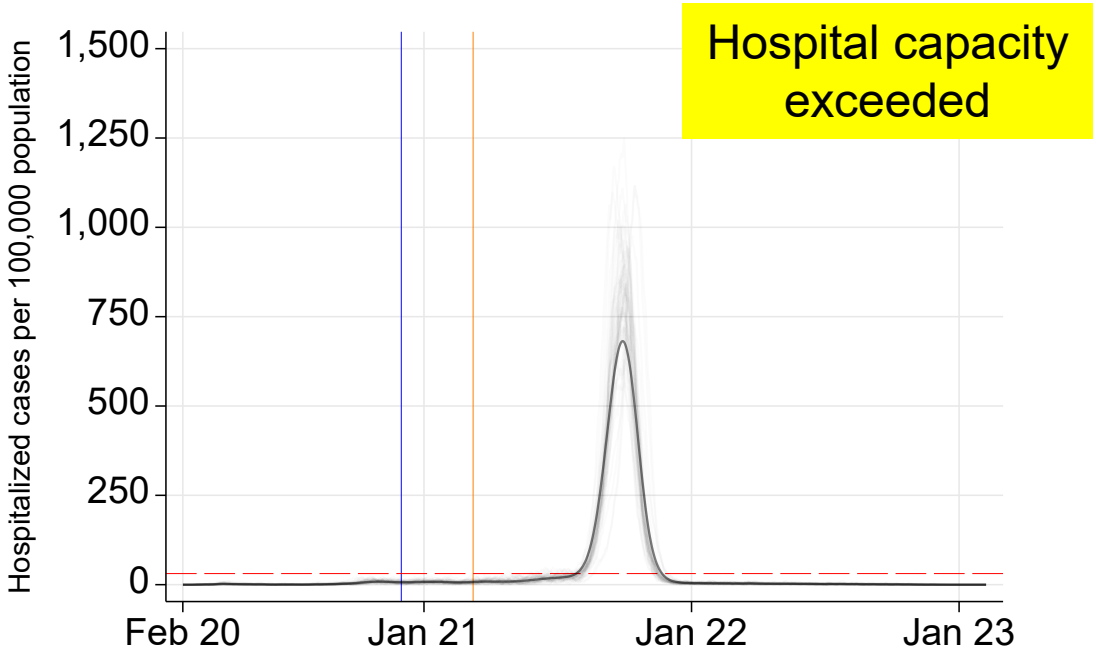
- 50% more transmissible than wild-type strain
- 40% more virulent
- No immune escape

Hospital capacity Median hospitalized cases Vaccination period

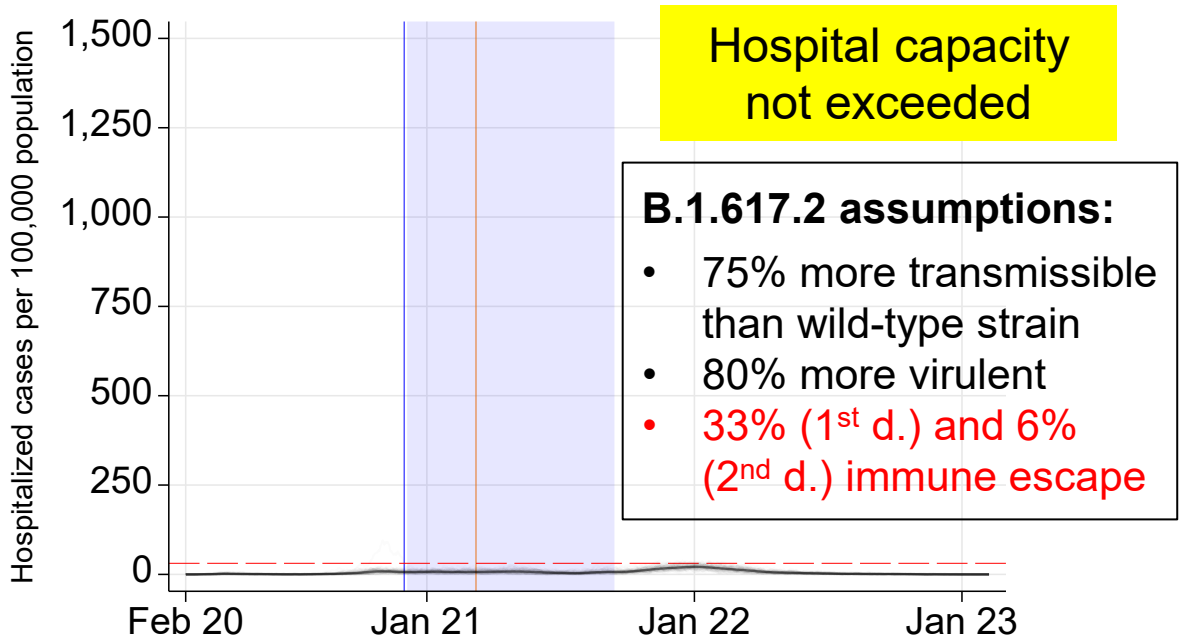
MODELLING THE IMPACT OF VACCINATION AND VARIANTS 2

Introduction of B.1.1.7 (alpha) only on Dec 1, 2020 (blue line)
Introduction of B.1.617.2 (delta) on March 1, 2021 (orange line)

Without Vaccination



With vaccination

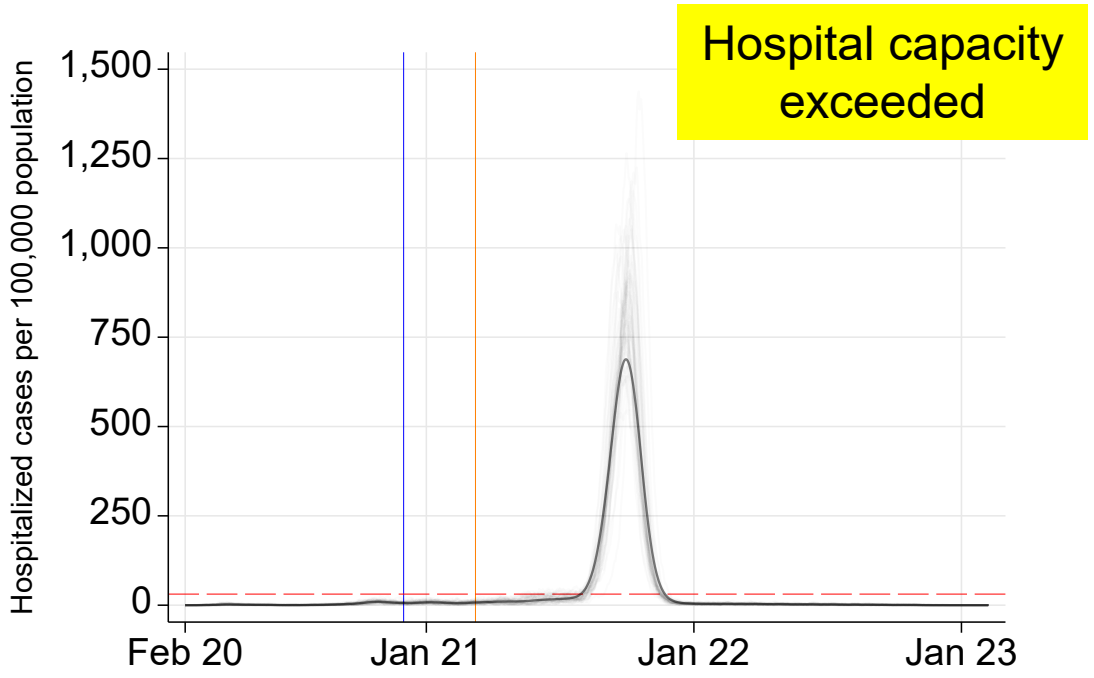


Hospital capacity Median hospitalized cases Vaccination period

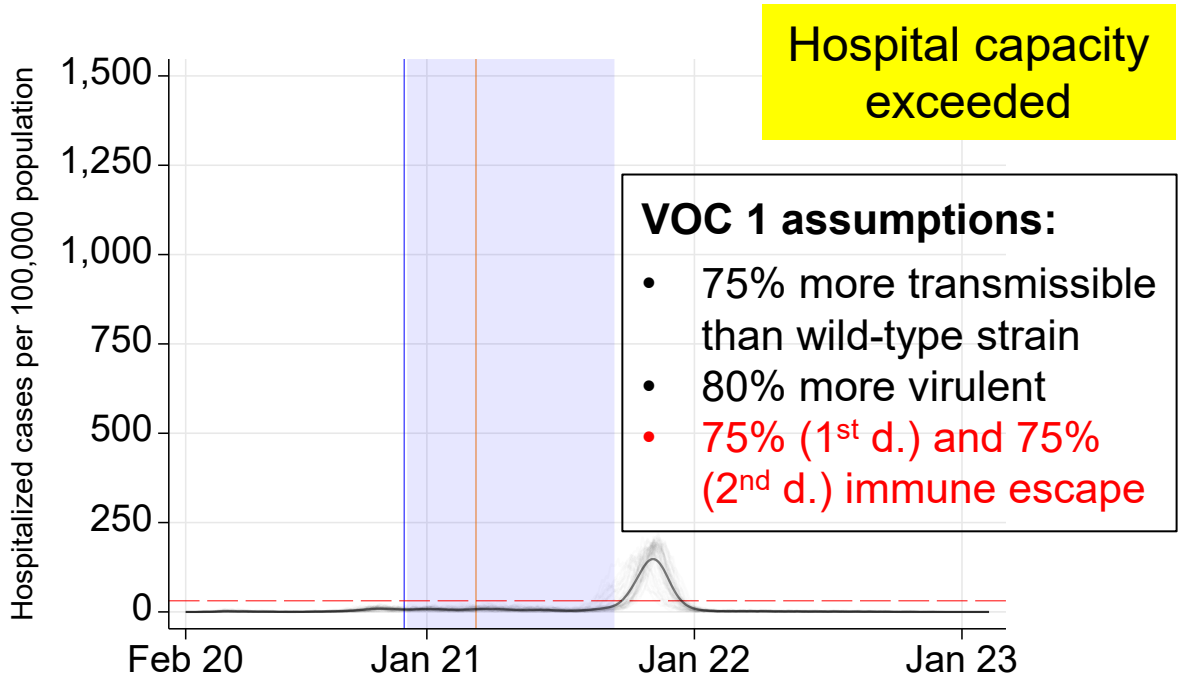
MODELLING THE IMPACT OF VACCINATION AND VARIANTS 3

Introduction of B.1.1.7 (alpha) only on Dec 1, 2020 (blue line)
Introduction of a hypothetical VOC 1 on March 1, 2021 (orange line)

Without Vaccination



With vaccination

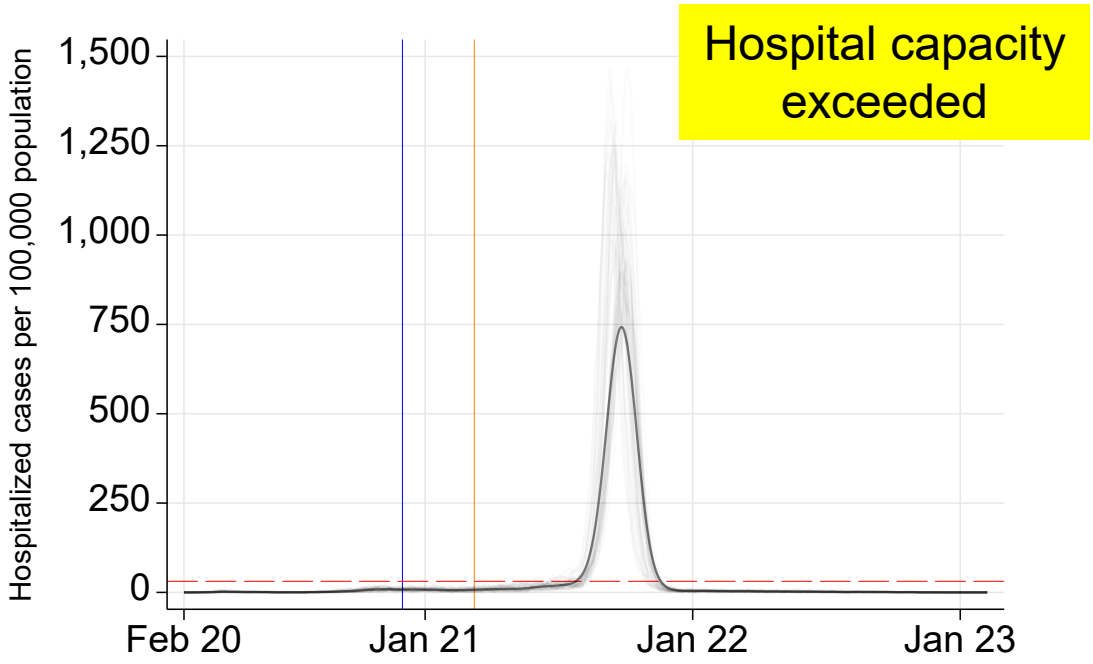


Hospital capacity Median hospitalized cases Vaccination period

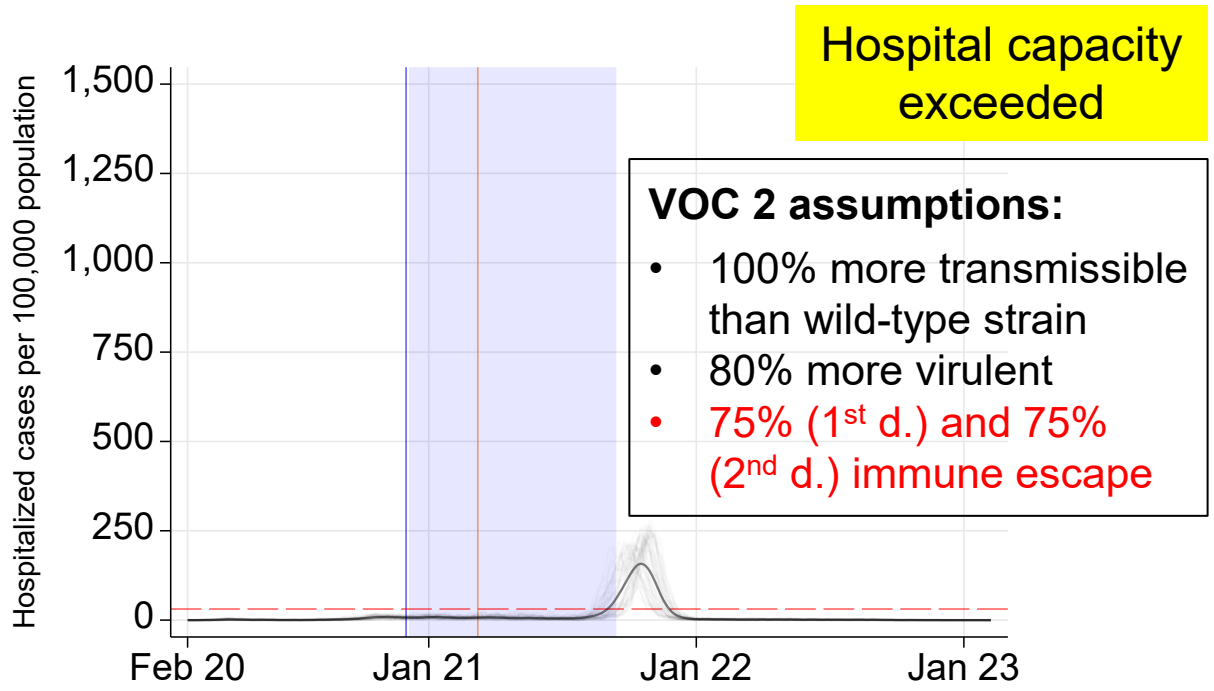
MODELLING THE IMPACT OF VACCINATION AND VARIANTS 4

Introduction of B.1.1.7 (alpha) only on Dec 1, 2020 (blue line)
Introduction of a hypothetical VOC 2 on March 1, 2021 (orange line)

Without Vaccination



With vaccination



Hospital capacity Median hospitalized cases Vaccination period

KEY MESSAGES FOR HEALTH CARE PROVIDERS

Key Messages for Health Care Providers

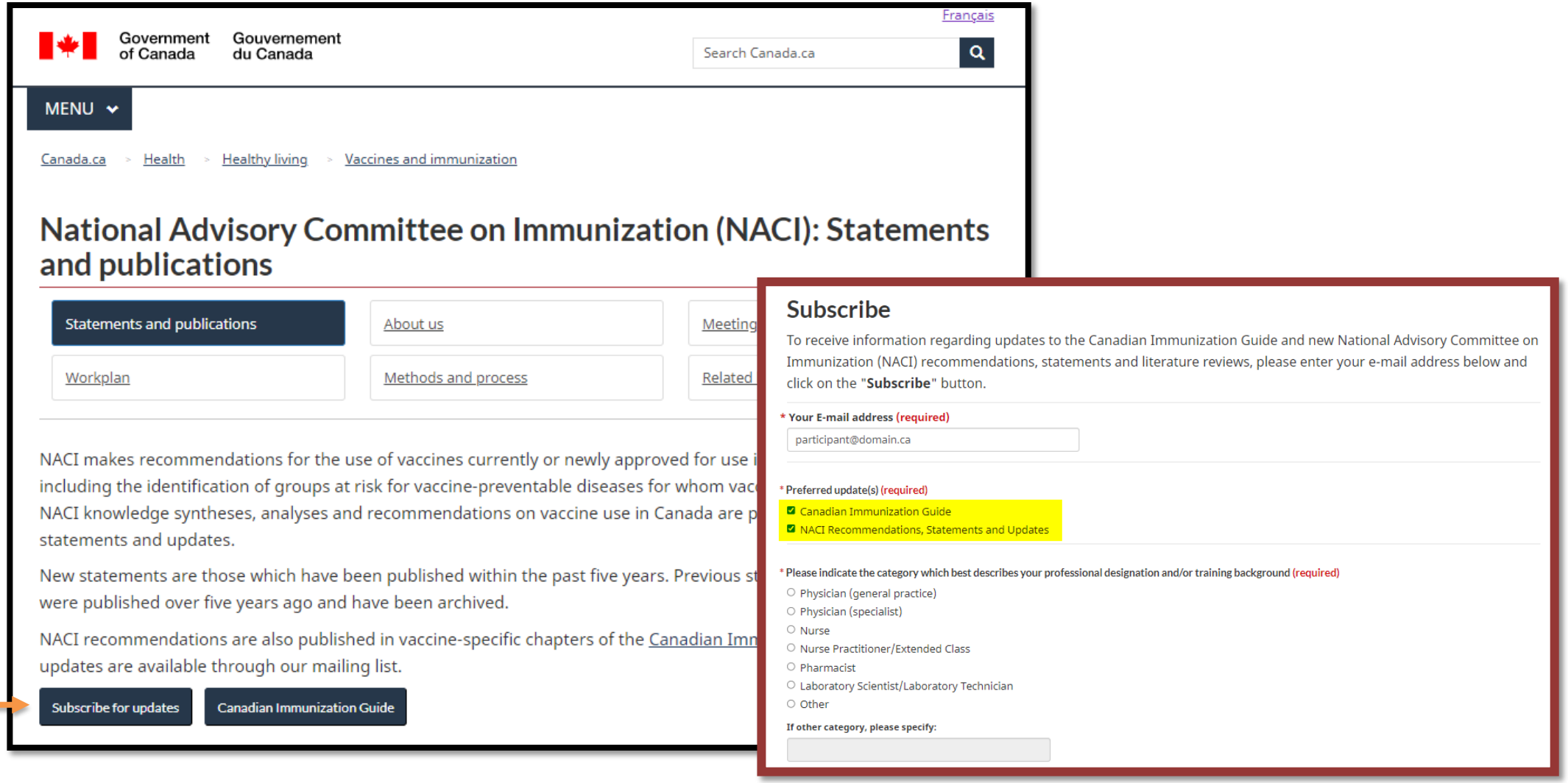
- Canada has robust genomic and epidemiological surveillance systems in place to detect and track SARS-CoV-2 variants, including variants of concern (VoCs) (*ie: CanCoGeN*)

- Canada, and other international bodies, are tracking the effectiveness of vaccines against VoCs, including:
  - B.1.1.7 (Alpha) *originally identified in the UK* – Evidence for protective efficacy of some vaccines
  - B.1.351 (Beta) *originally identified in South Africa* – Evidence of reduced protection of some vaccines
  - B.1.1.28 / P1 (Gamma) *originally identified in Brazil and Japan* – Limited evidence
  - B.1.617.2 (Delta) *originally identified in India* – Emerging evidence of protective effectiveness of some vaccines

- Even if a vaccine shows reduced efficacy against a particular variant, people who are vaccinated will still benefit from some level of protection. Widespread vaccination will help us achieve the best public health outcomes by reducing overall transmission.

- Modeling forecasts expect that despite VoCs, with vaccination will ensure hospital capacity is not exceeded

Subscribe for National Avisory Committee on Immunization (NACI) publications and updates to the Canadian Immunization Guide (CIG)



https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci.html

PHAC Health Care Provider Toolkit:

Contents

- **About COVID-19:** General information including symptoms, prevention and guidance for health care providers, culturally safe care, and statements from the Chief Public Health Officer of Canada
- **Overview of Vaccines:** COVID-19 vaccines in Canada, how to get vaccinated, national vaccination coverage, shipments and deliveries, how vaccines are developed, as well as information for Indigenous Peoples
- **Authorized Vaccines:** Information about COVID-19 vaccines that have been authorized by Health Canada
- **Guidance for Health Care Providers:** Planning guidance on vaccine administration and immunization clinics, NACI recommendations, and guidance on anaphylaxis, vaccine components and pain mitigation
- **Vaccine Confidence:** Information and training on addressing vaccine confidence, and answers to common questions
- **Vaccine Safety:** Overview of vaccine safety, surveillance and reporting, information on possible side effects, and reported side effects in Canada
- **Additional Resources:** Provincial, territorial and stakeholder resources, communications and digital tools, and content and resources for social media platforms
- **Terms of Use:** Information about the Canada wordmark and how the tool kit resources can be used

https://www.canada.ca/content/dam/phac-aspc/documents/services/diseases-maladies/2019-novel-coronavirus-infection/health-professionals/covid-19-healthcare-professionals-vaccine-toolkit.pdf

For more PHAC webinars on COVID-19, visit:

COVID-19 for health care providers: Training

www.canada.ca/en/public-health/services/diseases/2019-novel-coronavirus-infection/health-professionals/training.html

National Collaborating Centre for Infectious diseases

nccid.ca/phac-webinars-on-covid-19-vaccines

Canadian Vaccination Evidence Resource and Exchange Centre

www.canvax.ca/canvax-webinar-series

Topics include:

- COVID-19 Vaccines Foundations
- Vaccine-induced Immune Thrombotic Thrombocytopenia (VITT)
- Allergies and LDV Syringes
- Delayed Injection Site Reactions
- Planning for immunization clinics
- Other recommendations from NACI on the use of COVID-19 vaccines

Thank you!

Check nccid.ca for Upcoming COVID-19 Webinars

Please **complete short webinar evaluation** when you leave

Link to recording/slides will be emailed to all registered through Eventbrite and will be available at nccid.ca after the webinar.

SUPPLEMENT

Vaccine effectiveness against hospitalization from the Alpha and Delta variants

Stowe J et al. (England, June 14, 2021 - preprint)

The Pfizer-BioNTech (Pfizer) and AstraZeneca (AZ) vaccines are **both very effective at preventing hospitalization** from the Alpha (B.1.1.7) and Delta (B.1.617.2) variants, including with only one dose, particularly for the Pfizer vaccine.

	Alpha (B.1.1.7)	Delta (B.1.351)
Pfizer-BioNTech – one dose	83% (95%CI: 62-93)	94% (95%CI: 46-99)
Pfizer-BioNTech – two doses	95% (95%CI: 78-99)	96% (95%CI: 86-99)
AstraZeneca – One dose	76% (95%CI: 61-85)	71% (95%CI: 51-83)
AstraZeneca – Two doses	86% (95%CI: 53-96)	92% (95% CI: 75-97)

Public library - PHE national - Knowledge Hub (khub.net)

Vaccine effectiveness against hospitalization from the Alpha and Delta variants

Sheikh A. et al. (Scotland, June 14, 2021 - preprint)

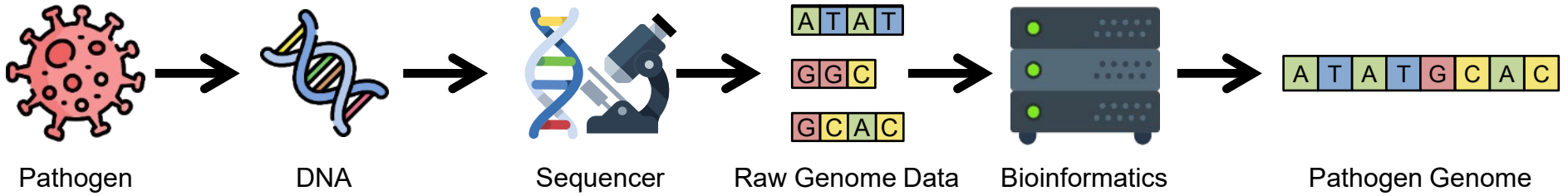
- The Delta variant cases were more likely to be hospitalized compared to the Alpha variant cases (hazard ratio 1.85 (95% CI: 1.39 to 2.47)).
- Pfizer-BioNTech and AstraZeneca (as a combined estimate with both vaccines) were effective against hospitalizations but **effectiveness was higher for Alpha than for Delta** cases.
- Vaccine effectiveness against infection:
  - higher for Alpha than for Delta for both one and two doses of both COVID-19 vaccines;
  - generally higher for Pfizer-BioNTech than for AZ.

	Alpha (B.1.1.7)	Delta (B.1.617.2)
Hospitalization 28 days or more days after dose 2; both vaccines combined due to insufficient numbers	72% (95% CI: 57 to 82%)	62% (95% CI: 42 to 76%)
Pfizer-BioNtech – One dose SARS-CoV-2 infection irrespective of symptoms 28 or more days after dose 1	38% (95% CI: 29 to 45)	30% (95% CI: 17 to 41%)
Pfizer-BioNtech – Two doses SARS-CoV-2 infection irrespective of symptoms 14 or more days after dose 2	92% (95% CI: 90 to 93%)	79% (95% CI: 75 to 82%)
AstraZeneca – One dose SARS-CoV-2 infection irrespective of symptoms 28 or more days after dose 1	37% (95% CI: 32 to 42%)	18% (95% CI: 9 to 25%)
AstraZeneca – Two doses SARS-CoV-2 infection irrespective of symptoms 14 or more days after dose 2	73% (95% CI: 66 to 78%)	60% (95% CI: 53 to 66%)

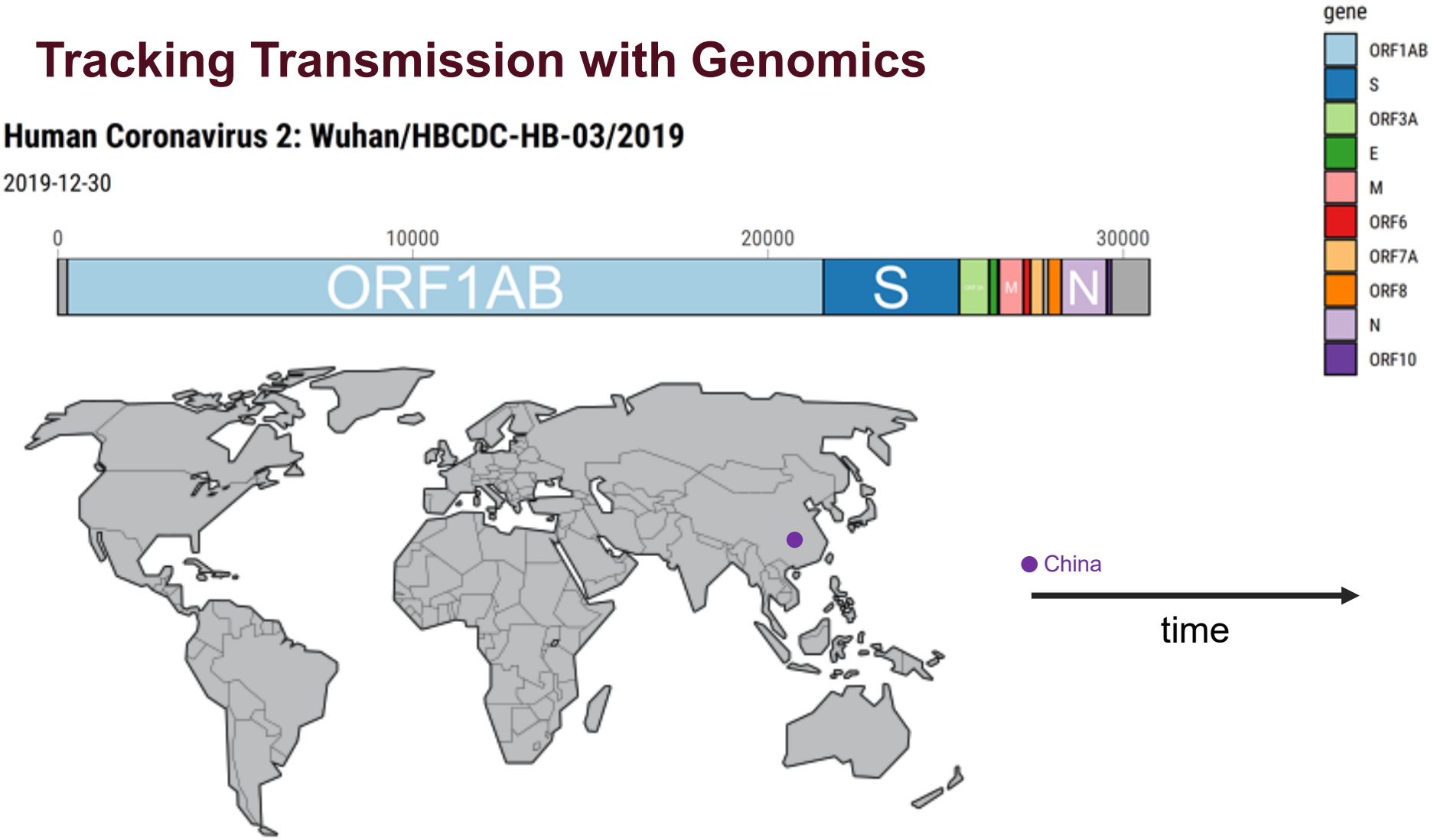
www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)01358-1/fulltext

Genomics Technologies are Revolutionizing Public Health Science

- Microbial science has undergone a transformative change over the past decade. Traditional microbiology informed us only of whether a given pathogen was there or not.
- Genomics provides the entire genetic code of the pathogen. With that, we can not only identify the pathogen, but also analyze the code to learn more about resistance, subtypes and also track transmission.
- This shift has been enabled by advances in genome-based laboratory technologies as well as the supporting bioinformatics sciences
- Taken together, these tools increase the quality and confidence of public health decision making.

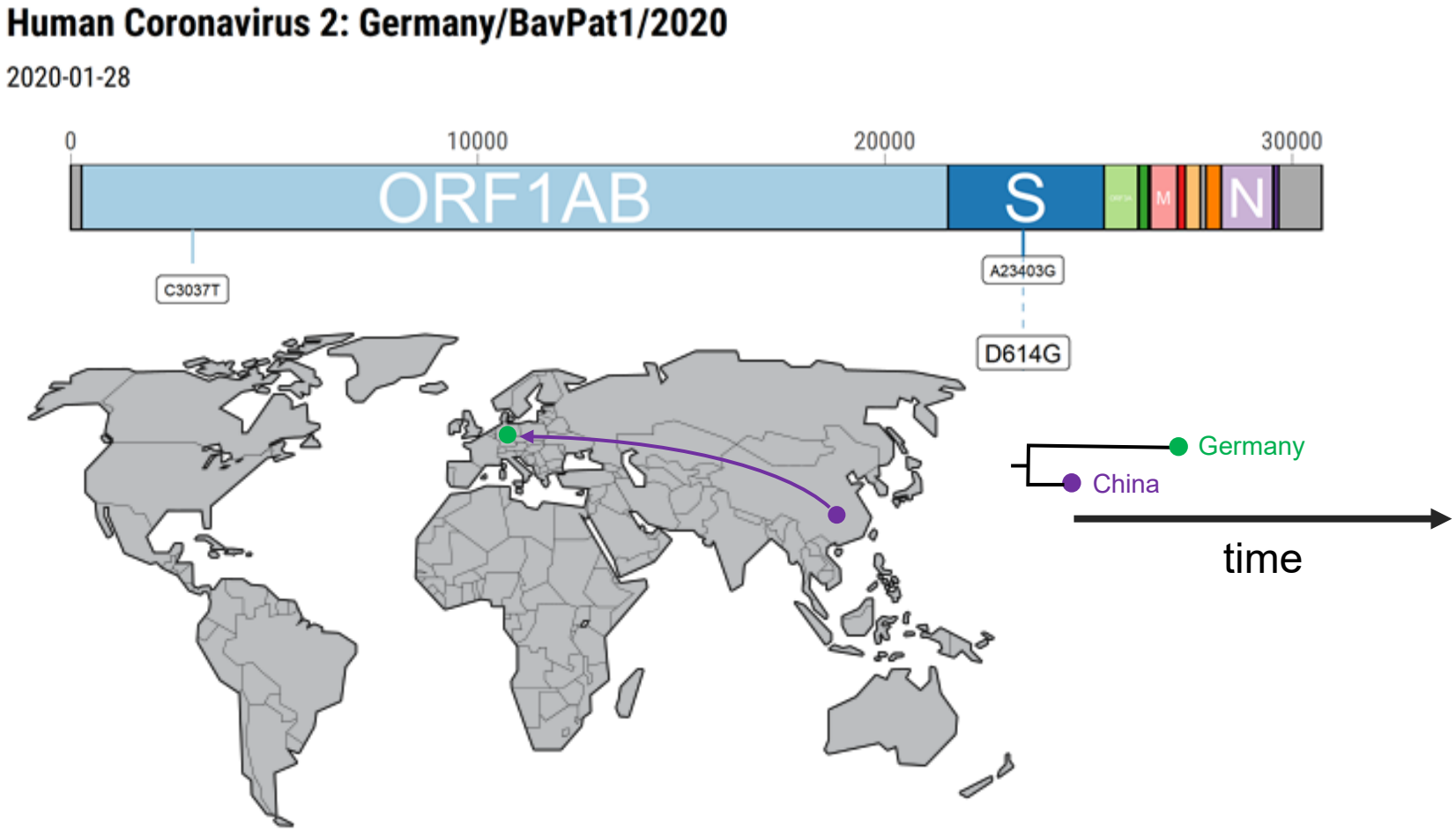


Tracking Transmission with Genomics



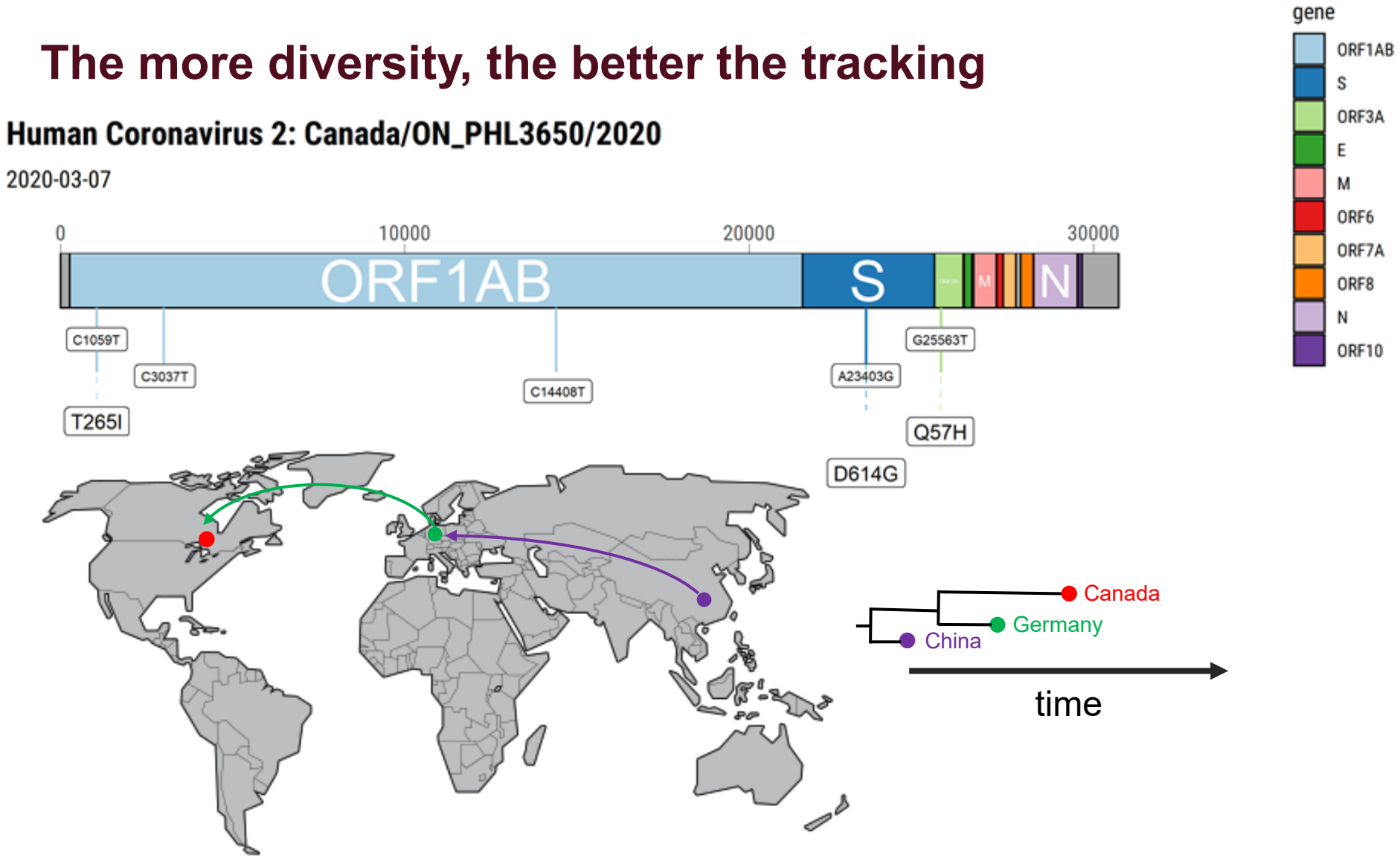
- Following the initial detection of a new virus, that sequence becomes the reference standard, against which future sequences are compared
- Above is the genome of the first sequence, collected in Wuhan in late 2019

With transmission comes mutation events



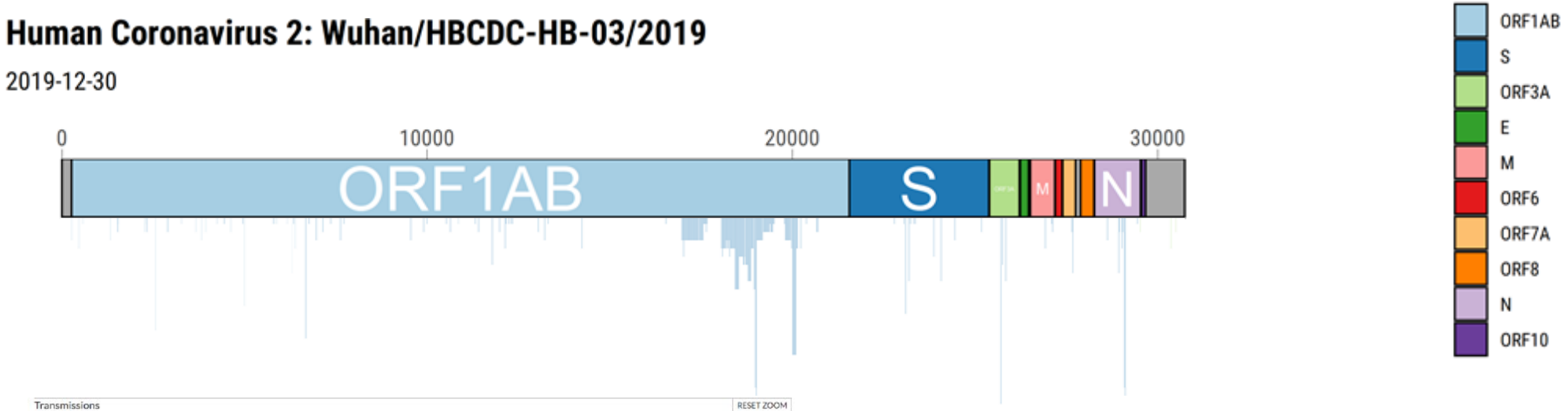
- Mutations can occur as viruses transmit; in the case above, 2 mutations occurred by the time there was a transmission event in Germany (mutations are the bubbles under the genome)

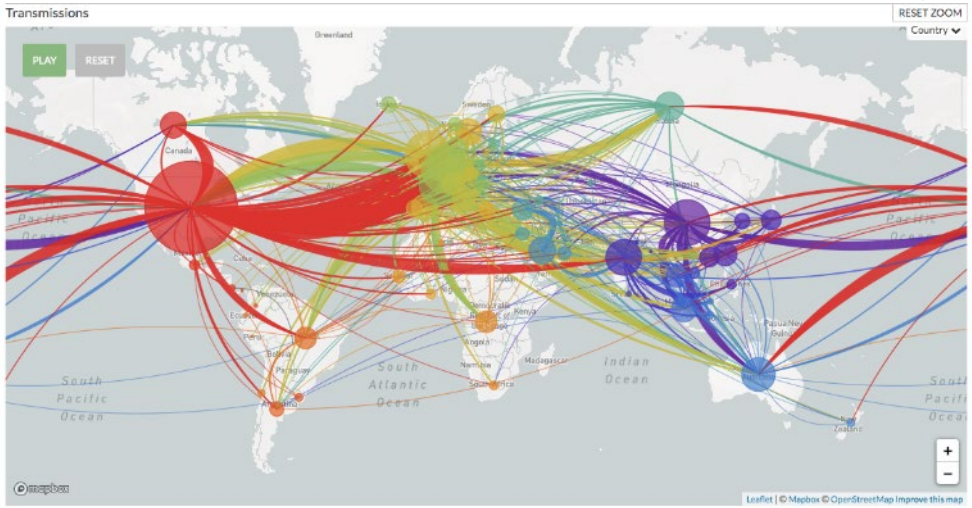
The more diversity, the better the tracking

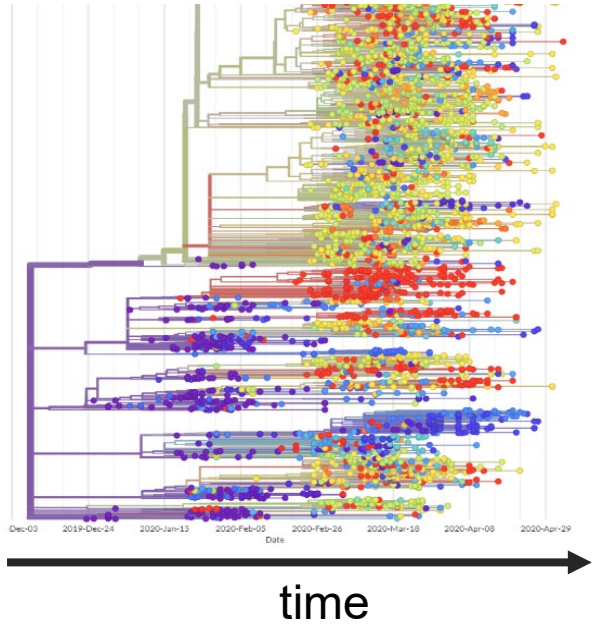


- By combining mutation data with other important metadata (location, date of sample collection), a tree of relatedness emerges (the phylogeny)

Phylogeny data enables tracking of variants over time and space







- Using this information, we can track the spread of the virus and detect when new introduction events occur, and from where

Français

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Government of Canada invests $53 million to address COVID-19 virus variants of concern

From: Public Health Agency of Canada

News release

February 12, 2021 | Ottawa, ON | Public Health Agency of Canada

The Government of Canada is taking a multilayered approach to detecting and addressing variants of concern in Canada. To this end, the government developed a monitoring program with provinces and territories to identify new COVID-19 virus variants in Canada, such as the ones originating in the United Kingdom (B.1.1.7), South Africa (B.1.351) and Brazil (P.1). Today, the Government of Canada is increasing our capacity to find and track these variants in the country by investing $53 million in an integrated Variants of Concern Strategy. This will help rapidly scale up our surveillance, sequencing and research efforts.