EPI-WIN Webinar

Update on

SARS-CoV-2 variant of concern

Omicron

01.02.2022

World Health Organization | EPI·WiN | infodemic MANAGEMENT

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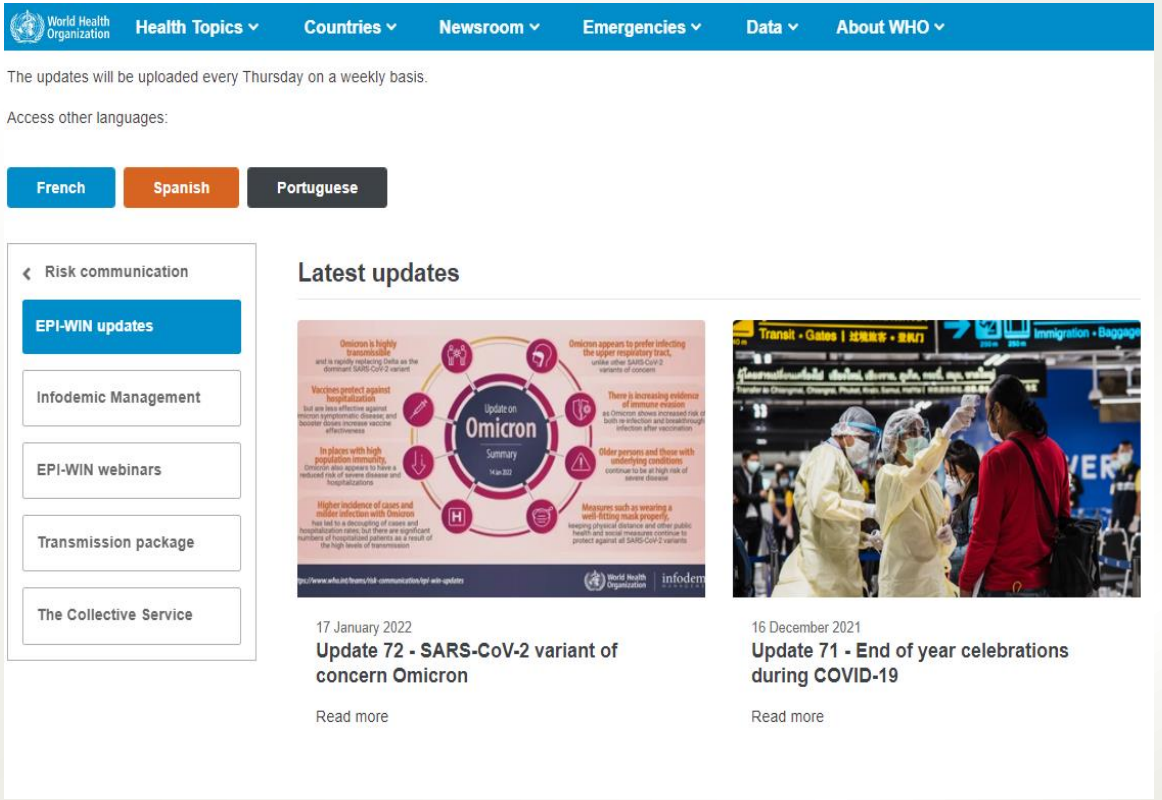

https://www.who.int/teams/risk-communication/epi-win-updates

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Why Omicron is significant

- On 26 November, WHO designated SARS-CoV-2 variant B.1.1.529 a **variant of concern (VOC)** and named it **Omicron**
- Omicron has **> 30 genetic mutations of the spike protein.** The SARS-CoV-2 spike protein acts like a 'key" and allows the virus to bind to ACE-2 receptor and enter and infect cells in humans.
- **The spike protein of SARS-CoV-2 is targeted by some currently approved COVID-19 vaccines;** therefore, mutations in the spike protein need to be closely monitored

Fig: Delta compared to Omicron with mutations in the S1 domain of the spike protein

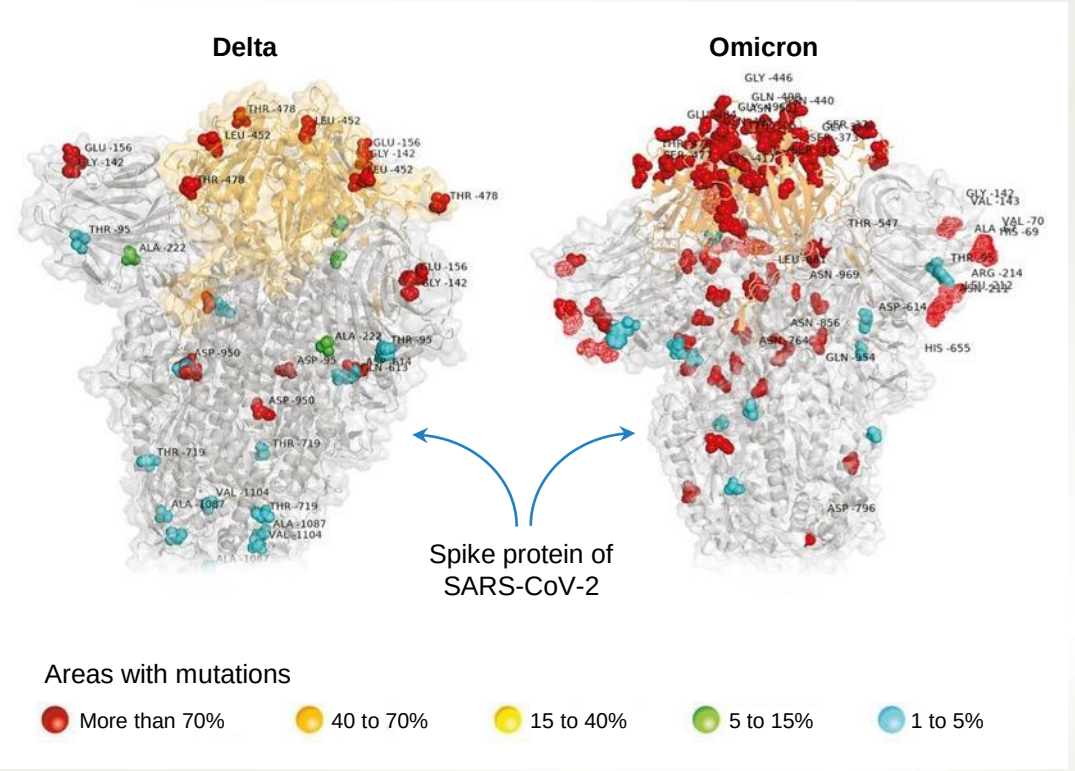


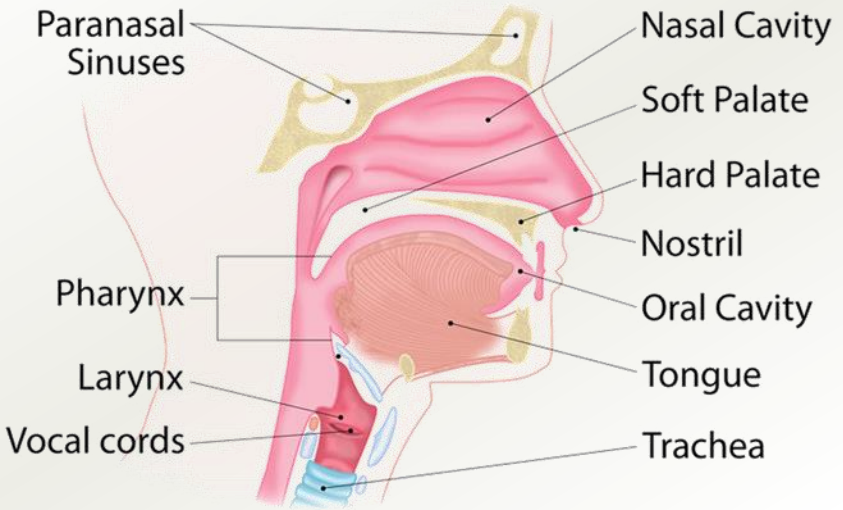
Image: AFP

https://www.who.int/news/item/26-11-2021-classification-of-omicron-(b.1.1.529)-sars-cov-2-variant-of-concern

Omicron prefers to infect the upper respiratory tract

- Omicron appears to **show preference for infecting and replicating in the upper respiratory tract**, compared to Delta and other strains which prefer the lower respiratory tract.
- This may confer a **transmission advantage** independent of immune evasion
- Preliminary studies suggest that **Omicron appears to have decreased ability to infect lung tissue,** which may be a reason why people infected with Omicron have a less severe disease compared to Delta

Fig: Upper respiratory tract



Omicron is highly transmissible

- **Omicron shows**
  - **significant increase** in growth rate;
  - **increased risk of a close contact becoming a secondary case**; and
  - **increase in observed number of people infected** by index case compared to Delta
- **High growth rate likely due to** a combination of factors including:
  - **immune evasion** (virus evades the protective immune system) and
  - **potential intrinsic increased transmissibility**

Source:
Enhancing Readiness for Omicron (B.1.1.529): Technical Brief and Priority Actions for Member States (who.int)

Omicron: large number of cases but fewer deaths

- **Omicron has reduced risk of hospitalization compared to Delta**, suggest studies from several countries
- There is **decoupling between case reports and hospitalization** in places of high levels of population immunity
- Omicron infection appears to be associated with lower severity, **the large number of people being infected with it translates into significant number of patients requiring hospital admission, putting strain on healthcare systems.**

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Vaccines protect against severe disease and death

- All initial vaccine effectiveness* estimates **show reduced effectiveness against infection and symptomatic disease** than for Delta**;
- **However, current COVID-19 vaccines are providing strong protection against severe disease and death**
- Preliminary **vaccine effectiveness estimates appear greater following booster** than primary series for most products

- *Vaccine effectiveness refers to its ability to reduce disease*

*** Studies from United Kingdom, Denmark, Canada and South Africa, vaccines studied were mRNA vaccines, AD26..COV2.S, and AstraZeneva Vaxzevria*

Source: Enhancing Readiness for Omicron (B.1.1.529): Technical Brief and Priority Actions for Member States (who.int)

Older people and those with underlying conditions remain at risk

- Older people continue to be at greater risk for developing severe disease
- Those with underlying conditions, of any age, are also at risk for developing severe disease

People at greater risk of COVID-19 include those: unvaccinated, with obesity, people over the age of 60, hypertension, Diabetes mellitus, cardiac disease, chronic lung disease, cerebrovascular disease, dementia, mental disorders, chronic kidney disease, immunosuppression, cancer, HIV/AIDS, pregnancy.

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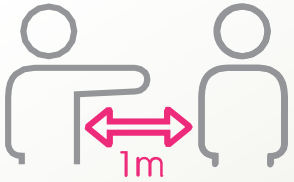
Settings with higher risk of contracting COVID-19

- The following settings increase the risk of contracting COVID-19 and **should be avoided**:
  - Closed spaces with poor ventilation
  - Crowded areas with many people around
  - Close contact with others, such as close-range conversations

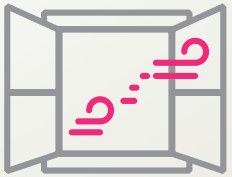
Preventive measures effectively reduce the risk of COVID-19, including Omicron

Preventive measures continue to be effective and should continue to be implemented to reduce the spread of COVID-19

Stay at home
if you feel unwell



Keep a physical distance of at
least 1 metre from others



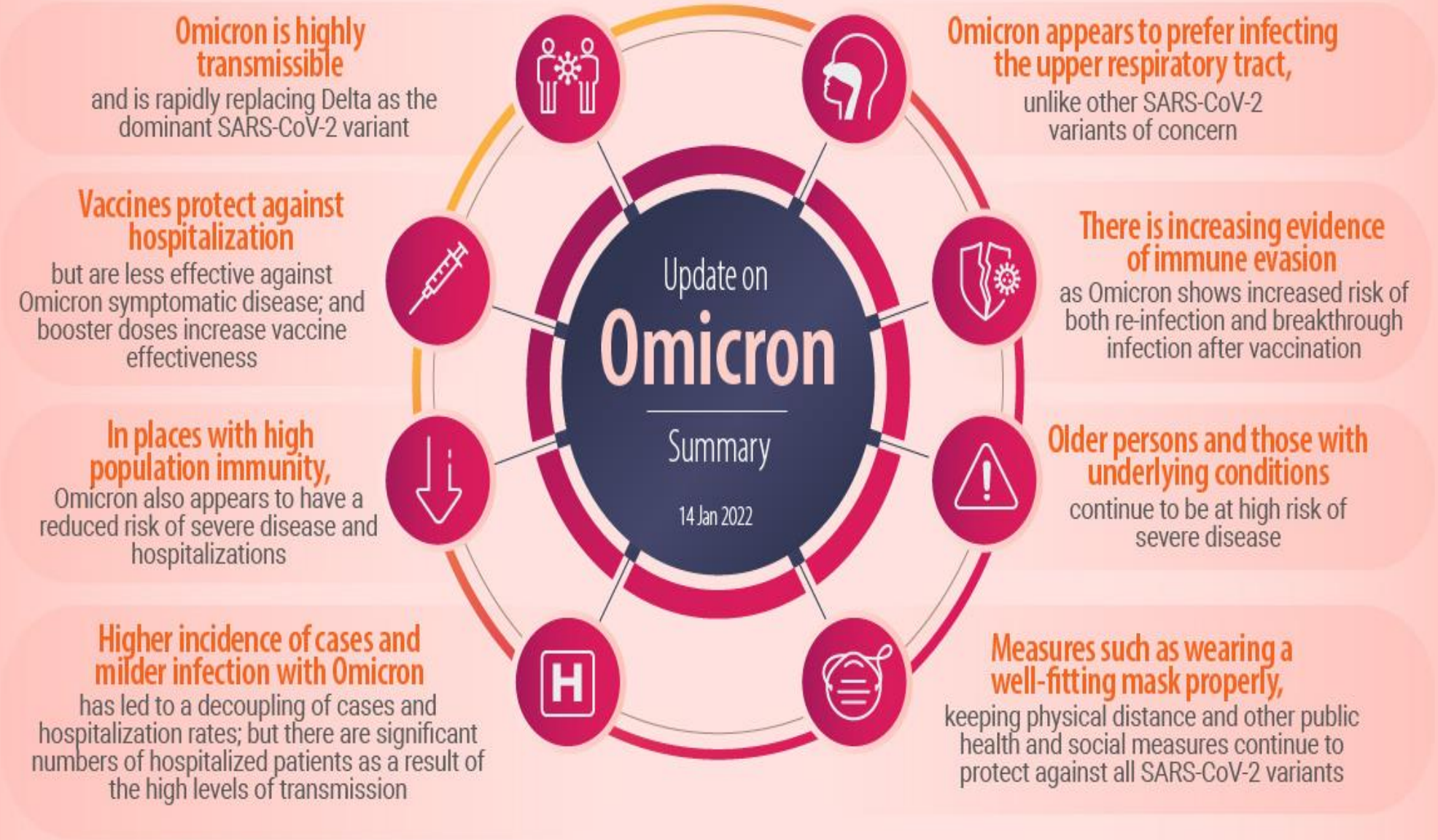
Open windows to
improve ventilation

Cough or sneeze into a
bent elbow or tissue

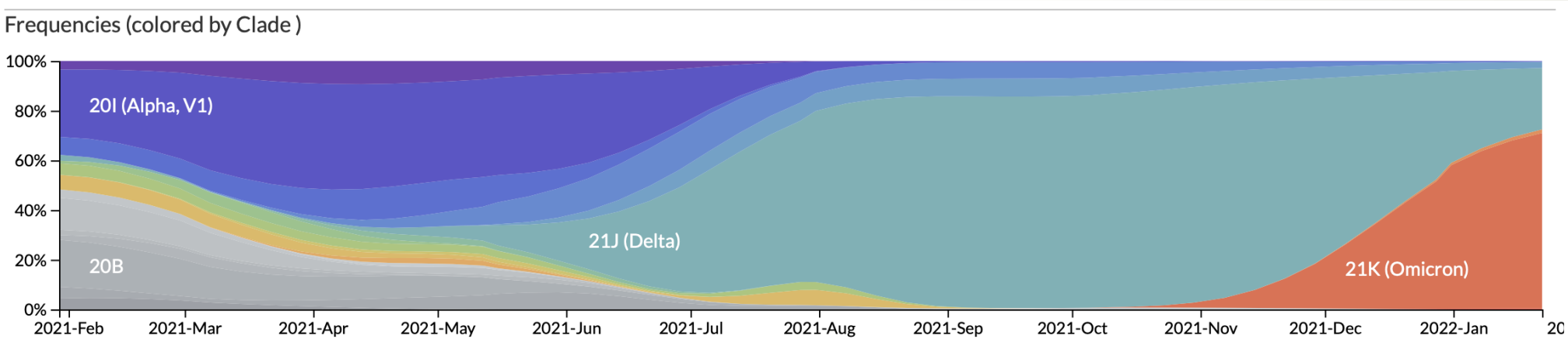
Wash hands
frequently

When indoors, avoid crowded
or poorly ventilated areas

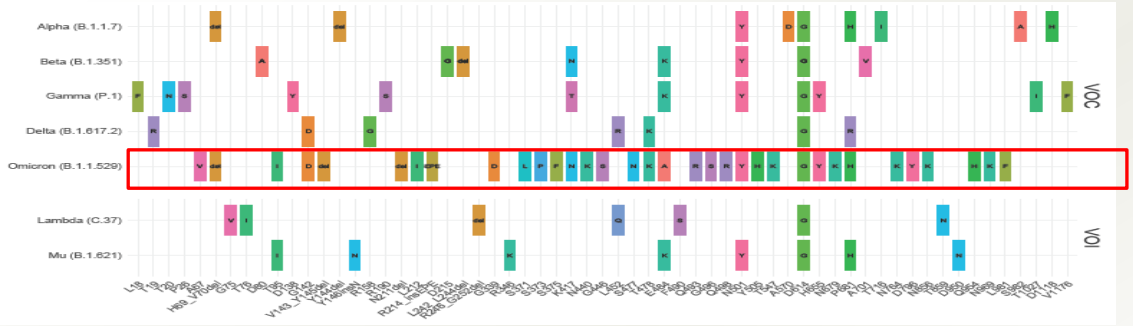
Wear a
well-fitting mask


Omicron is highly transmissible
and is rapidly replacing Delta as the dominant SARS-CoV-2 variant
Omicron appears to prefer infecting the upper respiratory tract,
unlike other SARS-CoV-2 variants of concern
Vaccines protect against hospitalization
but are less effective against Omicron symptomatic disease; and booster doses increase vaccine effectiveness
There is increasing evidence of immune evasion
as Omicron shows increased risk of both re-infection and breakthrough infection after vaccination
Update on
Omicron
Summary
14 Jan 2022
In places with high population immunity,
Omicron also appears to have a reduced risk of severe disease and hospitalizations
Older persons and those with underlying conditions
continue to be at high risk of severe disease
Higher incidence of cases and milder infection with Omicron
has led to a decoupling of cases and hospitalization rates; but there are significant numbers of hospitalized patients as a result of the high levels of transmission
Measures such as wearing a well-fitting mask properly,
keeping physical distance and other public health and social measures continue to protect against all SARS-CoV-2 variants

Evolution of SARS-CoV-2



Changes in the spike protein of VOC and VOI



Omicron

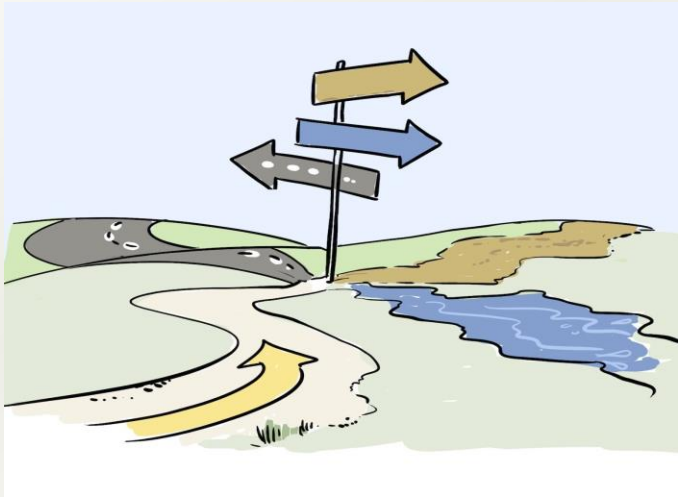
Three potential scenarios

Scenario N°1: 5th endemic coronavirus

SARS-CoV-2 remains highly contagious but causes mild illness in the majority of cases. The virus can be grouped with the 4 other coronaviruses that circulate endemically. This scenario is not unrealistic, but it may take many years to be realized

Scenario N°2: "Flu-Like"

The disease presents itself as recurring epidemics when the conditions of transmission are favorable (similar to seasonal influenza). Since the population has basic immunity, severe forms of the disease are observed only in people at risk. It will be important to continue to vaccinate at-risk groups and adopt preventive measures when transmission is high



Scenario 3: Ongoing pandemic through new VOCs

A new variant emerges evading acquired immunity and resulting in a large number of cases. The health system is overloaded and therefore there are more deaths. The situation is very similar to what was experienced at the beginning of 2020 in many regions of the world

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We are **#InThisTogether** against COVID-19

www.who.int/epi-win