Introduction

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 into 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.

For the last 200 years, the use of vaccines has continued to reduce the burden of many bacterial and viral diseases globally.

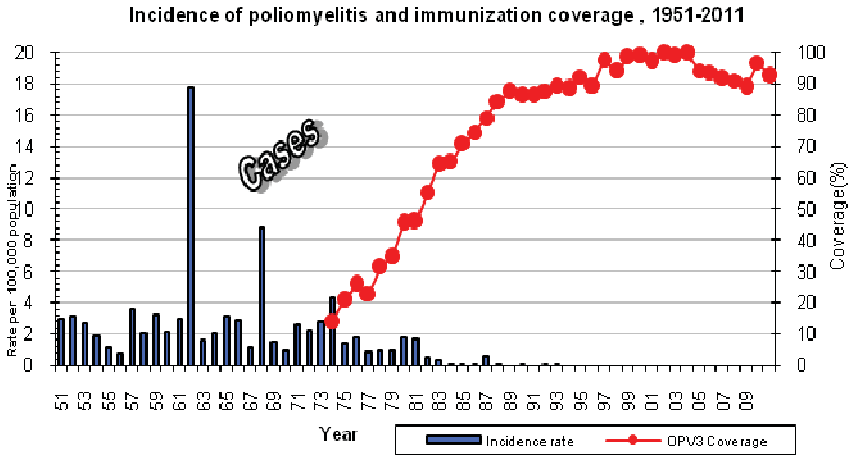
National immunization Programme in Sri Lanka is a major success story. According to the routine immunization coverage as well as periodical surveys conducted, virtually all eligible children and women throughout the country are receiving all their scheduled vaccine at the appropriate time.

Objectives of any immunization programme are to bring down the morbidity and mortality of vaccine preventable diseases. With the high levels of immunization coverage achieved, not surprisingly the target diseases have declined to low levels or are not being detected at all, in spite of acceptable surveillance. Both Polio and diphtheria cases have not been reported since 1993 and 1995 respectively. Poliovirus transmission has probably ceased, neonatal tetanus has reached elimination levels; pertussis is reported at very low levels. After the introduction of measles immunization to the EPI in 1984/85, 2nd dose of measles containing vaccine in 2003 and conduct of measles catchup immunization programmes in 2003 and 2005, the incidence of measles has gradually decreased and already reached elimination levels. It also seems probable that, with the outstanding success of introducing rubella vaccine, cases of the congenital rubella syndrome has already declined to near zero. In the same manner Hepatitis B and Hib diseases also will reach elimination levels in time to come.

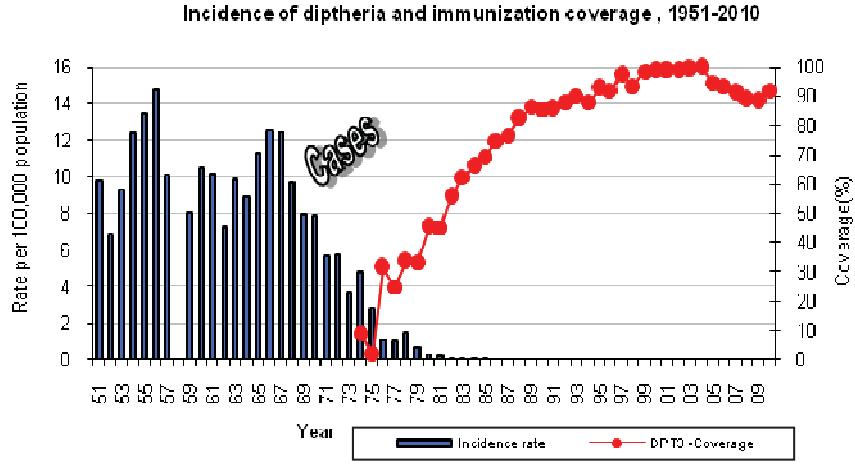
Immunizing a child not only protects that child but also other children by increasing the general level of immunity in population and minimising the spread of infection.

Figure 6: Disease incidence and immunization coverage, Sri Lanka, 1951 -2010

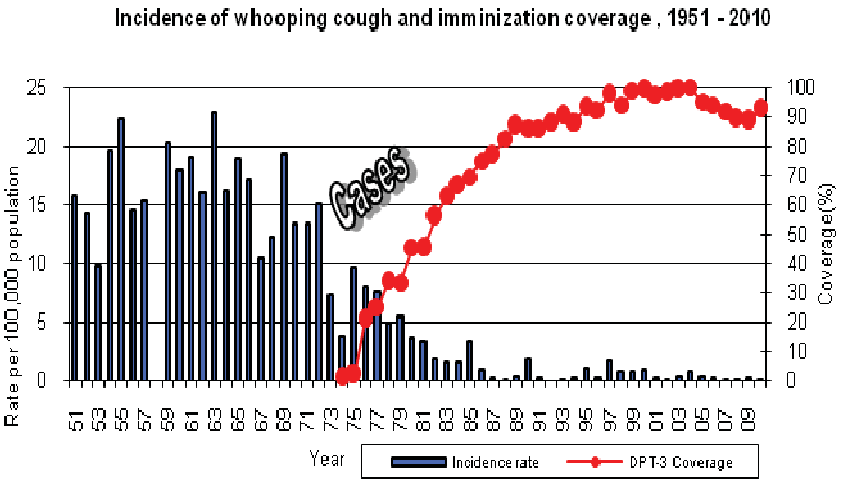
Incidence of Poliomyelitis and OPV3 coverage



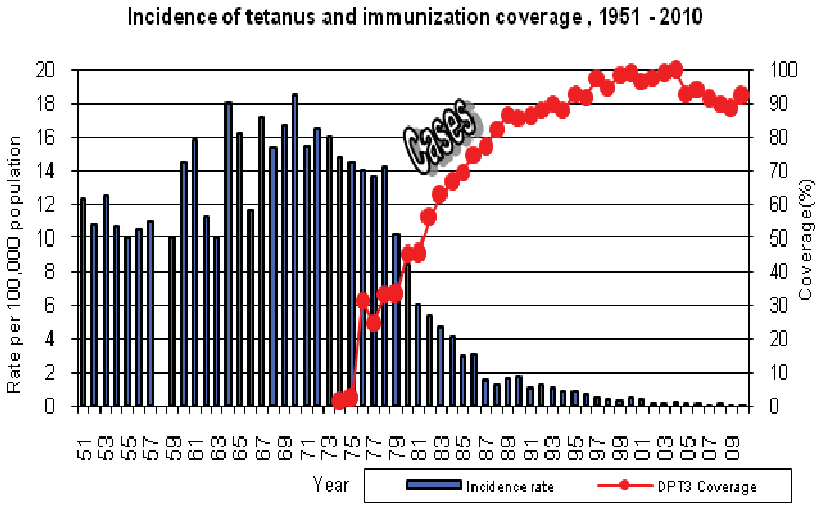
Incidence of Diphtheria and DPT 3 coverage



Incidence of Pertussis and DPT3 coverage

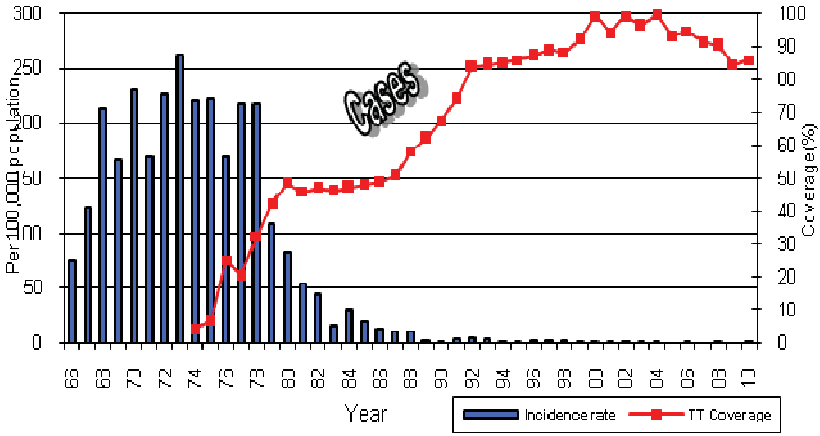


Incidence of Tetanus and DPT 3 coverage



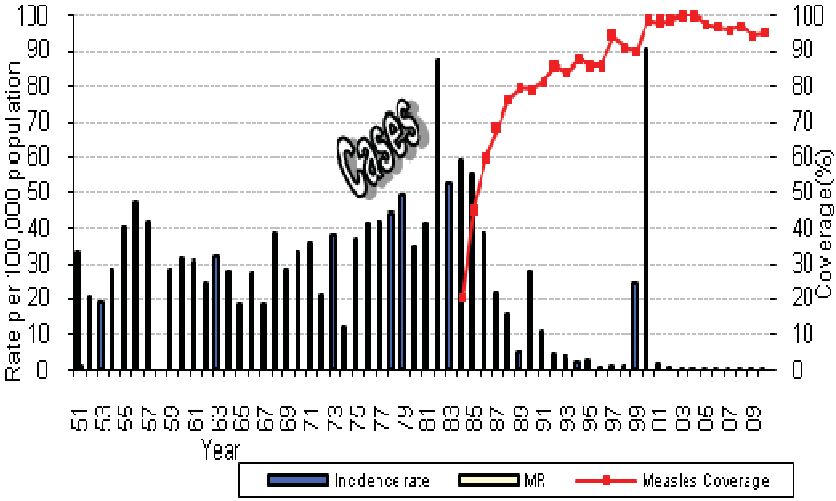
Incidence of Neonatal tetanus and pregnant mothers' tetanus toxoid coverage

Incidence of neonatal-tatanus and TT Coverage , 1966-2010



Incidence of Measles and Measles vaccine coverage

Incidence of Measles and Measles vaccine coverage , 1951-2010



History of Immunization in Sri Lanka

The history of immunization in Sri Lanka goes back to the 19th century. The law relating to compulsory vaccination (against smallpox) is referred to in the Vaccination Ordinance of 1886.

The milestones of immunization in Sri Lanka

1886 Vaccination against smallpox introduced under the Vaccination Ordinance

1949 BCG Vaccination introduced against tuberculosis

1961 "Triple" vaccination introduced against diphtheria whooping cough and Tetanus

1962 Oral polio vaccine introduced

1963 BCG vaccination of newborn introduced

1969 Tetanus Toxoid administration to pregnant mothers introduced

1978 Launching of the Expanded Programme on Immunization

1981 Revision of the immunization schedule and the introduction of a modified list of contraindications

1984 Introduction of Measles vaccine to the EPI

1985 Strengthening of cold chain and logistics in EPI

1988 Introduction of Killed JE vaccine to the EPI

1989 Universal Childhood Immunization (UCI) achieved with over 80% coverage among infant immunizations

1991 Revision of Tetanus Toxoid schedule

1995 Conduct of first Polio National Immunization Days

1996 Introduction of Rubella vaccine

1996 Conduct of the second Polio National Immunization Days

1997 Conduct of the third Polio National Immunization Days

1998 Conduct of the fourth Polio National Immunization Days

1999 Conduct of the fifth Polio National Immunization Days

2000 Consultative meeting held to review the National Immunization Schedule

2000 Conduct of Sub-National Immunization Days

2001 Introduction of the new National Immunization Schedule;

- DTP at 2, 4 and 6 months of age
- Introduced MR vaccine at 3 years
- Introduced aTd at 10 years

2003 Introduction of HBV vaccine and AD syringes to the EPI

2003 Measles catch-up immunization programme

2005 MR catch-up immunization programme

2008 Introduction of Hib containing Pentavalent Vaccine

2009 Introduction of live JE vaccine to the EPI

2011 Revision of the National Immunization Schedule;

- Introduction of MMR vaccine 1st dose at 1 year of age
- Introduction of MMR vaccine 2nd dose at 3 years of age
- live JE vaccine at 9 months of age

The first manual for Medical Officers, giving technical information on the Expanded Programme on Immunization was published in 1979 by the Ministry of Health with the assistance of UNICEF and WHO.

Updated version of this manual was published as National Immunization Hand Book in 2002 and this is the 2012 update of that hand book.

The purpose of this immunization handbook is to give health professionals a clear clinical guidance on safest and most effective use of both EPI and non EPI vaccines in their practice.

Objectives of the National Programme on Immunization

The objectives of the country's EPI are as follows,

- Eradication of Poliomyelitis.
- Elimination of measles, Neonatal Tetanus and Diphtheria.
- Reduction of morbidity and mortality due to Whooping cough, Hepatitis B, Haemophilus influenza, Mumps, Tetanus , Tuberculosis and Japanese encepha litis.
- Reduction of morbidity and mortality due to, CRS and Rubella and prevention of outbreaks.
- Prevention and control of burden of selected diseases through introduction of new vaccines.

By addressing the above objectives, Sri Lanka is expected to eradicate or reduce morbidity and mortality associated with vaccine-preventable diseases to levels that are no longer public health concerns.

National Immunization Schedule

National immunization schedule which was approved by the National Advisory Committee on Communicable Diseases on 3rd June 2011 comes into effect from October 2011.

According to the current EPI schedule, all children during their first year of life should be immunized with BCG (at birth), OPV (on completion of 2,4,6 months), DTP- Hep B- Hib (on completion of 2,4,6 months), JE (on completion of 9 months) and 1st dose of MMR (on completion of 1 year) to complete the primary series of vaccination before reaching the age of one year. Other than that, older children should be immunized with OPV (on completion of 18 months), DTP (on completion of 18 months), 2nd dose of MMR (on completion of 3 years), DT (at 5 years), aTd (at 12 years), and pregnant women with tetanus toxoid (TT).

National Immunization Schedule for EPI Vaccines – Sri Lanka

Approved at the National Advisory Committee on Communicable Diseases on 03rd June 2011

Age	Vaccine	Remarks
DURING FIRST YEAR OF LIFE (INFANCY)		
0-4 weeks	BCG	Before leaving hospital, preferably within 24 hours of birth. If a scar is not present 2nd dose could be offered after 6months, up to 5 years.
On completion of		
2nd Month	OPV & Pentavalent (DTP-HepB-Hib) (1st dose)	For a defaulter or for an un-immunized child minimum of 6-8 weeks gap between doses is adequate
4th Month	OPV & Pentavalent (DTP-HepB-Hib) (2nd dose)	Preferably 6-8 weeks after 1st dose
6th Month	OPV & Pentavalent (DTP-HepB-Hib) (3rd dose)	Preferably 6-8 weeks after 2nd dose
9th Month	A dose of Live JE Vaccine	On completion of 9 months

IN SECOND YEAR OF LIFE		
At 12 months	MMR (1st Dose)	On completion of 1st year
At 18 months	OPV & DTP (4th dose)	On completion of 18th month
PRE SCHOOL GOING AGE		
At 3 years	MMR (2nd Dose)	On completion of 3rd year
SCHOOL GOING AGE		
At 5 years	OPV & DT (5th dose)	On completion of 5th year
In School		
At 12 years	aTd (adult Tetanus diph-theria)	On completion of 12th year
PREGNANT WOMEN		
1st Dose	Tetanus Toxoid	During 1st pregnancy, after 12 weeks of POA
2nd Dose	Tetanus Toxoid	During 1st pregnancy,6-8 weeks after the 1st dose
3rd Dose	Tetanus Toxoid	During 2nd pregnancy, after 12 weeks of POA
4th Dose	Tetanus Toxoid	During 3rd pregnancy, after 12 weeks of POA
5th Dose	Tetanus Toxoid	During 4th pregnancy, after 12 weeks of POA

One booster dose of Tetanus Toxoid (TT)	Tetanus Toxoid	During 1st pregnancy with a written evidence of previously being immunized with 6 doses of Tetanus Toxoid as per National EPI schedule (3 doses of DTP in infancy + DTP at 18 months + DT at 5 years + aTd at 12 years) during childhood and adolescent and a gap of 10 years or more after the last Tetanus Toxoid containing Immunization.
Tetanus Toxoid immunization not indicated	♦ Mothers who have received 5 doses of Tetanus Toxoid during previous pregnancies are protected and do not need further Tetanus Toxoid immunization for the present pregnancy. ♦ Mothers who have received 6 doses of Tetanus Toxoid according to the National EPI schedule during childhood and adolescence and if the gap between the last Tetanus Toxoid containing immunization and the present pregnancy is less than 10 years, are protected and do not need further Tetanus Toxoid immunization for the present pregnancy.	

	♦ Mothers who have received 6 doses of Tetanus Toxoid according to the National EPI schedule during childhood and adolescence and have received at least 1 booster dose of Tetanus Toxoid during pregnancy or due to trauma within last 10 years, are protected and do not need further Tetanus Toxoid immunization for the present pregnancy.	
FEMALES IN THE CHILD-BEARING AGE GROUP		
15-44 years	Rubella containing vaccine (MMR)	One dose of MMR vaccine should be given to all females between 15 and 44 years of age, who have not been immunized with rubella containing vaccines earlier.

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