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Strengthening Dedicated Public Health Laboratories in Sri Lanka: Integrating the National CDC for Surveillance - II

This is the second article of two in a series on "Strengthening Dedicated Public Health Laboratories in Sri Lanka: Integrating the National CDC for Surveillance"

Strengthening Laboratory Quality Management Systems (LQMS) in Public Health Laboratories :

The establishment of a **CDC** in Sri Lanka presents a strategic opportunity to integrate and strengthen public health laboratories. This includes scaling up national External Quality Assessment (EQA) systems, defining tiered laboratory networks aligned with surveillance priorities, addressing workforce gaps through targeted training, and expanding digital laboratory information systems for real-time data integration. Institutionalizing biosafety and biosecurity practices, enhancing environmental and microbial surveillance, and promoting operational research will further ensure timely, reliable, and actionable data. Consolidating dedicated public health laboratories under a National CDC framework will enhance outbreak preparedness, protect immunization gains, respond effectively to emerging health threats, and fulfill international obligations such as the **International Health Regulations (IHR 2005).**

Laboratory Quality Management System (LQMS) Training Toolkit

A key component of workforce development is the **LQMS Training Toolkit**, which trains public health laboratory staff in quality management systems to meet international standards. Developed collaboratively by WHO Lyon Office for National Epidemic Preparedness and Response, the U.S. CDC – Division of Laboratory Systems, and the Clinical and Laboratory Standards Institute, the toolkit provides customizable workshop materials and follows **ISO 15189** guidelines. Available online and as a CD-ROM, it strengthens workforce skills, improves laboratory quality, and supports reliable public health surveillance, making it an essential tool within the National CDC framework.

Roles and Functions of Public Health Laboratories

Public health laboratories perform a broad range of critical functions:

1. **Disease Surveillance and Outbreak Detection:** By analyzing samples from hospitals, clinics, and community programmes, these laboratories detect unusual infection patterns and identify outbreaks early, enabling timely containment. They support national and international surveillance systems.
2. **Reference Testing and Standardization:** National reference laboratories validate diagnostic assays, oversee external quality assurance, and confirm complex or rare cases that peripheral laboratories cannot manage.
3. **Research and Innovation:** Public health laboratories conduct pathogen genomics, antimicrobial resistance monitoring, and research on vector-borne and zoonotic diseases to inform policy and intervention strategies.

4. **Emergency Preparedness and Response:** During epidemics or pandemics, these laboratories provide rapid, accurate testing, support contact tracing efforts, and bolster capacity for surge response and treatment strategy planning.

5. **Environmental and Food Safety Testing:** Dedicated laboratories monitor water and food quality, identify environmental hazards, and support public health promotion initiatives.

Challenges and Opportunities:

Despite their importance, public health laboratories often face challenges including inadequate funding, workforce shortages, fragmented networks, and limited digital infrastructure. Emerging threats such as antimicrobial resistance and climate -sensitive diseases underscore the need for continuous investment and modernization. Opportunities lie in integrating laboratory networks, implementing Laboratory Information Management Systems (LIMS), expanding genomic surveillance, and fostering multisectoral collaboration.

National CDC as a Strategic Integrator

The establishment of a National CDC in Sri Lanka provides a strategic opportunity to strengthen dedicated public health laboratories by:

- Scaling up national External Quality Assessment (EQA) and proficiency testing systems.
- Defining and coordinating tiered laboratory networks aligned with surveillance priorities.
- Addressing workforce gaps through targeted training and curriculum development.
- Expanding digital laboratory information systems and real-time data integration.
- Institutionalizing biosafety and biosecurity practices across all laboratories.
- Enhancing environmental and microbial surveillance, including water and food safety.
- Promoting operational research to inform timely public health decisions.
- Supporting One Health approaches and multisectoral collaboration for climate and antimicrobial resistance challenges.

Laboratories dedicated to public health are critical pillars of disease prevention, control, and health security. Their role extends beyond routine diagnostics to population-level surveillance, research, and emergency response. Strengthening these laboratories through investment, workforce development, quality assurance, and digital innovation ensures timely, reliable, and actionable data. Integrating dedicated public health laboratories under a National CDC framework will empower Sri Lanka to enhance outbreak preparedness, protect immunization gains, respond to emerging health threats, and fulfill international obligations under frameworks like the International Health Regulations.

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Table 1: Distribution of Notified Diseases reported by Medical Officers of Health 19th – 25th Jan 2026 (04th Week)

RDHS	Dengue Fever		Dysentery		Encephalitis		En. Fever		F. Poison-		Leptospirosis		Typhus		Viral Hep.		H. Rabies		Chickenpox		Meningitis		Leishman.		Tuberculosis		Leprosy		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	A	B	A	B	T*	C**
Colombo	484	2067	0	1	0	1	1	2	0	2	14	40	0	0	0	0	0	0	22	54	2	4	0	0	35	128	3	27	99	99
Gampaha	269	1106	0	7	0	1	0	0	0	4	8	78	2	2	0	1	0	0	20	60	4	31	1	1	25	95	2	9	91	100
Kalutara	98	421	0	5	0	0	0	2	0	1	11	37	0	0	0	0	0	0	18	63	1	4	0	0	3	54	4	9	95	88
Kandy	84	347	2	3	0	0	0	1	0	3	5	38	3	4	0	5	0	0	12	40	1	4	1	3	15	58	0	2	100	100
Matale	37	127	0	0	0	0	0	0	0	0	10	40	0	1	0	2	0	0	3	26	1	3	17	59	1	12	0	1	98	100
Nuwara Eliya	16	41	3	5	0	0	0	0	0	2	7	30	1	4	2	3	0	0	7	37	2	10	0	0	7	19	0	1	91	100
Galle	129	468	0	1	1	1	0	0	3	7	15	69	0	7	0	2	0	0	14	77	3	13	0	1	11	28	2	6	97	100
Hambantota	88	303	7	13	0	0	0	0	0	1	6	27	1	4	0	1	0	0	4	30	3	7	6	23	2	11	0	4	97	100
Matara	148	530	0	1	1	1	0	0	0	6	8	28	1	3	1	1	0	0	25	75	0	2	4	15	2	18	0	1	94	100
Jaffna	46	191	2	4	0	1	4	6	2	2	1	25	17	51	0	0	0	0	12	41	0	2	0	0	3	17	0	2	99	100
Kilinochchi	2	9	0	0	0	0	0	0	0	0	3	8	1	1	0	2	0	0	1	11	0	0	0	0	1	3	0	0	100	100
Mannar	2	8	0	0	0	1	0	0	0	0	1	9	0	0	0	0	0	0	0	12	0	1	0	2	1	3	0	0	100	100
Vavuniya	6	15	0	3	0	0	0	1	0	0	4	12	1	2	0	0	0	0	0	12	1	3	1	1	4	6	0	0	91	100
Mullaitivu	3	17	1	2	0	0	0	0	0	1	1	6	0	0	0	1	0	0	0	0	0	1	1	2	0	1	1	2	85	100
Batticaloa	42	125	4	10	1	1	0	0	3	4	4	25	0	0	1	3	0	0	5	31	1	3	0	0	3	10	4	14	98	100
Ampara	19	64	2	8	0	0	0	0	0	0	6	22	1	1	0	1	0	0	12	28	2	5	0	2	3	3	1	4	100	100
Trincomalee	16	77	2	7	0	0	1	1	0	1	2	12	4	5	0	0	0	0	4	15	2	3	0	0	2	10	0	2	95	100
Kurunegala	44	175	0	1	0	2	0	1	35	48	15	55	4	12	1	1	0	0	25	85	8	17	25	51	7	25	1	5	96	100
Puttalam	25	118	1	4	2	3	0	0	0	1	12	66	4	5	0	0	0	1	6	19	6	13	1	2	4	15	3	3	100	100
Anuradhapura	14	84	1	1	1	2	0	0	0	2	7	59	0	3	0	0	0	0	17	27	2	4	34	82	4	15	0	5	84	100
Polonnaruwa	11	53	0	1	0	1	0	0	1	9	4	33	0	0	1	3	0	0	11	43	0	2	4	28	0	8	2	6	100	100
Badulla	27	121	0	5	0	1	0	0	0	2	6	29	0	1	2	18	0	0	4	34	2	7	3	16	4	16	1	2	92	100
Monaragala	23	97	2	5	3	3	0	0	0	0	6	40	2	7	1	5	0	0	5	28	1	5	3	21	2	6	3	3	98	100
Ratnapura	93	351	0	1	0	0	0	2	0	3	12	84	1	3	1	3	0	0	16	44	0	1	12	15	15	39	2	7	99	99
Kegalle	50	202	1	3	0	2	0	0	1	5	13	39	0	2	0	2	0	0	16	79	0	5	1	1	8	24	2	2	85	100
Kalmunai	37	96	1	8	0	0	0	0	2	3	4	12	0	1	0	0	0	0	8	38	0	7	0	0	0	9	0	3	100	100
SRILANKA	**1813**	**7213**	**29**	**99**	**9**	**21**	**6**	**16**	**47**	**107**	**185**	**923**	**43**	**119**	**10**	**54**	**0**	**1**	**267**	**1009**	**42**	**157**	**114**	**325**	**162**	**633**	**31**	**120**	**96**	**99**

Source: WRCD module of the EPINET.
A = Cases reported during the current week;
T*=Timeliness refers to returns received on or before 25th Jan, 2026.
B = Cumulative cases for the year.
Total number of reporting units 360.
Data provided for the current week: 360.
C**-Completeness;

Table 2: Selected Vaccine Preventable Diseases & AFP 19th – 25th Jan 2026 (04th Week)

Disease	No. of Cases by Pro'vince									Number of cases during current week in 2026	Number of cases during same week in 2025	Total number of cases to date in 2026	Total number of cases to date in 2025	Difference between the number of cases to date in 2026 & 2025
	W	C	S	N	E	NW	NC	U	Sab					
AFP[1]	00	00	00	00	00	00	00	00	00	00	01	09	05	80%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps[2]	01	01	00	00	00	01	00	00	00	03	03	10	20	-50 %
Measles[3]	00	00	00	00	00	00	00	00	00	00	00	00	01	-100 %
Rubella[3]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
CRS[2]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Tetanus[2]	00	00	00	00	00	00	00	00	00	00	00	00	01	-100 %
Neonatal Tetanus[2]	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Japanese Encephalitis[3]	00	00	00	00	00	00	00	00	00	00	01	00	03	-100 %
Whooping Cough[2]	00	00	00	00	00	00	00	00	00	00	00	01	03	-66.6 %

Key to Table 2
Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

Data Sources:
Weekly Return of Communicable Diseases: Diphtheria, Mumps, Tetanus, Neonatal Tetanus, Whooping Cough.
Special Surveillance: AFP, Measles, Rubella, CRS.

AFP[1] = No Polio cases
Mumps[2], CRS[2], Tetanus[2], Neonatal Tetanus[2], Whooping Cough[2]—Clinically and/ or laboratory confirmed cases
Measles[3], Rubella[3], Japanese Encephalitis[3]— Laboratory Confirmed cases

AFP—Acute Flaccid Paralysis
CRS = Congenital Rubella Syndrome
NA = Not Available

AFP and all Vaccine Preventable Diseases except Mumps should be investigated by the MOH Personally.

Take prophylaxis medications for Leptospirosis during the paddy cultivation and harvesting seasons.

It is provided free by the MOH office / Public Health Inspectors.

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.** The Epidemiology Unit should be formally acknowledged in all resulting publications as the primary data source.

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