WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
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Global surveillance for COVID-19 caused by human infection with SARS-CoV-2

Background

The COVID-19 infection was first reported in December 2019 in Wuhan, China. Since then, it has spread to several countries worldwide. However, some countries have shown that transmission of COVID-19 from one person to another can be slowed down or eliminated by taking certain urgent measures at the correct time. A good surveillance system is necessary to give guidance for preparedness, readiness and response activities which helps in diagnosing cases faster through active case finding, testing for the disease and contact tracing.

Objectives of the surveillance

- To monitor trends in COVID-19 disease at a national and global level
- To rapidly detect the virus in the countries and monitor the cases in the countries where there is already circulating the virus
- To provide epidemiological information for risk assessment at national, regional and global levels.
- To guide preparedness and response measures by giving timely epidemiological information.

The case definition for the surveillance

The case definition for COVID-19 is periodically updated considering the epidemiological situation, current knowledge of the disease and existing researches etc. It is crucial that the updated case definition is published in a manner that is easily and readily accessible for all concerned.

Suspect case

A - A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath), AND a history of travel to or residence in a location reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset;

OR

B— A patient with any acute respiratory illness AND having been in contact with a confirmed or probable COVID-19 case (see definition of contact) in the last 14 days prior to symptom onset;

OR

C- A patient with severe acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath; AND requiring hospitalization) AND in the absence of an alternative diagnosis that fully explains the clinical presentation.

Probable case

A—A suspect case for whom testing for the COVID-19 virus is inconclusive OR
B—A suspect case for whom testing could not be performed for any reason.

Confirmed case

The laboratory confirmed patients with the COVID-19 infection, irrespective of clinical signs and symptoms. The COVID-19 cases confirmation based on detecting the virus RNA by Nucleic acid amplification tests (NAAT)

Contact

The following exposures are taken as the contacts with the probable or confirmed cases. The exposure should be considered as the period from 2 days prior and 14 days after, the onset of the symptoms.

1. Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes; OR
2. Direct physical contact with a probable or confirmed case; OR
3. Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment; OR
4. Other situations as indicated by local risk assessments.

For confirmed asymptomatic cases, the period of contacts is considered as 2 days before and 14 days after the date on which the sample was taken which led to confirmation as well

Definition of different categories of transmission patterns

- **Category 1** (No cases):

Contents

Countries/territories/areas with no cases.

- **Category 2** (Sporadic cases):

Countries/territories/areas with one or more cases, imported or locally detected

- **Category 3** (Cluster of cases):

Countries/territories/areas experiencing cases, clustered in time, geographic location and/or by common exposures.

- **Category 4** (Community transmission)

Countries/area/territories experiencing larger outbreaks of local transmission defined through an assessment of factors including, but not limited to:

- Large numbers of cases not linkable to transmission chains
- Large numbers of cases from sentinel lab surveillance
- Multiple unrelated clusters in several areas of the country/ territory/area

Reporting surveillance data to WHO

The surveillance data can be reported as case-based reporting or aggregate reporting depending on the transmission pattern of the country and the capacity of the health staff. The aggregate reporting system is used when cases are increasing and case-based reporting is used when cases are decreasing.

- **Case-based reporting system**

The national authorities should report the probable and confirmed, cases of COVID-19 infection within 48 hours, according to the request of the WHO. When case-based reporting is no longer feasible due to the increase in the number of cases; aggregated data case reporting can be used for data surveillance.

- **Aggregate reporting**

The minimum set of aggregate counts is requested at least once per week to see the trend of COVID-19 cases in different countries. The new confirmed cases, the new confirmed cases leading to death from COVID-19 infection, the new confirmed cases hospitalized due to COVID-19 disease, confirmed cases which were discharged, the number of persons tested for COVID-19 infection, the number of new confirmed cases by age groups, the number of new confirmed case death due to COVID-19 infection, the proportion of males among the new confirmed cases and new confirmed cases death should be reported weekly at the national level as requested by WHO.

The transmission pattern should be submitted by the member states at the sub-national level. It should provide two types of metadata:

- Case definition of the country and any changes with the date;
- Epidemiological report by the country

Member state self-reporting platform

The data can be directly reported to the self-reporting platform in two ways: by uploading an excel file directly into the system or manually entering data using a submission platform.

The surveillance system in Singapore

Singapore is one of the countries that has displayed a good COVID-19 disease control system along with maintaining a good surveillance data system. They have detected cases through enhanced surveillance carried out among the hospitalized patients with features of pneumonia and ICU patients as well. Singapore also took aggressive measures to control the local transmission of the disease through early implementation of surveillance mechanisms and detection of cases while their total patient number was still low. They also have taken measures to prevent the spread of the disease by using strict quarantine measures. They have utilized border control measures such as restricting citizen movements as well as international travel and body temperature screening methods at the airport to prevent imported cases. They have denied entry of short term visitors from high-risk countries and imposed a mandatory 14 day quarantine period when entering from high-risk countries. Due to the implementation of the strong surveillance system and their containment measures, they were capable of controlling and slowing down the outbreak.

The surveillance system in South Korea

South Korea has a good healthcare system and they used the digital surveillance system for the contact tracing of Corona patients. They have learned from the outbreak of MERS in 2015 and already recognized the disease controlled system. They have used surveillance technology such as CCTV, tracking of bank cards, mobile phone usage to track the patients and to decide to whom test first. They have used the concept of test, test and test some more as they have sophisticated biotech industries that can produce test kits quickly. Therefore, they could test around 15000 patients per day. Even though most of the countries were used the authoritarian measures to control the COVID-19, South Korea could accomplish a similar level of control and low fatality rate without using those measures.

References

1. World Health Organization. (2019). Global surveillance for COVID-19 caused by human infection with COVID-19 virus: interim guidance

2. Yixiang Ng; Zongbin Li; Yi Xian Chua; Wei Liang Chaw; Zheng Zhao; Benjamin Er; Rachael Pung; Calvin J. Chiew; David C. Lye; Derrick Heng;Vernon J. Lee, (2020) Evaluation of the Effectiveness of Surveillance and Containment Measures for the First 100 Patients with COVID-19 in Singapore, Morbidity and Mortality Weekly Report.

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Table 1 : Water Quality Surveillance
Number of microbiological water samples Feb 2020

District	MOH areas	No: Expected *	No: Received
Colombo	15	90	NR
Gampaha	15	90	NR
Kalutara	12	72	NR
Kalutara NIHS	2	12	NR
Kandy	23	138	NR
Matale	13	78	NR
Nuwara Eliya	13	78	NR
Galle	20	120	NR
Matara	17	102	NR
Hambantota	12	72	NR
Jaffna	12	72	NR
Kilinochchi	4	24	NR
Manner	5	30	12
Vavuniya	4	24	NR
Mullatvu	5	30	NR
Batticaloa	14	84	NR
Ampara	7	42	NR
Trincomalee	11	66	NR
Kurunegala	29	174	NR
Puttalam	13	78	NR
Anuradhapura	19	114	NR
Polonnaruwa	7	42	NR
Badulla	16	96	NR
Moneragala	11	66	NR
Rathnapura	18	108	NR
Kegalle	11	66	4
Kalmunai	13	78	40

* No of samples expected (6 / MOH area / Month)
NR = Return not received

Table 1: Selected notifiable diseases reported by Medical Officers of Health 14th– 20th Mar 2020 (12th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	48	2672	0	13	1	4	0	4	0	14	0	57	0	0	0	2	0	0	6	138	0	14	0	0	**59**	**97**
Gampaha	10	1576	0	3	0	0	0	4	0	19	1	37	0	1	1	1	0	0	3	190	0	8	0	17	**52**	**93**
Kalutara	20	897	0	5	0	4	0	3	0	1	8	94	0	7	0	1	0	0	13	134	0	9	0	0	**61**	**92**
Kandy	21	1059	0	6	0	1	0	7	0	6	0	15	2	36	1	3	0	0	12	92	0	14	0	25	**64**	**100**
Matale	10	420	0	3	0	2	0	1	1	4	0	15	0	2	0	2	0	1	1	32	0	1	10	118	**62**	**98**
NuwaraEliya	2	123	2	9	0	0	0	0	0	0	0	13	0	36	0	1	0	0	2	41	0	6	0	0	**23**	**100**
Galle	3	937	0	10	0	8	0	2	0	12	1	159	0	20	0	1	0	0	6	181	1	15	0	2	**60**	**89**
Hambantota	2	255	0	4	0	0	0	1	1	37	0	53	0	13	0	2	0	0	4	95	0	8	2	231	**75**	**96**
Matara	0	351	0	7	0	3	0	0	0	0	0	81	0	4	0	6	0	0	0	68	0	5	0	117	**50**	**77**
Jaffna	19	1685	1	35	0	0	0	14	0	16	0	10	4	425	0	0	0	1	3	57	0	3	0	0	**35**	**93**
Kilinochchi	3	103	5	15	0	0	0	3	0	0	0	6	1	16	0	0	0	0	0	4	1	4	0	4	**65**	**100**
Mannar	0	117	0	0	0	0	0	1	0	0	0	3	0	1	0	0	0	0	0	1	0	3	0	0	**42**	**98**
Vavuniya	3	226	0	4	0	0	0	3	0	0	0	30	0	1	0	0	0	0	0	10	0	3	0	1	**60**	**100**
Mullaitivu	1	61	0	4	0	0	0	3	0	1	0	10	0	3	0	0	0	1	0	2	0	0	0	5	**36**	**78**
Batticaloa	34	1936	3	36	0	2	0	0	0	4	0	13	0	0	0	0	0	1	4	53	0	9	0	1	**62**	**99**
Ampara	8	279	0	8	0	1	0	0	0	0	1	22	0	0	0	1	0	0	3	57	0	7	0	4	**62**	**100**
Trincomalee	22	2102	0	4	0	0	0	0	0	1	1	11	0	2	0	0	0	0	7	64	0	5	0	0	**51**	**88**
Kurunegala	8	643	0	5	0	4	0	2	0	29	0	54	0	10	0	1	0	0	9	221	1	8	1	153	**56**	**95**
Puttalam	4	331	1	6	0	1	0	2	0	1	0	15	0	9	0	0	0	1	0	52	0	16	0	2	**68**	**96**
Anuradhapur	9	305	0	8	0	1	0	2	0	19	1	114	0	11	0	1	0	1	1	88	0	16	4	81	**55**	**89**
Polonnaruwa	4	180	0	4	0	0	0	0	0	0	1	54	0	0	0	11	0	0	7	63	0	8	3	86	**62**	**99**
Badulla	4	351	0	8	0	2	0	2	0	3	4	98	3	17	0	6	0	0	5	85	0	15	0	4	**63**	**99**
Monaragala	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Ratnapura	7	557	0	27	0	11	0	1	0	13	7	267	0	9	1	9	0	0	2	105	1	32	1	38	**50**	**95**
Kegalle	3	338	0	5	0	3	0	1	0	12	0	65	0	16	0	3	0	0	6	98	0	11	0	9	**62**	**97**
Kalmune	8	797	0	25	0	2	0	0	0	1	0	2	0	2	0	0	0	0	8	150	0	11	0	0	**79**	**100**
SRILANKA	**253**	**18301**	**12**	**254**	**1**	**49**	**0**	**56**	**2**	**193**	**25**	**129**	**10**	**641**	**3**	**51**	**0**	**6**	**102**	**2081**	**4**	**231**	**21**	**898**	**58**	**91**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 20th March , 2020 Total number of reporting units 356 Number of reporting units data provided for the current week: 269 C**-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

14th – 20th Mar 2020 (12thWeek)

Disease	No. of Cases by Province									Number of cases during current week in 2020	Number of cases during same week in 2019	Total number of cases to date in 2020	Total number of cases to date in 2019	Difference between the number of cases to date in 2020 & 2019
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	00	00	00	00	00	01	09	24	- 62.5 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	01	00	01	00	00	00	00	00	02	05	51	86	- 40.6 %
Measles	00	00	00	01	00	00	00	00	01	02	05	21	43	- 51.1 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus	00	00	00	00	00	00	00	00	00	00	01	03	04	0 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	- 25 %
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	06	07	200 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	01	02	20	- 90 %
Tuberculosis	00	00	00	00	00	00	00	00	00	00	118	1455	1997	- 27.1 %

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS =**Congenital Rubella Syndrome

NA = Not Available

Influenza Surveillance in Sentinel Hospitals - ILI & SARI

Month	Human				Animal		
	No Total	No Positive	Infl A	Infl B	Pooled samples	Serum Samples	Positives
March							

Source: Medical Research Institute & Veterinary Research Institute

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

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