# WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiological Unit,

**Ministry of Healthcare & Nutrition**

231, de Saram Place,Colombo 01000, Sri Lanka.

Tele:(+94-011)2695112/681548/4740490/4740492,E-Mail:epidunit@sltnet.lk

Epidemiologist:(+94-011) 4740491,E-mail:chepid@sltnet.lk, Web: www.epid.gov.lk

**Vol. 35 No. 2** **5th -11th January 2008**


WER SRI LANKA 2008

## Immunization against diseases of public health importance

**The benefits of immunization :**Vaccines - which protect against disease by inducing immunity are widely and routinely administered around the world based on the common sense principle that it is better to keep people from falling ill than to treat them once they are ill. Suffering, disability, and death are avoided. Immunization averted about two million deaths in 2002. In addition, contagion is reduced, strain on health-care systems is eased, and money is frequently saved that can be used for other health services.

Immunization is a proven tool for controlling and even eradicating disease. An immunization campaign carried out by the World Health Organization (WHO) from 1967 to 1977 eradicated the natural occurrence of smallpox. When the programme began, the disease still threatened 60% of the world's population and killed every fourth victim. Eradication of poliomyelitis is within reach. Since the launch by WHO and its partners of the Global Polio Eradication Initiative in 1988, infections have fallen by 99%, and some five million people have escaped paralysis. Between 1999 and 2003, measles deaths dropped worldwide by almost 40%, and some regions have set a target of eliminating the disease. Maternal and neonatal tetanus will soon be eliminated in 14 of 57 high-risk countries.

New vaccines also have been introduced with significant results, including the first vaccine to help prevent liver cancer, hepatitis B vaccine, which is now routinely given to infants in 77% of WHO's Member States. Rapid progress in the development of new vaccines means protection will be available in the near future against a wider range of serious infectious diseases.

**History :** Introducing a small amount of smallpox virus by inhaling through the nose or by making a number of small pricks through the skin (variolation) to create resistance to the disease appears to have begun in the 10th or 11th century in Central Asia. The practice spread; in Asia and Africa, the method was nasal, while in Europe it involved skin punctures. Variolation was introduced in England in 1721. There, in 1798, Edward Jenner, having studied the success of variolation with cowpox a mild illness in protecting against smallpox, began to carry out inoculations against smallpox, the first systematic effort to control a disease through immunization.

**Commonly used vaccines:**In 1885, Louis Pasteur developed the first vaccine to protect humans against rabies. Toxoids against diphtheria and tetanus were introduced in the early 1900s; the bacillus Calmette-Guérin vaccine (against tuberculosis) in 1927; the Salk polio vaccine in 1955; and vaccines against measles and mumps in the 1960s.

Routine vaccination is now provided in all developing countries against measles, polio, diphtheria, tetanus, pertussis, and tuberculosis. To this basic package of vaccines, which served as the standard for years, have come new additions. Immunization against hepatitis B is now recommended by WHO for all nations, and currently is offered to infants in 147of 192 WHO Member States. Immunization against Haemophilus influenzae type b (Hib) is recommended where the burden of disease is established and resources permit its use; it is provided in 89 countries .

***Contents*** ***Page***

In industrialized countries a wider span of protection is typically provided than in developing countries, often including vaccines against influenza, predominant strains of pneumococcal disease, and mumps (usually in combination with measles and rubella vaccine). Immunization programmes may be aimed at adolescents or adults - depending on the disease concerned as well as at infants and children.

**Global immunization coverage :**Coverage has greatly increased since WHO's Expanded Programme on Immunization began in 1974. In 2003, global DTP3 (three doses of the diphtheria-tetanus-pertussis combination vaccine) coverage was 78% — up from 20% in 1980. However, 27 million children worldwide were not reached by DTP3 in 2003, including 9.9 million in South Asia and 9.6 million in sub-Saharan Africa. Those who miss out on routine vaccination programmes tend to be people living in remote locations, urban slums and border areas. They also include indigenous groups, displaced populations, those lacking access to vaccination because of various social barriers, those lacking awareness or motivation to be vaccinated and those who refuse.

An estimated 2.1 million people around the world died in 2002 of diseases preventable by widely used vaccines. This toll included 1.4 million children under the age of five. Among these childhood deaths, over 500 000 were caused by measles; nearly 400 000 by Hib; nearly 300 000 by pertussis; and 180 000 by neonatal tetanus.

**Vaccines under development:**Numerous new vaccines with major potential for improving health in developing countries will be shortly in use. They include vaccines for rotavirus diarrhoea, which kills 300 000 to 600 000 children under age five every year; human papilloma virus, a leading cause of cervical cancer, which afflicts some 500 000 women each year, 80% of them in developing countries; and pneumococcal disease, which causes a large fraction of the world's approximately two million annual deaths from childhood pneumonia. In addition, a conjugate vaccine now in development should be much more effective against Group A meningococcal disease (Men A), a frequently fatal form of meningitis that causes recurring epidemics in a number of countries in sub-Saharan Africa. Several of these vaccines — those against rotavirus, pneumococcal disease, and Men A — may be available in developing countries by 2008.

**Effectiveness and safety:** All vaccines used for routine immunization are very effective in preventing disease, although no vaccine attains 100% effectiveness. More than one dose of a vaccine is generally given to increase the chance of developing immunity. Vaccines are very safe, and side effects are minor — especially when compared to the diseases they are designed to prevent. Serious complications occur rarely. For example, severe allergic reactions result at a rate of one for every 100 000 doses of measles vaccine. Two to four cases of vaccine associated paralytic polio have been reported for every one million children receiving oral polio vaccine.

**The cost-effectiveness of immunization :**Immunization is considered the most cost-effective of health investments. There is a well-defined target group; contact with the health system is only needed at the time of delivery; and vaccination does not require any major change of lifestyle.

A recent study estimated that a one-week "supplemental immunization activity" against measles carried out in Kenya in 2002 in which 12.8 million children were vaccinated would result in a net saving in health costs of US$ 12 million over the following ten years; during that time it would prevent 3 850 000 cases of measles and 125 000 deaths. In the US, cost-benefit analysis indicate that every dollar invested in a vaccine dose saves US$ 2 to US$ 27 in health expenses.

**The cost of immunizing a child :** In mid-1990s, vaccines to provide "basic" coverage for tuberculosis, polio, diphtheria, tetanus, pertussis, and measles cost about US$ 1 per child. Inclusion of vaccines for hepatitis B and Hib, raises the vaccine cost alone to US$ 7-13 per child (not including administration and injection equipment) in the developing world. When vaccine administration is included, the costs amount to between US$ 20-40 per child. It has become a significant challenge for low-income countries and international health agencies to find ways to introduce more highly-priced vaccines such as those for hepatitis B and Hib, which can greatly increase the costs of national immunization programmes. With many new vaccines expected to be available in the near future, issues of financing and financial sustainability will become ever more important.

**Financing immunization :**Many developing countries have difficulties affording vaccines. International initiatives such as the Vaccine Fund and the Global Alliance for Vaccines and Immunization (GAVI) have provided impetus, funding, and technical support that have helped increase immunization coverage and the number of vaccines provided The economics of vaccine development have tended to run against the interests of the world's poorer countries. Vaccines are much less profitable than medicines, and pharmaceutical firms understandably have been reluctant to make the high investments necessary to research and develop vaccines against infectious diseases, realizing that the largest pool of potential customers are governments that likely could not afford to pay enough for these products to ensure a profit. For the same reason, when new vaccines have been developed, limited quantities often have been manufactured, increasing the cost per dose. Part of the difficulty for manufacturers is in forecasting demand and in accounting for various market uncertainties.

**Source :** Immunization against diseases of public health importance—WHO Fact sheet [http://www.who.int/mediacentre/factsheets/fs288/en/index.html]

## Table 1: Vaccine-preventable Diseases & AFP

29th Dec - 4th Jan 2008 (1st Week)

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2008 | Number of cases during same week in 2007 | Total number of cases to date in 2008 | Total number of cases to date in 2007 | Difference between the number of cases to date between 2008 & 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Acute Flaccid Paralysis | 00 | 01 NE=1 | 01 GL=1 | 00 | 01 BT=1 | 00 | 00 | 01 BD=1 | 00 | 04 | 00 | 04 | 00 | +400.0% |
| Diphtheria | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00.0% |
| Measles | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00.0% |
| Tetanus | 00 | 00 | 00 | 00 | 00 | 01 PU=1 | 00 | 00 | 00 | 01 | 00 | 01 | 00 | +100.0% |
| Whooping Cough | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00.0% |
| Tuberculo-sis | 76 | 119 | 03 | 02 | 24 | 35 | 38 | 14 | 00 | 311 | 162 | 311 | 162 | +91.9`% |

29th Dec - 4th Jan 2008 (1st Week)

## Table 2: Newly Introduced Notifiable Diseases

| Disease | No. of Cases by Province | | | | | | | | | Number of cases during current week in 2008 | Number of cases during same week in 2007 | Total number of cases to date in 2008 | Total number of cases to date in 2007 | Difference between the number of cases to date between 2008 & 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | C | S | N | E | NW | NC | U | Sab | | | | | |
| Chicken-pox | 15 | 03 | 10 | 00 | 13 | 10 | 03 | 01 | 16 | 71 | 05 | 71 | 05 | +1320.0% |
| Meningitis | 04 GM=3 KL=1 | 01 KD=1 | 03 GL=1 MT=2 | 00 | 03 AM=3 | 04 KU=2 PU=2 | 02 AP=1 PO=1 | 02 MO=1 | 06 RP=2 KG=4 | 25 | 10 | 25 | 10 | +150.0% |
| Mumps | 02 | 03 | 10 | 00 | 07 | 06 | 02 | 02 | 04 | 36 | 01 | 36 | 01 | +3500.0% |

**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.

**DPDHS 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.

## Table 3: Laboratory Surveillance of Dengue Fever

29th Dec - 4th Jan 2008 (1st Week)

| Samples | Number tested | Number positive * | Serotypes | | | | |
|---|---|---|---|---|---|---|---|
| | | | $D_1$ | $D_2$ | $D_3$ | $D_4$ | Negative |
| Number for current week | 02 | 00 | 00 | 00 | 00 | 00 | 00 |
| Total number to date in 2008 | 02 | 00 | 00 | 00 | 00 | 00 | 00 |

**Source:** Genetech Molecular Diagnostics & School of Gene Technology, Colombo. * Not all positives are subjected to serotyping.

**NA**= Not Available.

**Data Sources:**

**Weekly Return of Communicable Diseases:** Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephali - tis, Chickenpox, Meningitis, Mumps.

**Special Surveillance:** Acute Flaccid Paralysis.

**National Control Program for Tuberculosis and Chest Diseases:** Tuberculosis.

## Table 4: Selected notifiable diseases reported by Medical Officers of Health

29th Dec - 4th Jan 2008 (1st Week)

| DPDHS Division | Dengue Fever / DHF* | | Dysentery | | Encephal-itis | | Enteric Fever | | Food Poisoning | | Leptos-pirosis | | Typhus Fever | | Viral Hepatitis | | Human-Rabies | | Returns Re-ceived Timely** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | A | B | % |
| Colombo | 49 | 49 | 05 | 05 | 00 | 00 | 05 | 05 | 00 | 00 | 04 | 04 | 00 | 00 | 00 | 00 | 00 | 00 | **92** |
| Gampaha | 44 | 44 | 00 | 00 | 00 | 00 | 01 | 01 | 00 | 00 | 05 | 05 | 00 | 00 | 02 | 02 | 00 | 00 | **86** |
| Kalutara | 13 | 13 | 04 | 04 | 00 | 00 | 01 | 01 | 00 | 00 | 03 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | **91** |
| Kandy | 07 | 07 | 05 | 05 | 00 | 00 | 00 | 00 | 02 | 02 | 07 | 07 | 01 | 01 | 05 | 05 | 00 | 00 | **86** |
| Matale | 03 | 03 | 05 | 05 | 00 | 00 | 01 | 01 | 00 | 00 | 08 | 08 | 00 | 00 | 01 | 01 | 00 | 00 | **75** |
| Nuwara Eliya | 00 | 00 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 01 | 01 | 04 | 04 | 00 | 00 | **71** |
| Galle | 06 | 06 | 03 | 03 | 00 | 00 | 01 | 01 | 00 | 00 | 18 | 18 | 01 | 01 | 00 | 00 | 00 | 00 | **88** |
| Hambantota | 01 | 01 | 04 | 04 | 00 | 00 | 01 | 01 | 00 | 00 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **82** |
| Matara | 10 | 10 | 03 | 03 | 00 | 00 | 09 | 09 | 00 | 00 | 02 | 02 | 04 | 04 | 00 | 00 | 01 | 01 | **100** |
| Jaffna | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **00** |
| Kilinochchi | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **25** |
| Mannar | 00 | 00 | 00 | 00 | 00 | 00 | 07 | 07 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **75** |
| Vavuniya | 03 | 03 | 03 | 03 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **75** |
| Mullaitivu | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **60** |
| Batticaloa | 00 | 00 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 03 | 03 | 00 | 00 | **100** |
| Ampara | 00 | 00 | 05 | 05 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **100** |
| Trincomalee | 01 | 01 | 03 | 03 | 00 | 00 | 00 | 00 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **67** |
| Kurunegala | 16 | 16 | 17 | 17 | 00 | 00 | 01 | 01 | 00 | 00 | 01 | 01 | 00 | 00 | 02 | 02 | 00 | 00 | **94** |
| Puttalam | 15 | 15 | 07 | 07 | 00 | 00 | 01 | 01 | 01 | 01 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **89** |
| Anuradhapur | 14 | 14 | 00 | 00 | 01 | 01 | 01 | 01 | 02 | 02 | 00 | 00 | 02 | 02 | 00 | 00 | 00 | 00 | **79** |
| Polonnaruwa | 04 | 04 | 02 | 02 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 02 | 02 | 00 | 00 | **86** |
| Badulla | 01 | 01 | 02 | 02 | 00 | 00 | 02 | 02 | 00 | 00 | 01 | 01 | 01 | 01 | 01 | 01 | 00 | 00 | **87** |
| Monaragala | 00 | 00 | 11 | 11 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 00 | 00 | 00 | 00 | 00 | 00 | **70** |
| Ratnapura | 03 | 03 | 07 | 07 | 00 | 00 | 01 | 01 | 41 | 41 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | **75** |
| Kegalle | 10 | 10 | 09 | 09 | 01 | 01 | 00 | 00 | 00 | 00 | 05 | 05 | 00 | 00 | 04 | 04 | 00 | 00 | **91** |
| Kalmunai | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 01 | 01 | 00 | 00 | **62** |
| SRI LANKA | **200** | **200** | **98** | **98** | **02** | **02** | **32** | **32** | **47** | **47** | **59** | **59** | **10** | **10** | **25** | **25** | **01** | **01** | **81** |

**Source: Weekly Returns of Communicable Diseases (WRCD).**
***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.
****Timely** refers to returns received on or before 12 January. 2008 Total number of reporting units =290. Number of reporting units data provided for the current week: 238

PRINTING OF THIS PUBLICATION IS FUNDED BY THE UNITED NATIONS CHILDREN'S FUND (UNICEF).

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.

## ON STATE SERVICE

**Dr. M. R. N. ABEYSINGHE**
**EPIDEMIOLOGIST**
**EPIDEMIOLOGICAL UNIT**
**231, DE SARAM PLACE**
**COLOMBO 10**