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National Immunization Programme Implementation: Operational Experience from managing an ISRR cluster following HPV vaccination in Puttlam District, Sri Lanka

This is the first article of two in a series on "National Immunization Programme Implementation: Operational Experience from managing an ISRR cluster following HPV vaccination in Puttlam District, Sri Lanka"

The National Immunization Programme (NIP) in Sri Lanka has achieved high coverage and control of vaccine-preventable diseases through strong health system foundations. However, sustaining these gains depends heavily on effective district-level implementation. This article describes the role of the district technical team in implementing the immunization programme in Puttlam District, with specific emphasis on field-level experiences, including the investigation and management of an Immunization Stress -Related Response (ISRR) cluster following Human Papillomavirus (HPV) vaccination in February 2025. The experience highlights the importance of adaptive leadership, capacity building, risk communication, and system strengthening in maintaining programme resilience.

Introduction

Sri Lanka's immunization programme is a globally recognized success, achieving consistently high coverage and contributing to the control and elimination of several vaccine-preventable diseases. While national-level policy and technical guidance provide the framework, by Epidemiology Unit implementation is largely dependent on district-level teams.

District Health System Context

The immunization programme in Puttlam is implemented by the Regional Director of Health Services (RDHS), with technical expertise provided by the Consultant Community Physician (CCP) under the guidance of Epidemiology Unit. Service delivery occurs through Medical Officer – Maternal and Child Health/ Epidemiology, and Medical Officer of Health (MOH) supported by Public Health Midwives (PHMs) and Public Health Inspectors (PHIs). Routine immunization services include fixed clinics, and school-based vaccination programmes, including HPV vaccination for adolescents.

Puttlam District presents unique challenges, including population mobility, socio-cultural diversity, complex socio-political context, and varying human resource strengths. These factors necessitate strong, context-specific technical leadership to ensure equitable and effective immunization service delivery.

ISRR in the Context of HPV Vaccination

Immunization Stress-Related Response (ISRR) covers an entire spectrum of manifestations arising from a stress response in the context of immunization, with individual responses varying from person to person and ranging from solitary events to group clusters — events that have, in some instances, led to disruption of national immunization programmes. ISRR prevention is especially critical in situations where multiple risk factors converge — a prime example being HPV immunizations delivered within the context of a school-based program, where environmental, psychological, and social stressors interact. ISRRs may occur before, during, and after vaccine administration, arising from anxiety about immunization, and can include vasovagal reactions (fainting, nausea), hyperventilation, and stress-related neurological reactions; mass reporting of ISRR during school-based vaccination programmes has at times led to marked reductions in vaccine uptake.

A well-documented psychophysiological trigger for ISRR is needle phobia (trypanophobia), which is disproportionately prevalent among the adolescent age group and young adults. Late school-age and adolescent youth appear to be at higher risk of ISRR than other age groups, and individuals with a history of vasovagal reactions — including syncope — and/or a high level of needle fear may be particularly at risk. An acute stress response can vary in severity from mild worry to severe responses, including difficulty breathing and rapid hyperventilation. In contrast, a vasovagal reaction — a fainting response ranging from mild dizziness to loss of consciousness — can follow a sudden decrease in heart rate and drop in blood pressure, with symptoms typically presenting within five minutes of immunization. The downstream effect on HPV uptake is measurable: among preadolescents (10 -12 years) assessed for needle anxiety, only 27% of those in the highest quartile of needle fear had initiated the HPV vaccine series by age 14, compared to 48% in the least anxious quartile — a nearly twofold gap driven directly by fear (Baxter AL, Cohen LL, 2017). A systematic review and meta-analysis found that the overall prevalence of pain or needle fear as an obstacle to vaccination was 8% in the general child (0-18 years) population and 18.3% in under-vaccinated populations (Li Z, Wang Y, 2025).

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Table 1 : Water Quality Surveillance
Number of microbiological water samples January 2026

District	MOH areas	No: Expected *	No: Received
Colombo	18	108	**33**
Gampaha	15	90	**NR**
Kalutara	13	78	**89**
Kalutara NIHS	2	12	**33**
Kandy	23	138	**24**
Matale	13	78	**17**
Nuwara Eliya	13	78	**39**
Galle	20	120	**NR**
Matara	17	102	**91**
Hambantota	12	72	**74**
Jaffna	14	84	**141**
Kilinochchi	4	24	**17**
Mannar	5	30	**NR**
Vavuniya	4	24	**28**
Mullatvu	6	36	**16**
Batticaloa	14	84	**NR**
Ampara	7	42	**23**
Trincomalee	12	72	**0**
Kurunegala	29	174	**48**
Puttlam	13	78	**11**
Anuradhapura	23	138	**5**
Polonnaruwa	9	54	**18**
Badulla	16	96	**105**
Moneragala	11	66	**85**
Rathnapura	20	120	**NR**
Kegalle	11	66	**19**
Kalmunai	13	78	**NR**

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

To be Continued….

Table 1: Distribution of Notified Diseases reported by Medical Officers of Health 09th – 15th Feb 2026 (07th 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	366	3298	0	2	0	1	0	4	0	4	3	94	0	0	0	0	0	0	9	101	2	8	1	1	42	241	5	39	100	100
Gampaha	249	1833	0	11	1	5	0	0	3	7	6	116	0	2	1	2	0	0	28	128	3	44	1	3	16	143	2	12	100	100
Kalutara	89	672	3	8	0	1	0	2	0	2	8	67	0	0	0	0	0	0	9	114	2	9	0	0	7	95	4	20	99	100
Kandy	59	516	3	9	0	0	0	1	0	4	0	41	2	10	0	6	0	0	9	90	0	6	3	8	8	91	0	2	100	100
Matale	26	218	0	1	0	1	0	0	0	0	7	58	1	2	0	3	0	0	13	43	1	5	5	93	5	18	0	2	95	100
Nuwara Eliya	7	68	2	12	0	0	0	1	0	2	6	49	0	10	1	5	0	0	25	75	3	20	0	0	5	30	0	2	100	100
Galle	126	843	1	2	0	2	0	1	5	18	14	108	0	8	1	4	0	0	20	145	6	26	0	1	8	48	2	8	99	100
Hambantota	37	442	6	19		0	0	0	0	1	5	39	1	5	0	2	0	0	6	58	1	8	1	44	5	23	0	5	100	100
Matara	146	987	1	2	0	1	0	0	1	9	12	48	0	4	3	5	0	0	14	123	1	6	10	30	4	27	0	2	100	100
Jaffna	35	314	1	10	0	2	0	7	1	3	0	29	9	95	0	0	0	0	16	90	1	5	0	0	9	30	1	3	100	100
Kilinochchi	3	17	0	1	0	0	0	2	0	0	0	12	0	5	0	2	0	0	36	48	0	0	0	0	1	4	1	1	100	100
Mannar	3	18	0	0	0	1	0	0	0	0	1	14	0	0	0	0	0	0	7	25	1	2	0	2	0	8	0	1	100	100
Vavuniya	5	29	1	5	0	0	0	1	0	0	3	17	0	2	0	0	0	0	13	26	1	5	1	4	1	13	0	1	100	100
Mullaitivu	2	23	0	2	0	0	0	0	0	1	1	8	0	0	0	1	0	0	0	0	0	1	0	2	1	4	0	3	90	100
Batticaloa	52	305	0	15	0	1	0	0	0	11	5	41	0	0	0	3	0	0	21	61	0	3	0	0	9	27	5	20	100	100
Ampara	17	109	1	12	0	1	0	0	2	4	3	32	0	1	0	1	0	0	0	47	3	8	0	2	3	11	0	5	100	100
Trincomalee	22	133	0	8	0	2	0	1	0	1	1	19	0	6	0	0	0	0	3	25	0	6	0	3	5	23	0	2	98	100
Kurunegala	36	305	1	3	2	4	0	1	0	55	8	84	2	15	3	4	0	0	25	146	2	25	14	84	12	48	0	11	100	100
Puttlam	22	190	2	6	0	3	0	0	0	1	4	77	1	9	0	0	0	1	12	33	1	18	1	4	2	20	0	7	96	100
Anuradhapura	23	150	0	3	0	2	0	0	1	3	5	73	2	7	0	1	0	0	1	63	3	8	24	128	1	28	0	7	95	100
Polonnaruwa	10	88	1	2	0	1	0	0	2	13	7	53	0	0	0	4	0	0	4	67	1	5	15	66	5	15	1	9	100	100
Badulla	35	192	1	9	0	1	0	0	0	2	7	49	1	4	3	32	0	0	13	72	3	10	2	20	11	36	0	2	97	100
Monaragala	16	159	0	5	0	3	0	0	0	0	6	60	2	11	0	9	0	0	10	56	0	9	7	40	2	12	2	9	100	100
Ratnapura	106	634	2	7	1	2	0	2	0	5	15	132	4	11	0	3	0	0	5	72	2	9	2	30	11	62	0	7	93	100
Kegalle	41	311	1	6	0	2	0	1	2	13	9	61	1	4	0	2	0	0	2	99	0	11	1	3	9	47	0	2	88	100
Kalmunai	16	187	1	11	0	0	0	0	0	3	0	13	0	1	0	0	0	0	0	56	2	10	0	0	3	17	1	5	100	100
SRILANKA	**1549**	**12041**	**28**	**171**	**4**	**36**	**0**	**24**	**17**	**162**	**136**	**1394**	**26**	**212**	**12**	**89**	**0**	**1**	**301**	**1863**	**39**	**267**	**88**	**568**	**185**	**1121**	**24**	**187**	**98**	**100**

Source: WRCD module of the EPINET.
A = Cases reported during the current week;
T*=Timeliness refers to returns received on or before 15th Feb, 2026.
B = Cumulative cases for the year.
Total number of reporting units 360.
C**-Completeness;

Table 2: Selected Vaccine Preventable Diseases & AFP 09th – 15th Feb 2026 (07th 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	01	00	00	01	00	13	07	85.7%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0 %
Mumps[2]	01	00	01	01	00	00	01	00	00	04	01	21	18	16.6 %
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	04	-100 %
Whooping Cough[2]	00	00	00	00	01	00	00	00	00	01	00	04	06	-33.3 %

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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