Public health surveillance for COVID 19

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AIMS:

- The aim of national surveillance for COVID-19 is to enable public health authorities to reduce transmission of SARS-CoV-2, thereby limiting associated morbidity and mortality.

The objectives of COVID-19 surveillance

i. Enable rapid detection, isolation, testing, and management of cases

ii. Detect and contain clusters and outbreaks, especially among vulnerable populations

iii. Identify, follow-up and quarantine contacts

iv. Guide the implementation and adjustment of targeted control measures, while enabling safe resumption of economic and social activities

v. Evaluate the impact of the pandemic on health care systems and society .

vi. Monitor longer term epidemiologic trends and evolution of SARS-CoV-2 virus and monitor trends in covid-19 deaths.

vii. Contribute to the understanding of the co-circulation of SARS-CoV-2 virus, influenza and other respiratory viruses, and other pathogens.

Surveillance approaches

- Comprehensive national surveillance for COVID-19 require adaptation & reinforcement of existing national system.

- Digital technologies for rapid reporting, contact tracing and data management and analysis may support these capacities.

- Surveillance should be maintained even in areas where transmission has been suppressed or controlled, even if there are few or no cases.

- Ongoing surveillance for COVID-19 is also important to understand longer term epidemiological trends.

Actions for comprehensive COVID-19 surveillance include:

- Use, adaptation and strengthening of existing surveillance systems
- Strengthen laboratory and testing capacities
- Use, adaptation and enhancement of public health workforce to carry out case finding, contact tracing and testing
- Include COVID-19 as a mandatory notifiable disease
- Implement immediate reporting
- Establish systems to monitor contact tracing activity.
- Maintain routine syndromic surveillance for other infectious disease.

Essential surveillance for COVID-19

- Considering the potential for rapid and exponential growth of COVID-19 outbreaks, new cases and clusters should be identified and reported as rapidly as possible.
- Data should be included in any relevant epidemiological analyses within 24 hours of diagnosis.
- National authorities should include COVID-19 as a mandatory notifiable disease with requirements for immediate reporting.
- Surveillance systems should be geographically comprehensive, and surveillance for vulnerable or high-risk populations should be enhanced.

Surveillance system across different sites/contexts

System Site/ Context	Immediate case notification	Contact tracing	Virologic surveillance	Cluster investigations	Mortality surveillance	Serologic surveillance
Community						
Primary Care Sites (non-sentinel ILI/ARI)						
Hospitals (non-sentinel ILI/SARI)						
Sentinel ILI/ARI/ SARI sites						
Closed settings*						
Health carea ssociated SARSCoV-2 infection						
Travelers at Points of Entry						

Surveillance approaches by site/context

- Surveillance in the Community
- Surveillance at the primary care level
- Hospital-based surveillance
- Sentinel site (ILI/ARI/SARI) surveillance
- Closed settings
- Health care-associated SARS-CoV-2 infections
- Mortality Surveillance
- Laboratory surveillance

Reporting & analysis of surveillance data

- Data should be reported, compiled, and analyzed daily, with zero reporting when there are no cases.
- Data should be compiled either nationally or at an appropriate government administrative level (e.g. district, province, state).
- In-depth analyses on age, sex, testing patterns and severity should also be conducted on a periodic basis.
- Routine analysis reports should be distributed to every reporting site in the surveillance system and ideally made publicly available via a government website.
- Many national and local public health agencies have developed online dashboards to report surveillance data.

To interpret surveillance data , WHO recommends that the surveillance data be analyzed and presented with clear descriptions of:

- case definitions in use for probable and confirmed cases,
- detection strategies (e.g. active case finding, community detection); and
- testing strategies (targeted or systematic testing, testing limited to hospitalized patients, etc.)
- Changes in definitions or criteria have an impact on multiple epidemiologic parameters, such as the epidemic curve and calculation of the case fatality ratio.

Objectives of global surveillance

- Monitor trends in COVID-19 at national and global levels
- Monitor mortality caused by, and indirectly associated with, COVID-19
- Estimate morbidity and mortality for health care workers
- Assess the impact of control measures.

Weekly aggregated reporting

- The aim of weekly aggregate reporting is to obtain further information on global COVID-19 trends for enhanced analysis.
- New variables are added to take into consideration the new case definition and objectives of global surveillance (health care workers count of cases and deaths)

- Number of confirmed cases
- Number of probable cases
- Number of confirmed deaths
- Number of probable deaths
- Number of individuals hospitalized (confirmed and probable)
- Number discharged (confirmed and probable)
- Number of health care workers infected (confirmed + probable) as a subset of total cases count
- Number of health care workers who died due to COVID-19 (confirmed + probable) as a subset of total death count
- Number of persons tested
- Number of persons tested by PCR
- Confirmed + probable cases by age group and sex
- Confirmed + probable deaths by age group and sex
- Transmission classification

Definition of the categories for transmission pattern

- **No (active) cases** : No new cases detected for at least 28 days (two times the maximum incubation period), in the presence of a robust surveillance system. This implies a near-zero risk of infection for the general population.

- **Imported / Sporadic cases** : Cases detected in the past 14 days are all imported, sporadic (e.g. laboratory acquired or zoonotic) or are all linked to imported/sporadic cases, and there are no clear signals of further locally acquired transmission. This implies minimal risk of infection for the general population.

- **Clusters of cases:** Cases detected in the past 14 days are predominantly limited to well-defined clusters that are not directly linked to imported cases, but which are all linked by time, geographic location and common exposures. It is assumed that there are a number of unidentified cases in the area.
- This implies a low risk of infection to others in the wider community if exposure to these clusters is avoided.

- **Community transmission – level 1 (CT) :** Low incidence of locally acquired widely dispersed cases detected in the past 14 days not linked to specific clusters; transmission may be focused in certain population sub-groups. Low risk of infection for the general population.

- **Community transmission – level 2 (CT2):** Moderate incidence of locally acquired widely dispersed cases detected in the past 14 days; transmission less focused in certain population sub-groups. Moderate risk of infection for the general population.

- **Community transmission – level 3 (CT3):** High incidence of locally acquired widely dispersed cases in the past 14 days; transmission not focused in certain population sub-groups. High risk of infection for the general population.
- **Community transmission – level 4 (CT4):** Very high incidence of locally acquired widely dispersed cases in the past 14 days. Very high risk of infection for the general population

- Reporting of COVID-19 through Global Influenza Surveillance and Response System (GISRS)

- Reporting of COVID -19 in India is through ICMR & district administration.

REFERENCE

WHO (2020), public health surveillance, Interim guidence 16th Dec, 2020.


thank
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