Signals and Events Detected every Month

9,000,000 pieces of information retrieved

43,000 signals screened

4500 events interrogated

30 events verified

Rapid Risk Assessment
Event Information Site (IHR-NFP)
Disease Outbreak News
# Daily Signal List

**For internal use only - daily list of signals, DHQ, 19 February**

<table>
<thead>
<tr>
<th>Signal/Event description</th>
<th>Region</th>
<th>Country Affected</th>
<th>Disease</th>
<th>Status</th>
<th>Source</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SUPECTED AVIAN INFLUENZA A(H5N8):</strong> Update of the signal reported on 7 February. The Ministry of Health of Saudi Arabia confirmed there was not confirmed human case of avian influenza A(H5N8).</td>
<td>EMRO</td>
<td>Saudi Arabia</td>
<td>Suspected avian influenza A(H5N8)</td>
<td>Update</td>
<td>EMRO</td>
<td>Monitoring.</td>
</tr>
<tr>
<td><strong>CHOLERA:</strong> As of 9 February, according to a national authority, a total of 19 imported cholera cases from India were reported in Almaty (south-east of the country), Kazakhstan. On 6 February, we reported 5 cases (4 confirmed).</td>
<td>EURO</td>
<td>Kazakhstan</td>
<td>Cholera</td>
<td>Update</td>
<td>Media</td>
<td>Monitoring.</td>
</tr>
</tbody>
</table>

*If blank, then same as Country Affected or unknown*

**TT** – Technical team

---

With regards,

---

See more about outbreak.
Verifying Signals on the Ground
Rapid Risk Assessments [N=274], 2017 to 2020

Number of Rapid Risk Assessments by National Risk Level

Proportion of Rapid Risk Assessments by National Risk Level
Public Emergency Dashboard

https://extranet.who.int/publicemergency
COVID-19 SURVEILLANCE
Global Surveillance for human infection with novel coronavirus (2019-nCoV)
Interim guidance
21 January 2020


Background
This document summarizes WHO’s interim guidance for global surveillance of novel coronavirus infection (2019-nCoV). WHO will continue to update this guidance as new information about 2019-nCoV becomes available. Updated information about 2019-nCoV can be found here along with other guidance documents. https://www.who.int/health-topics/coronavirus

Purpose of this document
This guidance is for global surveillance of 2019-nCoV for health emergencies programme.

Case definitions for surveillance
The case definitions are based on the current information available and may be revised as new information accumulates. Countries may need to adapt case definitions depending on their own disease situation.

Suspect case
A. Patients with severe acute respiratory infection (fever, cough, and requiring admission to hospital), AND with no other etiology that fully explains the clinical presentation and at least one of the following:
- a history of travel to or residence in the city of Wuhan, Hubei Province, China in the 14 days prior to

Publication Dates
11 January 2020
21 January 2020
31 January 2020
27 February 2020
20 March 2020
7 August 2020
16 December 2020
COVID-19 Data Flow Leveraging the Global Influenza Surveillance Capacities

**Input**
- WHO Country Office
- WHO Regional Office

**Harmonization**
- WHO HQ

**Outputs**

**External Data Sources**
- PHSM
- OWID
- Oxford stringency
- Google/Apple Mobility

---

**Diagram:**
- Direct Call
  - Scheduled Job
  - DAILY-aggregates
    - RO and NPFs
    - Regional consolidation
    - Data on dashboards or in google sheets
  
  - Case Report Forms
    - RO and NPFs
    - Regional Data Platforms
    - Excel

  - WEEKLY aggregates
    - RO and NPFs
    - Surveillance Data Hub
    - Excel

- WHO Country Office
- WHO Regional Office
- Other Data Sources
- WHO HQ
## COVID surveillance data in WHO HQ

<table>
<thead>
<tr>
<th>Daily aggregated data</th>
<th>Detailed surveillance data</th>
<th>Vaccination data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cumulative and new cases and deaths From WHO regional dashboards and ROs:</td>
<td>Detailed disaggregation of Covid-19 cases and deaths: age, gender, Health Workers, etc</td>
<td>Data from RO and added from publicly available sources</td>
</tr>
<tr>
<td>136 Million Cases, 2.9 Million deaths</td>
<td>99 million cases reported</td>
<td>733 Million vaccine doses administered</td>
</tr>
<tr>
<td>Used for daily presentation, WHO dashboard, situation reports, detailed analysis</td>
<td>Detailed surveillance dashboard, used for analysis and situation reports at HQ, RO and Country Office</td>
<td>Showing which country started vaccination and doses administered</td>
</tr>
</tbody>
</table>

![Image of COVID surveillance dashboard](https://example.com/covid-dashboard.png)
Number of COVID-19 Cases and Deaths Globally Continue to Increase
(data through epi week ending 11 April 2021)

>136 million cases
>2.9 million deaths

Reported week commencing

Americas
South-East Asia
Europe
Eastern Mediterranean
Africa
Western Pacific
Deaths

World Health Organization
Cases Occur Among Younger Adults, Deaths among Older Adults

Source: World Health Organization detailed Covid-19 surveillance data; data as of 14 Apr 2021
Public Health and Social Measures: Example of Germany

Stay-at-home order
Quarantine on entry
Travel restrictions
Gathering restrictions
School measures
Business measures

Reported cases
Reported deaths
$R_t$
Test positivity rate (%)

Date:

Source: World Health Organization
https://worldhealthorg.shinyapps.io/covid/

* measures for which the end date is unknown
Identifying Epidemiological Signals from Trend Data

Automated machine learning approach, applying a range of models on a six-week period → prediction intervals and outliers against current trends flagged

ASMODEE model (Automatic Selection of Models for Outlier Detection for Epidemics)

Source: WHO Surveillance Data
Detection and Assessment of SARS-CoV-2 Variants

Identification of signals
- Event based surveillance
- Member State notifications
- Expert information sharing
- Continuous analyses for unexpected epidemiological trends

Rapid intelligence gathering
- Epidemiology
- Phenotypic implications
  - Age-groups
  - Control measures

Assessment of signals
- Review against VOI/VOC working definitions criteria
- Input from Virus Evolution Working Group

Designated VOI
- Monitor global spread
- Review if further assessment as a potential VOC is required?
- Internal & public communication

Alert for further monitoring
- Continue monitoring and intelligence gathering
- Periodic reassessment with new evidence of changes

Definitions of VOI/VOC: https://www.who.int/publications/m/item/covid-19-weekly-epidemiological-update

33 signals as of 13 April

13 signals pending assessment

3 VOCs
6 VOIs
6 alerts for further monitoring
5 discarded
### Summary of SARS-CoV-2 Variant Surveillance

<table>
<thead>
<tr>
<th>Variant</th>
<th>First detected by</th>
<th>First appearance</th>
<th>Countries reporting cases</th>
<th>Increased transmissibility</th>
<th>Increased severity</th>
<th>Increased reinfection risk</th>
<th>Impacts on diagnostics</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC 202012/01 (B.1.1.7)</td>
<td>United Kingdom</td>
<td>Sep 2020</td>
<td>132</td>
<td>Yes</td>
<td>Inconsistent</td>
<td>No/limited</td>
<td>Limited</td>
</tr>
<tr>
<td>501Y.V2 (B.1.351)</td>
<td>South Africa</td>
<td>Aug 2020</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>P.1 (B.1.1.28.1)</td>
<td>Brazil / Japan</td>
<td>Dec 2020</td>
<td>52</td>
<td>Yes</td>
<td>Limited</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

*See Weekly Epi Update for references and further detail. Generalized findings as compared to wildtype/non-VOC viruses. Based on emerging evidence from multiple countries, including non-peer-reviewed preprint articles and reports from public health authorities and researchers – all subject to ongoing investigation and continuous revision.*
Transmissibility and Replacement of SARS-CoV-2 Variants

Data source: GISAID
Surveillance Outputs

- Daily data packs (internal)
- Weekly epidemiological updates
  https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports
  - Trends of cases and deaths by country
  - Data explorer (PHSM, testing, mobility, other metrics)
- Detailed surveillance data dashboard https://bit.ly/3mQbHcH
- Detailed thematic analyses
Future Considerations

- **Strengthen detection and monitoring of epidemic and pandemic risks**
  - Continuous public health intelligence and risk analysis
  - Accelerate MS participation in the Epidemic Intelligence from Open Sources Initiative
  - Extend existing collaborations with One Health Tripartite+ partners
  - Predictive analytics and intra-pandemic modeling

- **Develop global surveillance of emerging infectious diseases using genomic sequencing data**
  - Tracking emerging risks
  - SARS-CoV-2 variants
  - Rapid synthesis of genomic and epidemiologic

- **Surveillance systems for epidemic and pandemic risk management must go beyond disease outcomes only**
  - Implementation of public health and social measures
  - Laboratory & health systems capacities
  - Infodemic monitoring

- **Major investments in local, national, and global surveillance systems are needed**
  - Sustained national investment for surveillance implementation
  - Integration with response capacities such as emergency operations centers
  - Technology investments to improve data linkage across clinical, laboratory, and other data systems
  - Improved data exchange mechanisms with regional public health bodies and WHO