



WEEKLY EPIDEMIOLOGICAL REPORT

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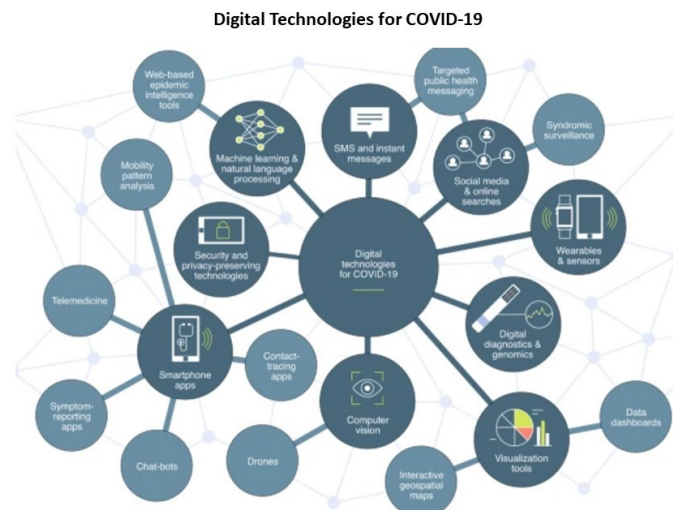
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Application of digital technologies for infectious disease surveillance, prevention and control Part II

Application of Digital technologies during COVID-19 Pandemic

Those with red or yellow codes were directed to undergo 7 to 14 days of quaran-



Budd, J., Miller, B.S., Manning, E.M. et al. Digital technologies in the public-health response to COVID-19. Nat Med 26, 1183–1192 (2020). <https://doi.org/10.1038/s41591-020-1011-4>

The exponential rise in the application of digital technologies to mitigate the transmission of COVID-19 was observed globally. In the year 2020, at the early stages of the pandemic, (on the 11th of February) use of digital technologies in COVID-19 was observed in China with the application of the health status code first launched in Hangzhou city, Zhejiang. Based on big data and mobile internet technologies, residents and those entering the city need to apply online and receive either a green, red, or yellow code. The colours are based on the information reported by the applicants, including their state of health, travel history, and whether they contacted people from epidemic areas. People with green codes were allowed to travel in the city.

tine before the free movement. According to the classification, the government restricts the travel of people with potential infection but allows healthy people to travel freely and resume work. Based on a summary of local experience, the Chinese government promoted a unified health code system throughout the country. Many countries including Sri Lanka adopted such systems which were modified for the local context. To track disease activity in real-time, many countries adopted data dashboards; migration maps; machine learning; real-time data from smartphones and wearable technology. In Sri Lanka, the concept of using data dashboards in disease surveillance was widely used during the COVID-19 pandemic. To screen the population for COVID-19, digital technological solutions

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like artificial intelligence, digital thermometers, mobile phone applications, thermal cameras, and web-based toolkits were used. In Sri Lanka, the use of digital thermometers and mobile phone applications was observed during the pandemic for screening purposes. In addition, to identify high-risk individuals or susceptible individuals, global positioning systems, mobile phone applications, real-time monitoring of mobile devices, and wearable technology were used globally.

The COVID-19 pandemic truly accelerated the application of digital technologies in disease surveillance and opened new avenues for digital applications in outbreak management.

This article was not intended to provide detailed insight into digital applications the infectious disease surveillance, prevention, and control but to provide a brief description with important examples of the use of digital technologies in disease surveillance outside the routine information management systems.

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Table 1 : Water Quality Surveillance Number of microbiological water samples March 2022			
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	12
Jaffna	12	72	NR
Kilinochchi	4	24	NR
Manner	5	30	0
Vavuniya	4	24	NR
Mullatvu	5	30	NR
Batticaloa	14	84	NR
Ampara	7	42	NR
Trincomalee	11	66	NR
Kurunegala	29	174	12
Puttalam	13	78	NR
Anuradhapura	19	114	6
Polonnaruwa	7	42	22
Badulla	16	96	NR
Moneragala	11	66	NR
Rathnapura	18	108	NR
Kegalle	11	66	0
Kalmunai	13	78	NR

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

Table 1: Selected notifiable diseases reported by Medical Officers of Health 09th- 15th Apr 2022 (15th Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		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	27	2382	0	2	0	1	0	0	2	5	0	29	0	0	0	0	1	0	0	0	9	0	3	0	1	7	100
Gampaha	45	1975	0	4	0	0	0	0	0	6	0	28	0	0	0	2	0	1	1	1	9	0	4	0	6	5	72
Kalutara	29	814	0	4	0	0	1	0	5	1	91	0	2	0	1	0	1	1	1	22	0	10	0	0	4	1	
Kandy	19	577	0	3	0	0	0	0	3	0	23	0	11	0	4	0	0	1	17	0	2	0	2	0	5	96	
Matale	6	139	0	0	0	0	0	0	0	0	17	0	2	0	1	0	0	1	7	0	1	0	0	135	14	100	
NuwaraEliya	1	53	0	7	0	0	0	0	0	0	1	18	0	7	0	0	0	0	0	8	0	0	0	0	8	100	
Galle	8	727	0	1	0	0	0	0	0	0	2	122	0	6	0	1	0	0	25	0	9	0	0	0	5	100	
Hambantota	5	232	0	23	0	0	0	0	0	0	1	52	0	15	0	1	0	0	0	12	0	3	1	154	12	100	
Matara	0	261	0	4	0	0	0	0	0	0	0	50	0	5	0	1	0	0	7	0	3	0	0	86	16	100	
Jaiffna	73	1121	0	9	0	2	0	38	2	14	1	16	6	331	0	2	0	1	0	43	0	4	0	0	48	88	
Kilinochchi	0	48	0	4	0	0	0	0	0	11	0	1	0	6	0	0	0	0	1	3	0	0	0	1	30	100	
Mannar	0	142	0	1	0	0	0	0	0	0	0	10	0	2	0	1	0	0	0	0	0	13	0	0	21	81	
Vavuniya	2	43	0	0	0	1	0	1	0	0	1	6	0	1	0	0	0	0	5	0	0	0	0	0	2	82	
Mullaitivu	0	25	0	2	0	0	0	2	0	1	0	9	0	3	0	0	0	0	3	0	0	0	0	1	22	100	
Batticaloa	40	409	0	31	0	5	0	0	0	5	0	15	0	0	0	1	0	0	5	0	16	0	1	29	100		
Ampara	0	46	0	6	0	1	0	0	0	0	0	29	0	1	0	1	0	0	22	0	6	0	0	7	7	100	
Trincomalee	29	434	0	20	0	0	0	1	2	2	0	6	0	1	0	4	0	0	3	6	0	2	0	0	19	92	
Kurunegala	12	1037	1	6	0	1	0	0	1	0	0	28	1	12	0	0	0	0	1	26	0	9	2	155	5	100	
Puttalam	8	828	0	0	0	0	0	0	0	0	0	7	0	3	0	0	0	0	3	0	10	1	3	11	92		
Anuradhapur	0	136	0	7	0	0	0	1	0	2	0	67	0	14	0	2	0	1	1	17	1	12	1	166	5	88	
Polonnaruwa	1	42	0	3	0	0	0	0	1	1	4	42	0	0	0	0	0	0	2	0	2	0	9	130	7	88	
Badulla	8	373	0	4	0	0	0	0	0	5	5	70	0	10	4	32	0	0	18	0	6	0	7	5	100		
Monaragala	4	103	2	5	0	0	1	4	0	2	2	102	1	10	1	18	0	0	1	19	1	12	2	43	5	100	
Ratnapura	10	642	0	13	0	5	0	1	0	15	2	211	0	7	1	9	0	0	1	24	1	12	0	74	6	95	
Kegalle	21	415	1	4	1	2	0	1	0	4	4	127	0	7	0	2	0	0	0	27	0	15	0	9	5	100	
Kalmune	19	246	0	18	0	0	0	0	0	4	0	3	0	1	0	0	0	0	0	10	0	10	0	0	23	100	
SRILANKA	36	13250	4	181	1	18	1	50	6	86	24	1179	8	457	6	84	0	4	12	349	3	164	16	981	11	95	

Source: Weekly Returns of Communicable Diseases (esurveillance.epid.gov.lk). T=Timeliness refers to returns received on or before 15th Apr , 2022 Total number of reporting units 361 Number of reporting units data provided for the current week: 341 C**=Completeness

Table 2: Vaccine-Preventable Diseases & AFP

09th – 15th Apr 2022 (15th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2022	Number of cases during same week in 2021	Total number of cases to date in 2022	Total number of cases to date in 2021	Difference between the number of cases to date in 2022 & 2021
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	01	01	00	00	00	00	00	01	00	03	01	25	17	5.4 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps	00	00	00	00	00	00	00	00	00	00	02	13	34	- 61.7 %
Measles	00	00	00	00	00	00	00	00	00	00	01	10	06	100 %
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	00	01	01	0 %
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	01	00	0 %
Whooping Cough	00	00	00	00	00	00	00	01	00	01	00	01	00	0 %
Tuberculosis	00	00	00	00	00	00	00	00	00	00	158	2265	1998	13.3 %

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
April							

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@slt.net.lk. **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

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