This is the first of two articles on the activities carried out by the Epidemiology unit during the preceding year. 2018 was a successful and eventful year for the Epidemiology unit.

Disease surveillance

Disease surveillance is the backbone of the country's communicable disease control programme and the Epidemiology unit carries out this task successfully for decades with utmost dedication. Timely collection of relevant data, analyzing, interpretation and dissemination of the disease-related information to the relevant stakeholders are the key to the success of the programme.

e-Surveillance is the web-based weekly updating disease surveillance system, which was started in 2015. It was implemented to minimize the errors encountered in the paper-based system and now it has become the main source of data in the disease surveillance programme. Currently, all 353 Medical Officers of Health (MOH) divisions are sending data through the e-Surveillance with near 100% completeness and 90% timeliness.

National Immunization Programme

National Immunization Programme (NIP) is one of the major responsibilities upon the Epidemiology unit. Currently, NIP protects the nation from 12 dreadful communicable diseases and 2 non-communicable diseases.

HPV vaccination: post introduction Evaluation

Introduction of HPV vaccine was done in the last quarter of 2017. Post Introduction Evaluation (PIE) is recommended by WHO for countries to conduct after a new vaccine introduction within 6 months to 1 year time period. Considering this recommendation, PIE after HPV vaccination was conducted in September 2018.

The PIE intended to identify and rectify any programmatic and logistical gaps to address in smooth implementation. At the same time, the country also intended to document the findings and lessons learnt in order to use in future new vaccine introductions. The PIE was conducted in randomly selected 11 districts aiming to evaluate the overall progress of the introduction of HPV vaccine in the national immunization programme to identify problem areas needing correction within the immunization programme either pre-existing or resulting from the introduction of a new vaccine and to provide valuable lessons for future new vaccine introductions.

The evaluation method was focused on a range of programmatic aspects such as pre-introduction planning, vaccine stock management, vaccine cold chain maintenance, implementation process of the vaccine, monitoring of vaccine wastage, logistics of administering...
the vaccine, and community receptiveness to the vaccine and con.

In each district 2 MOH areas were evaluated including school HPV vaccination sessions, interviewing students and parents. The vaccine storing cold rooms at district level were evaluated for district-level stock management and vaccine storage. Immunization programme technical experts and independent evaluators were included in the team.

Cold chain maintenance was satisfactory at all levels with minimum vaccine wastage. Vaccination coverage for 2017 Grade 6 girl cohort was identified as 90% and the follow-up 2nd dose to date of the review was 58%. The same for 2018 Grade 6 girl cohort to the date of the review was 88% for the 1st dose and 21% for the 2nd dose. The evaluators have noted that the final dose for both age cohorts was due in MOH schedules and be further continued during the rest of the year and the following year and the 2nd dose coverage would be achieved. However, data transferring system identified requirement of improvement as the web-based immunization system identified the real-time data and separate birth cohort data identification and a separate each dose identification has some limitations to be improved.

Polio sero survey

National Immunization Schedule replaced one intramuscular dose of inactivated polio virus vaccine (IPV) with two doses of intradermal fractional IPV (fIPV) in July 2016, in response to the global scarcity of IPV with a view to continuation of IPV.

Gradual withdrawal of OPV, in the process of polio eradication and the polio endgame strategic plan, one intramuscular dose of IPV was introduced in 2015 with planned “Polio Switch” in April 2016 to change over trivalent OPV (containing polio virus 1,2,3) to bivalent OPV (containing polio virus 1,3).

A survey of seroprevalence of anti-polio antibodies in children who had received two fIPV doses was compared with those who received one full IPV dose with the aim of identifying adequate population protection level for polio virus type 2.

Children born between March and December 2016 were randomly selected from three districts (Colombo, Badulla, and Anuradhapura) for the study. Sera were collected and tested for the presence of neutralizing antibodies to poliovirus types 1, 2, and 3 by sending samples to Global Polio Laboratory at CDC, Atlanta.

Seroprevalence of anti-polio antibodies was 100% in all districts for polio virus type 1 (PV1) and PV3; it ranged between 90-93% for PV2 in children who had received one full IPV dose and between 78-100% in those receiving two fIPV doses (p=0.217). Median reciprocal titers of anti-PV2 antibodies were similar in those who had received full IPV vs fIPV (1:64 vs 1:45 respectively; p=0.110).

The seroprevalence of anti-PV2 antibodies did not decrease after the introduction of fIPV. In fact, this study demonstrated that Sri Lanka is maintaining adequate immunity to polio virus type 2 even though changing over to fractional dose IPV schedule. Sri Lanka is the first country changed over to 2 intradermal fractional dose IPV schedule national wide and this is the first global evidence available at community level research study in assessing population-level immunity to polio virus type 2 after 2-fractional doses of IPV.

Measles, Rubella and Congenital Rubella Syndrome (CRS) Elimination programme.

Sri Lanka is experiencing a Measles outbreak from 2013 to 2016 period with gradually reducing the intensity and the outbreak was successfully waned out in 2016.

On par with the Regional Measles, Rubella / CRS elimination strategic plans, Sri Lanka has set the goal for the elimination of Measles, Rubella and CRS by 2020. To achieve this target Measles, Rubella CRS elimination guidelines were updated by introducing more sensitive surveillance case definition of “fever and maculopapular rash” with essential early laboratory investigations for suspected Measles/Rubella and CRS cases

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|-------------------|--------|---------|-------|----------|------------|--------|----------|--------|------------|--------|-------------|-------|---------|-------|-------------|---------|-----------|--------|----------|------------|-------------|-------------|----------|--------|---------|-----------|-------------|--------|--------|--------|--------|--------|--------|
## Table 2: Vaccine-Preventable Diseases & AFP

<table>
<thead>
<tr>
<th>Disease</th>
<th>No. of Cases by Province</th>
<th>Number of cases during current week in 2018</th>
<th>Number of cases during same week in 2017</th>
<th>Total number of cases to date in 2018</th>
<th>Total number of cases to date in 2017</th>
<th>Difference between the number of cases to date in 2018 &amp; 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFP*</td>
<td>W 00 C 00 S 00 N 00 E 01 NW 00 NC 00 U 00 Sab 01</td>
<td>NA</td>
<td>70</td>
<td>67</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Diphtheria</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>00</td>
<td>00</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Mumps</td>
<td>W 00 C 00 S 00 N 00 E 01 NW 00 NC 00 U 03 Sab 04</td>
<td>NA</td>
<td>364</td>
<td>302</td>
<td>20.5%</td>
<td></td>
</tr>
<tr>
<td>Measles</td>
<td>W 01 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 01</td>
<td>NA</td>
<td>129</td>
<td>201</td>
<td>-35.8%</td>
<td></td>
</tr>
<tr>
<td>Rubella</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>08</td>
<td>10</td>
<td>-20%</td>
<td></td>
</tr>
<tr>
<td>CRS**</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>00</td>
<td>01</td>
<td>-100%</td>
<td></td>
</tr>
<tr>
<td>Tetanus</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>20</td>
<td>16</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Neonatal Tetanus</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>00</td>
<td>00</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Japanese Encephalitis</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>15</td>
<td>22</td>
<td>-31.8%</td>
<td></td>
</tr>
<tr>
<td>Whooping Cough</td>
<td>W 00 C 00 S 00 N 00 E 00 NW 00 NC 00 U 00 Sab 00</td>
<td>NA</td>
<td>54</td>
<td>24</td>
<td>125%</td>
<td></td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>W 91 C 35 S 19 N 00 E 14 NW 00 NC 12 U 02 Sab 13</td>
<td>NA</td>
<td>8876</td>
<td>8267</td>
<td>7.2%</td>
<td></td>
</tr>
</tbody>
</table>

**Key to Table 1 & 2**

**Provinces:**  

**RDHS Divisions:**  

**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

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**Dengue Prevention and Control Health Messages**

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them free of water collection.

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**ON STATE SERVICE**

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