# ANNUAL REPORT

## ON
## FAMILY HEALTH
## SRI LANKA
## 2011

**Family Health Bureau**
**Ministry of Health**
**Sri Lanka**

# Annual Report
## on
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## Preface

The Family Health Bureau of the Ministry of Health, Sri Lanka is pleased to present its 21st Annual Report on Family Health Programme. The Programme is dedicated in embarking on its responsibilities to ensure optimal health for women, infants, children and families. It is predominantly operating through the public health service network possessing linkages with curative health services, concerned government departments, professional organizations, development partners and other relevant stakeholders.

Reproductive Health - Management Information System of the Family Health Programme routinely collects data on programme implementation and its outcome/impact which is also assisted with surveillance. The information generated is continuously being utilized for programme redirection at the central level and provides feedback to the grass root level public health staff on their untiring efforts. The stakeholders of the Programme also receive feedback on their contributions to maintain the smooth conduct of the Programme.

The succinct format of this report is intended to facilitate the use of the information as a snapshot of the programme's progress towards its goals set out in the national maternal and child health policy and strategic plans.

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# Acknowledgements

## Summary Statistics

| Indicator | Data | Year | Source |
|---|---|---|---|
| **Demographic** | | | |
| Total population | 20,277,597 | 2012 | Department of Census and Statistics |
| Age distribution ('000 )   0-14 years | 5,488 | | |
| 15-64 years | 14,065 | 2011 | Central Bank Report |
| 65 years over | 1,316 | | |
| Live births        Total | 363,415 | | |
| Male | 185,432 | 2011 | Registrar General's Department |
| Female | 177,983 | | |
| Surface area (Sq. km ) | 65,610 | 2011 | Central Bank Report |
| Population density (Persons per sq. km) | 323 | 2012 | Department of Census and Statistics |
| Population growth rate (%) | 0.7 | 2012 | |
| Rate of Natural Increase (per 1000 population) | 11.5 | 2011 | Central Bank Report |
| Crude Birth Rate (per 1000 population)$^2$ | 17.4 | 2011 | Registrar General's Department |
| Crude Death Rate (per 1000 population)$^2$ | 5.9 | 2011 | |
| Urban population (%) | 15.1 | 2010 | World Bank Report 2012 |
| Sex ratio at birth (No. of male births per 100 female births) | 104.2 | 2011 | Department of Census & Statistics |
| Child population (<5 year)% | 9.0 | 2006/2007 | Demographic and Health Survey[1] |
| Women in the reproductive age group (15-49 years)% | 51.4 | 2006/2007 | |
| Average house hold size  (number of  persons ) | 4.0 | 2010 | Central Bank Report 2011 |
| **Health and Nutrition** | | | |
| Life expectancy at birth (years )        Total | 74.9 | 2011 | Central Bank Report |
| Male | 70.3 | 2007 | Central Bank Report 2010 |
| Female | 77.9 | 2007 | |
| Neonatal Mortality Rate(per 1000 live births) | 6.2 | 2008 | Registrar General's Department |
| Infant Mortality Rate$^2$ ( per 1000 live births ) | 9.0 | 2009 | |
| Under five Mortality Rate$^2$ ( per 1000 live births) | 11.3 | 2009 | |
| Total Fertility Rate$^2$ | 2.3 | 2006/2007 | Demographic and Health Survey[1] |
| Maternal Mortality Ratio ( per 100000 live births) | 31.1 | 2010 | Family Health Bureau |
| Still Birth Rate (per 1000 births)$^2$ | 7.8 | 2010 | Medical Statistics Unit |
| Low birth weight per 100 live births in Government Hospitals$^2$ | 17.0 | 2010 | |
| Pregnant women attending ANC more than 4 visits (%) | 92.5 | 2006/2007 | Demographic and Health Survey[1] |
| Average number of clinic visits per mother | 7.2 | 2011 | Family Health Bureau |
| Average number of antenatal home visits per mother by a PHM | 5.2 | 2011 | Family Health Bureau |
| Pregnant women visited at least once by PHM at home (%) | 91.7 | 2011 | Family Health Bureau |
| Live births in government hospitals (%)$^2$ | 91.65 | 2010 | Medical Statistics Unit |
| Births attended by skilled health personnel (%) | 98.6 | 2006/2007 | Demographic and Health Survey[1] |
| Mothers receiving at least 1 postpartum visit during 1$^{st}$ 10 days (out of reported deliveries) | 91.4 | 2011 | Family Health Bureau |
| Average number of  postpartum visits  by PHM during 1$^{st}$ 10 days | 1.8 | 2011 | Family Health Bureau |
| Children ever breastfed of all children <5 years (%) | 99.3 | 2006/2007 | Demographic and Health Survey[1] |
| Breastfeeding initiation within 1 hour of birth (%) | 79.9 | 2006/2007 | |
| Exclusive breastfeeding under 6 months (%) | 76.0 | 2006/2007 | |
| Immunization coverage (%) | | | |
| BCG at birth (live births) | 94.8 | 2011 | Epidemiology Unit |
| Pentavalent 3$^{rd}$ dose | 93.4 | 2011 | |
| Measles containing vaccine 1 (MCV 1) | 96.5 | 2011 | |

| Indicator | | Data | Year | Source |
|---|---|---|---|---|
| Children under five (%) | | | | |
|    Underweight (weight- for- age ) <-2SD | | 21.1 | | |
|    Acute Under nutrition (weight for height) -Wasting <- 2SD | | 14.7 | 2006/2007 | Demographic and Health Survey[1] |
|    Chronic malnutrition (height for age) -Stunting <-2SD | | 17.3 | | |
| Average Daily Calorie Intake (Both poor and non-poor) | | 2,094 | 2009/2010 | Central Bank Report 2011 |
| Current use of contraceptive methods among 15-49 year age married women (%) | | | | |
|    Any method | | 68.4 | 2006/2007 | Demographic and Health Survey[1] |
|    Modern Method | | 52.5 | | |
|    Traditional Method | | 15.9 | | |
| **Water supply and sanitation** | | | | |
| Access to safe drinking water (%) | | 87.7 | 2011 | Central Bank Report |
| Access to pipe borne water (%) | | 42.4 | 2011 | |
| **Socio-economic** | | | | |
| GDP per capita at current prices | Rs | 313,576 | 2011 | |
| | US $ | 2,836 | | |
| GNP per capita at current prices | Rs | 310,124 | 2011 | Central Bank Report |
| | US $ | 2,805 | (Revised) | |
| Human development index | | 0.691 | 2011 | |
| Unemployment rate | Total | 4.2 | 2011 | |
| | Male | 2.7 | | Sri Lanka Labour Force Survey |
| | Female | 7.0 | | |
| Labour force | | 8,554,730 | 2011 | Sri Lanka Labour Force Survey |
| Dependency ratio (%) | | 48.4 | 2011 | Central Bank Report 2011 |
| Literacy rate % | Average | 92.2 | | |
| | Male | 93.5 | 2011 | Central Bank Report 2011 |
| | Female | 91.1 | | |
| School going population (%) | Primary | 42.0 | | |
| | Junior secondary | 31.0 | 2011 | Ministry of Education |
| | Senior secondary | 15.0 | | |
| | Collegiate | 12.0 | | |
| Median age at marriage (Female 25-49 years) | | 23.3 | 2006/2007 | Demographic and Health Survey[1] |
| **Health Resources** | | | | |
| Government expenditure on health (% of GDP) | | 1.4 | 2011 | Central Bank Report |
| Government health expenditure as % of national expenditure[2] | | 4.57 | 2010 | Medical Statistics Unit |
| Per capita health expenditure (Rs)[2] | | 3,875 | 2010 | Medical Statistics Unit |
| Medical Officer per 100,000 population[2] | | 71.02 | 2010 | Medical Statistics Unit |
| Population per Medical Officer[2] | | 1,394 | 2010 | Medical Statistics Unit |
| Dental Surgeons per 100,000 population[2] | | 5.5 | 2010 | Medical Statistics Unit |
| Nurses per 10,000 population[2] | | 17.1 | 2010 | Medical Statistics Unit |
| Public Health Midwives per 100,000 population[2] | | 26.5 | 2010 | Medical Statistics Unit |
| Number of hospitals[2] | | 630 | 2010 | Medical Statistics Unit |
| Number of hospital beds[2] | | 72,510 | 2010 | Medical Statistics Unit |
| Hospital beds per 1,000 population[2] | | 3.5 | 2010 | Medical Statistics Unit |
| Number of Central Dispensaries[2] | | 464 | 2010 | Medical Statistics Unit |
| Number of MOH / DDHS divisions | | 329 | 2011 | Family Health Bureau |

[1]DHS 2006/2007 excludes Northern and Eastern provinces
[2]Provisional

# 1 Background

## 1.1 Family Health Programme

Family Health Programme is a collection of several packages of interventions that are aimed to promote the health of families around the country with special emphasis on mothers and children. The programme provides the most wide spread community based health care services enjoyed by Sri Lankan public. Present day Family Health Programme reflects more than 85 years of successful programme maturation. The origin of it dates back to 1926, when it was initiated in Kalutara, as the first field based health unit system of the country. Today, Family Health programme reaches almost all families throughout the country. It forms a well-organized health care system, which perches on to 325 divisional health units called Medical Officer of Health (MOH) areas.

The official mission of the Family Health Programme is "to contribute to the attainment of highest possible levels of health of all women, children and families through provision of comprehensive, sustainable, equitable and quality maternal and child health services in a supportive, culturally acceptable and family friendly setting." In serving this mission the programme relies on a blend of domiciliary and institutionalized interventions delivered by multi disciplinary team of health professionals. Major share of the Family Health programme interventions are preventive in nature while some of them focus on secondary care by including interventions to ensure the standards and quality of care. A series of well designed programme packages are available to deliver these interventions to target groups across two continuums of care: the life cycle and health system.

The Family Health Programme is comprised of several major components that aim to promote maternal, child, school and adolescent health. It also includes Family planning and Women's health components incorporating perimenopausal care and gender concerns. The maternal component is further sub-divided as; Antenatal, Intrapartum, Postpartum and Maternal mortality and morbidity surveillance entities. Newborn care, Child nutrition, Child development and special needs, Child morbidity and mortality prevention and surveillance elements comprise the Child Health component. In addition, Family Health Programme includes an oral health component which focuses on maternal and child oral health care.

As a whole, Family Health Programme focuses on a sizable proportion (around 54%) of the population, which includes children, adolescents and those in reproductive ages. The population estimates show that these large numbers will remain so for several more years to come (Figure1). Estimates also indicate that nearly 15 million people come under the purview of Family Health Programme.

## 1.2 Health Administration of Sri Lanka

Sri Lanka has a devolved health system resulting in Ministry of Health at central level and separate provincial ministries of Health at

**Figure 1: Distribution of estimated population over broad age groups from 1995 -2050**
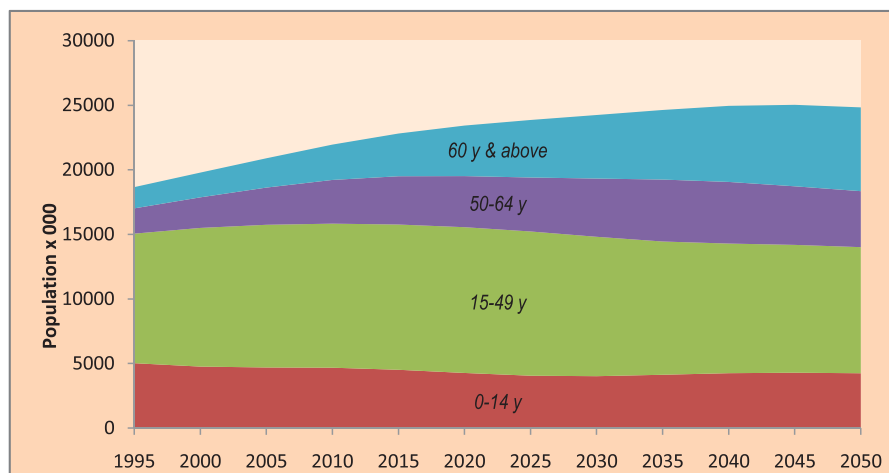


nine provinces. The central ministry has the overall responsibility of maintaining the health services of the country, while the nine Provincial ministries empowered with nine Provincial Directors of Health Services (PDHS) are responsible for effective implementation of the services in their respective provinces.

There are 26 Regional Directors of Health Services (RDHS) to assist the PDHSs. The RDHS areas are similar to administrative districts except in Ampara where the district is subdivided to Ampara and Kalmunai RDHS areas.

**1.3 Organization and Delivery of Family Health Programme**

Family Health Programme collaborates with a number of partners in the process of its organization and delivery. Family Health Bureau (FHB), a central level institution of the Ministry of Health, is responsible for designing and planning of Family Health Programme. FHB also provides technical guidance for provincial systems on its implementation. In addition, FHB advocates the Ministry of Health on matters related to policy, finance, infrastructure and other resource requirements relevant to Family Health

Programme. Quality control, monitoring and evaluation of the Family Health Programme also come under the purview of FHB.

FHB has several sub units that covers the different components of the Family Health Programme. These include: a) Maternal Health, b) Maternal Morbidity and Mortality Surveillance, c) Intrapartum and Newborn care, d) Child Development and Special Needs, e) Child Nutrition, f) School and Adolescent Health, g) Gender and Women's health, h) Family Planning, i) Planning, Monitoring and Evaluation, j) Oral Health and k) Research and Development. Each of these units is manned by a public health specialist, who is the national programme manager for areas under the unit's purview. Each unit possesses a separate staff responsible for advocacy, policy and strategic analysis, programme development, technical guidance, evaluation and supervision related to the respective programme components.

Figure 2 shows the administrative and technical guidance pathways that facilitates the organization and implementation of Family Health Programme activities through the national health system.

## Figure 2: Organization of FHP at different levels of health system

| Key: | Administrative Guidance | Technical Guidance | Care Provision | Referral Pathway | Back Referral Pathway |
|---|---|---|---|---|---|

| Level of Health system | Preventive Care | | Curative Care |
|---|---|---|---|
| Ministry of Health | Secretary Health DHGS DDG- PHS → FHB | Tertiary Care Hospital | |
| Provincial Directorate | Provincial Director → Provincial CCP | Provincial General Hospital | |
| Regional Directorate | MOMCH / RE / Regional Director / RSPHNO / SPHIDD | District General Hospital / Base Hospital A/B | |
| Divisional (MOH) Unit | Medical Officer of Health / SPHI / PHNS / SPHM / PHI / PHM / Home → Field Clinic | Divisional Hospital A/B/C / Primary Medical care Units (CD &MH/CD/MH) | |

The red and blue lines in the diagram depict the administrative and technical supervision pathways relevant to different levels of health system that are involved with the Family Health Programme. The diagram also depicts the referral and back referral pathways available for people confronted by health conditions related to family health (child birth, childhood illness etc) in pink lines. The administrative and technical guidance relevant to the Family Health Programme is integrated into the usual multi-tier organizational arrangement of the Ministry of Health. Tiers include, Central Ministry of Health Institutions, headed by the Secretary of Health, 9 Provincial Directors, and 26 Regional Directors.

At Central Ministry of Health, policy making and financial allocation related to Family Health Programme become the responsibility of Secretary to the Ministry. The overall administration including logistical supply comes under the purview of the Director General of Health Services (DGHS). FHB is the main think tank behind the technical management of the Family Health Programme providing technical guidance for all levels of the health system. FHB provides policy and strategic advocacy to the Ministry of Health and Provincial and Regional directorates.

Implementation of the Family Health Programme is advised and supervised by Provincial Consultant Community Physicians, and Medical Officers of Maternal and Child Health (MOMCH) attached to regional (district) directorates. MOMCHs also act as the major link between FHB and the Provincial system. At the district level, MOMCH is supported by Regional Supervising Public Health Nursing Sister (RSPHNO) and District Supervising Public Health Inspector (SPHID) in

monitoring of the Family Health Programme in the district.

The implementation of the Family Health Programme is carried out by the Medical Officer of Health (MOH) teams under the administrative supervision of the Provincial and Regional Directorates of Health. In Sri Lanka 325 MOH areas are distributed within 26 health regions. The MOH areas are the smallest health unit in the public health network and it consists of a team comprising several categories of staff. MOH is the manager of the MOH team. He is a MBBS qualified doctor who is given special orientation training on public health activities. Both technical and administrative supervision of the MOH team becomes the main responsibility of the MOH. At present most MOHs are assisted by Additional Medical Officers of Health (AMOHs). The Public Health Midwife (PHM) and Public Health Inspector (PHI) are the ultimate grass root level primary health care workers of the MOH team. On average one PHM is appointed for 3000 population while a PHI is appointed for 15,000 population. While the principle roles of the PHM lies around maternal and child health activities, the PHIs are principally held responsible for school and adolescent health programme, Environmental and Occupational health activities including control of communicable diseases, ensuring water and food safety, and sanitation related interventions. Several other categories of interim level supervisors are available in the MOH team. They are supposed to assist the MOH in supervision of activities of grass root level staff. Public Health Nursing Sisters (PHNS) and Supervising Public Health Midwives (SPHM) are responsible for supervising the PHMs. PHNS and SPHM have a

hierarchical administrative relationship where PHNS is also supposed to supervise SPHM. Both of them are responsible for the MOH. Supervising Public Health Inspectors (SPHI) become immediate supervisors of PHIs. They are directly responsible for the MOH. MOH team is further potentiated by clerical and other categories of supportive staff such as drivers, labourers etc. MOH staff includes School Dental Therapists (SDT) who are responsible for providing routine dental care for school children. The following table presents the overall staff position of the MOH areas around the country.

Figure 3 shows 3 human resource availability indicators of Family Health Programme. They include number of MOHs (including AMOHs) per 60,000 population, number of PHMs per 3,000 population and number of PHIs per 15,000 population. 3,000 is the standard average number of population allocated to a PHM. PHI is supposed to cover a population of 15,000. The graph shows that there is a gross inadequacy in allocation of public health staff island wide based on the population alone although there are other factors also to be considered e.g. terrain. Majority of districts

lack public health staff according to norms to implement the programme. It should be noted that even if the district meets the standards of staff position, there is often a maldistribution of staff within districts. This seems to create notable inequities in service provision between the MOH areas within a district. The Colombo Municipal Council (CMC) does not employ MOHs and it follows a different system to provide MCH care.

*Table 1: Distribution of different types of staff personnel in the MOH teams around the country, 2011*

| Category of staff | Number of personnel | Staff target population ratio (Officers /100,000 population) |
|---|---|---|
| MOH | 281 | 1.3 |
| AMOH | 240 | 1.1 |
| PHNS | 289 | 1.3 |
| SPHI | 204 | 0.9 |
| SPHM | 233 | 1.1 |
| PHM | 5676 | 26.1 |
| PHI | 1234 | 5.7 |
| SDT | 407 | 1.9 |

*Figure 3: Number of MOHs / 60,000 population, number of PHMs /3,000 population and number of PHIs /15,000 population*
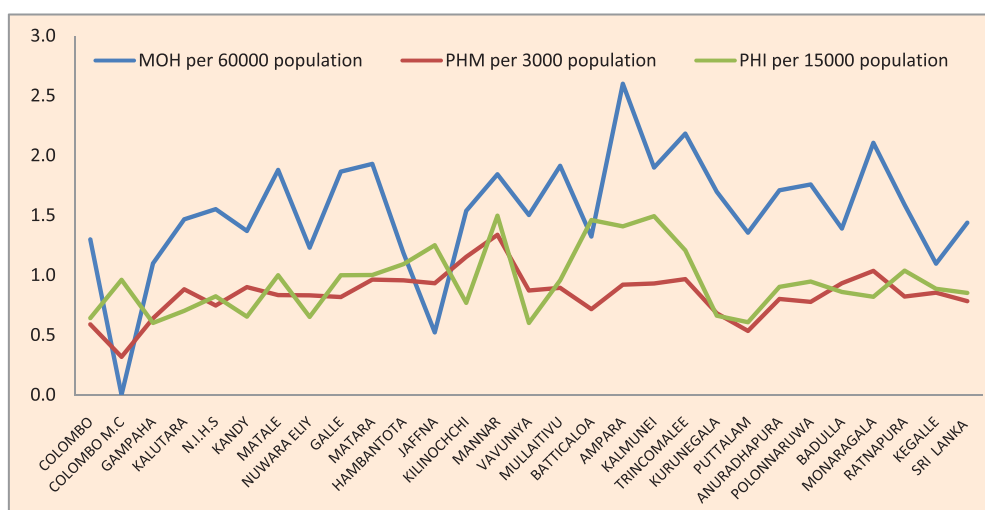
# 2 Purpose of the Report

This is the 21st annual report of the Family Health Programme. The main purpose of the report is to provide feedback to partners of Family Health Programme on successes and failures of their hardwork during the recent past. The report includes information on background, and selected input, process, outcome and impact indicators relevant to the Family Health Programme. It also provides the platform for various outside agencies such as other Ministries, INGOs, Professional bodies and researchers to learn the contemporary progress of Family Health Programme.

This report presents data by 28 health areas.

These include 26 RDHS areas, National Institute of Health Science (NIHS) area and Colombo Municipal Council (CMC) area. Latter two are separately mentioned due to the unique nature of organization of services in these areas.

All maps show boundaries of 26 RDHS area. Therefore the indicators of NIHS and CMC areas are separately shown in circles embedded in relevant districts in which they are located, whenever the performance of those areas are different to respective districts.

# 3 Data Sources and Indicators

Annual report summarized and analyzed the data from several sources. They include:

1. H 509:  Quarterly MCH return
2. H1200:  Family Planning Monthly Return
3. H 797:  Quarterly School Health Return
4. Maternal Mortality Surveillance system
5. Annual data sheet of MOHs
6. Annual Nutrition month return
7. Monthly return from Dental Therapists
8. Registrar General's Department and other relevant sources

## 3.1 H 509: Quarterly MCH Return

H 509 provides a comprehensive set of  data on the performance of Family Health Programme. It is a quarterly return compiled by the MOH area. The data items cover wider scopes. These include: information on target population, performances of maternal care, child care, well woman clinic, and family planning services provided both at field and clinic settings by the MOH staff. Several registers, records and returns used in field and clinic settings are used to compile H 509. Each MOH is supposed to compile H 509 in 3 copies and send one to FHB, 2nd copy to RDHS Office before the 25th of the month following each quarter (Figure 5). The 3rd copy is retained at MOH Office.

## 3.2 H 1200: Family Planning Monthly Return

H 1200 serves dual purpose of record and return of family planning new acceptors. Each family planning service provision points has to maintain a H 1200 for new acceptors of all modern methods except for Condoms (H 1200 A). Each service delivery point is sending H 1200 A to the respective MOH office. Every MOH is required to send the H 1200 B, consolidated monthly return compiled using all H 1200 A to FHB before the 20th of each month (Figure 5).

## 3.3 H 797: Quarterly School Health Return

H 797 summarizes the size of the target school population and the performance of school health programme. It covers the school medical  inspections, immunizations and follows up of children identified to have problems. This quarterly return from each MOH office is expected to reach FHB before the 25th of the month following each quarter (Figure 5).

## 3.4 Maternal Mortality Surveillance system

Each maternal death is expected to be reported within 24 hours to the RDHS and FHB by the MOH of the field and/ or the Institutional Head, where the death occurred. There is a standard procedure to be followed and the information is recorded in a standard format (H 677, H677a). Each year District and National Maternal Mortality Reviews are conducted and information is compiled by the FHB (Figure 4).

## 3.5 Annual Data Sheet of MOHs

This is a data sheet used to collect the basic information on MOH such as staff positions, facilities, population data etc.

## 3.6 Annual Nutrition month return

Data on nutrition month activities are to be reported annually once the designated month activities are over to Family Health Bureau from each RDHS area.  Nutritional status of

*Figure 4: Information flow of National Maternal Mortality Surveillance System*
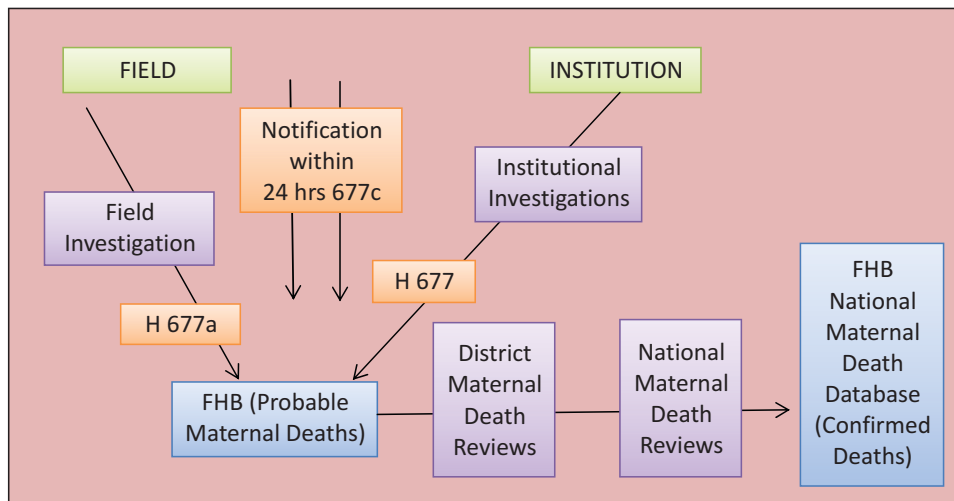


Children under five are to be provided by PHM area and that of school going children are to be provided by PHI area. Data compiled by MOH area is being sent.

### 3.7 Monthly return from Dental Therapists

School Dental Therapists (SDTs) are sending returns on their monthly performances and summary of this is available for the district.

### 3.8 Registrar General's Department and other relevant sources

The national population estimates, and fertility and mortality rates published by the Registrar General are used in some of the denominators of indicators used in the annual report.

## Figure 5: The sources and pathways of data used in the annual report



**FIELD**

Note Book: H511

Daily Statement of PHM: H 523

**CLINIC**

Clinic Attendance Register: H517

Clinic Summary: H 518

Well Woman Clinic Register

Well Woman Clinic Return H 1161

**SCHOOL**

School Health Survey Report: H 1015

Note Book: H 253

School Health advance progarmme: H 1016

School Health Examination Record of Health Problems: H 456

Student Health Record: H 457

PHI Monthly Report: H 631/ 99

School Health Appointment card; H 606

Monthly Statement of PHM: H524

Quarterly MCH Clinic Return: H 527

FP Monthly Return: H 1200 A

Monthly Statement of School Health Activities: H 1014

MOH Office

Quarterly MCH Return: H 509

FP Monthly Return: H 1200 B

Quarterly School Health Return: H 797

Monthly return of Dental Therapists

Quarterly MCH Return: H 509

Quarterly School Health Return: H 797

FP Consolidated Return: H 1159

Monthly return of Dental Therapists

FAMILY HEALTH BUREAU

RDHS OFFICE

# 4 Data Quality

The quarterly returns are supposed to be received at FHB before the 25th of the month following each quarter. Monthly returns should be available before the 20th of following month. However, the records show that the timeliness of receiving quarterly returns for year 2011 was not optimal (Figure 6).

Timeliness of H 509 is much better than that of H 797. Each return is scrutinized for completeness and accuracy of data at FHB. Discrepancies are verified through the phone and in some cases the defaulted returns are sent back to the respective MOHs to revise and resubmit. Then these formats are entered into epi data based data entry format. The analysis is carried out using SPSS software. Data entry validation is done by re-entering 5% of the returns.

*Figure 6: Timeliness of returns H 509 and H 797   2011*
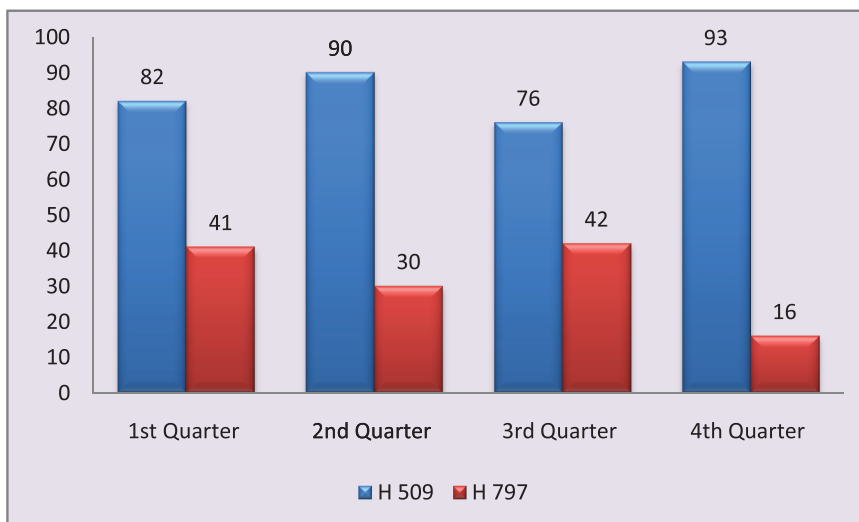
# 5 Target Population of Family Health Programme

There are two mechanisms to identify the target population by the grass root level workers. They include registration of eligible families by PHMs and identifying the schools under their care and the numbers of children in these schools who should be examined during the year by PHIs. PHMs are supposed to maintain an Eligible Family Register (H 526) for this purpose. The School Health Survey report (H 1015) compiled by PHIs contains data on school population.

All the children in schools with enrolment less than 200 and those in grades 1,4,7 and 10 in schools having enrolments over 200 are supposed to be subjected to medical examinations by MOH staff.

The following table presents the sizes of various types of target groups coming under the Family Health Programme in the year 2011.

The total number of reported population by

## Table 2: Sizes of different target populations of Family Health programme

| Indicator | Estimated* | Reported |
|---|---|---|
| Midyear population | 20,869,000 | 21,727,755 |
| Eligible families | 3,476,441 | 3,553,295 |
| Pregnant mothers | 415,869 | 392,202 |
| Births | 378,063 | 319,516 |
| Infants under care | 378,063 | 333,548 |
| 1-2 years under care | 378,063 | 353,555 |
| 3-5 years under care | 1,134,189 | 1,044,573 |
| Number of schools > 200 | - | 4292** |
| Number of Schools > 200 | - | 4205** |
| Total school children under care at the beginning of year | - | 3,287,257 ** |

*Estimates are based on the estimated midyear population published by the Registrar Generals' Department
**based on the 87.7% of the H 797 received at FHB

Eligible Family is defined as a family either legally married or living together where the woman is between 15 to 49 years and/ or having a child under 5 years. A family with a pregnant or cohabiting woman irrespective of marital status and age and single women (widow, divorced, separated) are also considered under eligible family. It is estimated that the number pertaining to 16 % of the population approximates the number of eligible families.

PHMs exceeded the estimated mid year population by 4%. Figure 7 presents the trends in the percentage registration of eligible families in comparison to estimated eligible families in the country. The estimated eligible families are taken as the 16% of the total population for that year. In 2011, PHMs around the country have reported a total population of 21,727,755. Hence, 3,476,441 eligible families could be estimated to present during 2011. PHMs have reported a total of

**Figure 7: Comparison of numbers of estimated and reported eligible families and the reported eligible families as a percentage of estimated families.**



3,553,295 eligible families (102%) during the same year indicating that reaching the target population has been almost universal. However, the reaching of pregnant mothers and children seems to be less than the estimated numbers. Figure 7 shows that almost all eligible families were registered by the PHMs since 2006 to 2011.

A wide variation, 72 % - 120 %, was seen in the percentage of eligible mothers reported across districts. This may either reflect less registration efficiency as well as discrepancies in the base populations used to calculate the denominator of this indicator. The districts from Northern Province except Jaffna & Kilinochchi and the Colombo Municipal Council reported the lowest percentages. Annexure 1 includes all the percentages.

# 6 Maternal and Newborn Care

Maternal and newborn care component of the Family Health Programme includes interventions that focus the antenatal, intra natal and postnatal aspects of pregnancy. A package focusing on pre-conceptional aspects of pregnancy has been piloted and its indicators are yet to be integrated into the information system. This section describes some important characteristics of pregnant women registered for care either at field or clinic during 2011. It also presents the current and past trends of selected process and outcome indicators related to maternal care.

## 6.1 Antenatal Care

According to the Family Health Programme framework, antenatal care begins with the registration of pregnant mother by PHM either at field or clinic. The basic antenatal care following registration is consisted of clinic and domiciliary care. It is encouraged that all pregnancies are identified as soon as possible, and a standard package of interventions is offered to them. Preliminary clinical assessment and screening for pregnancy health and clinical risks, provision of prophylaxis and manage where relevant (assessment of fundal height, screening for Pre eclampsia and Eclampsia, screening for anaemia and Syphilis management, Tetanus Toxoid Immunization and antihelminthic, prevention and management of STIs and RTIs, prevention of mother to child transmission of HIV, Intermittent presumptive treatment for malaria where relevant). monitoring of maternal and foetal wellbeing in subsequent visits, nutrition supplementation (iron folate, iodized salt, "Triposa", referral of high risk pregnancies for specialist care, providing

information and counseling for pregnancy related issues (breastfeeding and family planning, birth and emergency prepa-redness).

The following section shows some of the indicators that reflect the trends of the status of antenatal care.

### 6.1.1 Registration of pregnant mothers

The RH-MIS makes provisions to record the number of pregnant mothers registered by PHMs along with the time of registration in relation to period of amenorrhoea (POA). In addition the number of teenage pregnancies, number of first pregnancies, and number of pregnancies at fifth parity and above and whether the registered mother is protected from Rubella vaccine are also noted. PHMs have registered 392,202 pregnant mothers during 2011 either at antenatal clinics or during field visits. This accounted for 94.3% of expected pregnancies of 415,869 in that year. This indicates that a very high percentage of pregnant women in Sri Lanka are in contact with the maternal care services offered by the Family Health Programme. There are notable differences in the percentages of pregnancies registered in different districts (Annexure 1). The low performing districts include Colombo MC, Ampara, Nuwara-Eliya, Batticaloa and Mannar.

Figure 8 and Table 3 shows the trends in percentage of pregnant mothers out of expected pregnancies who came into contact with the maternal care programme over last 5 years.

The percentage registration over last 5 years

indicates that PHMs have registered high proportion of estimated number of pregnancies. This high coverage seen in the pregnant mothers' registration not only shows the efficiency of the primary health care staff around the country, but also the positive health seeking behaviours among Sri Lankan mothers. It could also be a reflection of sound health care network of the country which facilitates the service provider–recipient contacts. Further it indicates the tremendous potential that it creates to ensure the life cycle approach where the children of these mothers could also be brought in close contact with the health system through these initial linkages. This will ensure that they get exposed to

### 6.1.2 Field Clinic care

Following registration, a pregnant mother should receive clinic antenatal care as early as possible. 96 % of mothers had visited a field antenatal clinics which are conducted at field clinics or non-specialists institutions at least once during 2011. The information on clinic visits to specialist units and private sector is not reported in RH-MIS. This high coverage has been presented throughout the period since 2007. On average, a mother made 7 field clinic visits during her pregnancy (Table 4). However, the total number of antenatal clinic visits by a mother may be higher than this provided we consider the visits at other

*Figure 8: Trends in estimated and registered pregnancies 2007-2011*
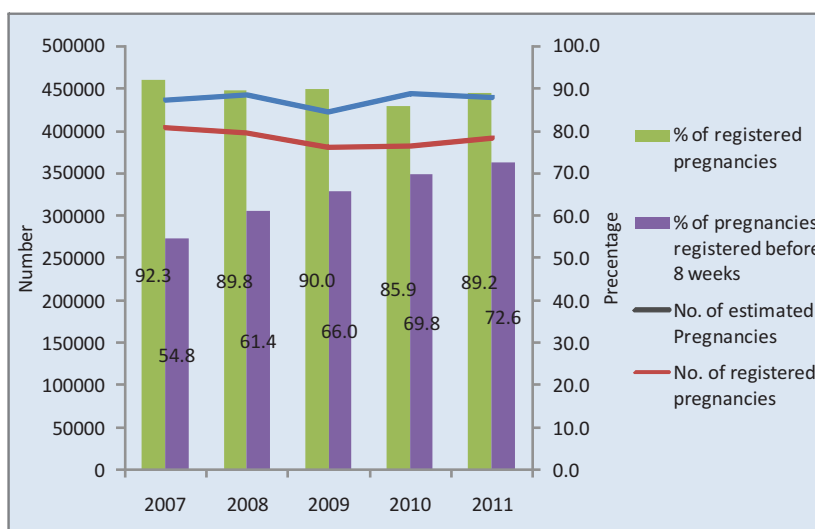


similar kind of interventions at relevant points in life, promoting and protecting their health.

Family Health Programme promotes early and regular antenatal care. Registration before 8 weeks is considered as early registration and the percentage of pregnancies that are registered early has shown 18 % increase over past 5 years (Figure 8 and Table 3). The percentage of mothers registered early ranged from 44.8% (Vavuniya) to 84.8% (Hambantota).

service providers mentioned above. The district variations of these indicators are given in the Annexure 3.

### 6.1.3 Antenatal screening

In addition to clinical screening conducted by a Medical Officer of Health, every mother is screened for; prepregnancy nutritional status (Body Mass Index-BMI), maternal anaemia (Hb), sexually transmitted infection (Syphilis antibodies) (VDRL) and blood grouping and

Rh. Several indicators are available for assessing the efficacy of antenatal screening for BMI, Hb, VDRL and blood grouping and Rh which are gathered from different sources. The data for BMI and Hb are available for mothers attending clinics. The data for VDRL and blood grouping are available for both reported deliveries and mothers attending clinics.

Table 5 presents the trends in the coverage of these screening activities since 2007. As reported by PHMs at the first postpartum visits, percentage of mothers, who was tested for VDRL at the time of delivery, amounted to

number of pregnant mothers screened with VDRL, reactive rate has been doubled during last five years.

A similar pattern is seen in testing the blood for grouping and Rh antibodies. Almost all mothers delivering knew their blood group and Rh status while 25.9 % of clinic attending mothers get the testing done at field clinics. It is known that mothers who had written evidence on their blood group according to the testing done at previous pregnancies may not tend to get it repeated.

The high coverage of VDRL and blood grouping and Rh testing as reported during postpartum

## Table 3: Pregnant mothers' registration with PHMs 2007-2011

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of pregnant mothers registered out of estimated pregnancies | 92.3 | 89.8 | 90.0 | 85.9 | 94.3 |
| % pregnant mothers registered before 8 weeks out of registered pregnancies | 54.8 | 61.4 | 66.0 | 69.8 | 72.6 |
| % pregnant mothers registered between 8- 12 weeks out of registered pregnancies | 34.3 | 28.5 | 25.0 | 22.6 | 20.3 |

97 % in 2011. However, clinic records indicate only 51.2 % of antenatal mothers attending field clinics were tested for VDRL at the clinic. There had been 1375 field clinics having facilities to draw blood for VDRL testing during the year 2011. Out of the 376,079 mothers attending antenatal clinics, in 2011,252 (0.07 %) were reported to be reactive for VDRL test. Though there was not a significant change in

visits indicate that a considerable percentage of mothers may obtain these services either from government hospital clinics or private sector.

Except in Polonnaruwa (90.7%) and Vavuniya (95.8%), almost all mothers under care of the Family Health Programme in other districts were tested for blood grouping and Rh at the

## Table 4: Percentage of pregnant mothers visiting field antenatal clinic at least once and average number of clinic visits since 2007

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of pregnant mothers making at least one filed clinic visit out of registered pregnancies | 97.1 | 96.1 | 95.6 | 94.7 | 95.9 |
| Average number of clinic visits per mother | 6.8 | 7.0 | 7.1 | 7.0 | 7.2 |

time of delivery. VDRL coverage among delivering mothers reported to be low in Jaffna (61.0%) and Kilinochchi (10.2%) districts in Northern Province and in the district of Batticaloa (70.2%) in Eastern province (Annexure 2).

Approximately 56% of the mothers attending clinic had their Hb level tested. However it should be noted that this may be an over estimation as according to guidelines each mother is supposed to be tested for Hb both at booking visits and between 26- 28 weeks of pregnancy.

It was also notable that BMI of 14 % of mothers attending clinics were not measured. Annexure 3 presents the district differential of the above parameters.

### 6.1.4 Domiciliary Care

The clinic care given to antenatal mothers is

expected to be alternated by domiciliary care offered by PHMs during home visits. During field contacts PHM should assess the antenatal mothers' health status by risk screening and examination, conducting simple investigations such as urine sugar/albumin at first visit, educating pregnant mothers and family members, and making necessary referrals. Table 6 presents the percentages of pregnant mothers, who were visited at least once and average number of field visits paid to them by PHM. Home visits for registered pregnant mothers at least once by PHM had been reducing for last 5 years. The district variations of these indicators are given in the Annexure 2.

### 6.1.5 Characteristics of pregnant mothers

### 6.1.5.1 Protection from Rubella and Tetanus

In Sri Lanka, comprehensive efforts have been

**Table 5: Percentage of pregnant mothers who had different types of screening carried out at field Antenatal Clinic**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of pregnant mothers tested for VDRL at the time of delivery out of reported deliveries | 92.0 | 93.9 | 97.8 | 96.0 | 97.0 |
| % of mothers whose blood is tested for grouping and Rh at the time of delivery out of reported deliveries | 99.0 | 99.5 | 99.9 | 99.8 | 99.6 |
| % of mothers whose BMI is assessed before 12 weeks out of total clinic attendance | 85.0 | 85.4 | 85.5 | 85.6 | 85.9 |
| % of mothers screened for Hb at the field clinic out of mothers attending antenatal clinics | 72.2 | 72.4 | 62.7 | 57.8 | 56.1 |
| Number of clinics with VDRL testing facilities | 1290 | 1723 | 1495 | 1545 | 1375 |
| % of mothers tested for VDRL at field clinic out of mothers attending antenatal clinics | 41.2 | 48.0 | 51.0 | 51.3 | 51.2 |
| Number of mothers who were VDRL positive for 10,000 mothers attending antenatal clinics | 3.5 | 5.5 | 4.3 | 6.0 | 6.7 |
| % of mothers whose blood Gp and Rh tested at field antenatal clinic | 39.3 | 28.4 | 26.1 | 27.3 | 25.9 |

made to ensure all reproductive age women are protected for Rubella by immunizing them with rubella vaccine. The initial strategy was to immunize all women from 15 - 44 years of age with Rubella vaccine. Therefore since 1995 to 2001, girls in 11 - 16 years were immunized at schools while other women in child bearing

Rubella coverage has been very high over the time and in 2011, over 96% mothers were protected for Rubella by the time they get pregnant. Almost all mothers were protected with Tetanus vaccine at the time of delivery.

Annexure 2 shows the district variations in Rubella coverage in 2011 and the coverage

**Table 6: Percentages of pregnant mothers who were visited at least once and average number of home visits paid to them by PHM**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of registered pregnant mothers visited at least once at home by PHM | 97.1 | 96.1 | 94.4 | 92.9 | 91.7 |
| Average number of PHM field visits per mother | 4.8 | 5.1 | 5.0 | 4.9 | 5.2 |

ages were immunized at field clinics. Then in 2001 the policy of Rubella immunization has been expanded to control Rubella infection in the community in addition to controlling Congenital Rubella Syndrome. Hence, since 2001, two doses of MR (Measles, Rubella) vaccine were administered to children at the ages 3 and 13 years. In 2010 MR vaccines was replaced by MMR (Mumps, Measles, Rubella) vaccine and at present 2 doses of MMR vaccine are given to all children at 1 and 3 years of age.

Neonatal tetanus has been eliminated from the country. This success could be attributable to the high coverage of tetanus vaccination among antenatal mothers along with safe delivery and new born care practices. Table 7 presents the percentages of mothers who have been protected for Tetanus and Rubella.

varied from 77.2% in Colombo Municipal Council to 99.3% each in Ampara and Kurunegala district. The National average was 96%. The worst performing areas include, Colombo Municipal Council, all districts in Northern and Eastern provinces except Jaffna (96.1%) and Ampara ( 99.3% ).

**6.1.5.2 Teenage pregnancies**

Around 6.1% of total pregnancies registered by PHMs belongs to mothers less than 20 years. There has been a definition change on the teenage pregnancy used in the RH-MIS in the year 2007, when it was changed from those under 19 years to those under 20 years. The following graph shows the trends in teenage pregnancies over the last 5 years. It shows that during last 5 years the percentage of teenage pregnancies remained more or less

**Table 7: Percentage of antenatal mothers who were protected with Rubella vaccination and Tetanus toxoid**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of pregnant mothers protected for Rubella out of registered pregnancies | 100.0 | 93.3 | 94.8 | 95.4 | 95.9 |
| % of pregnant mothers protected for Tetanus out of total reported deliveries | 99.6 | 99.8 | 100.0 | 99.9 | 99.6 |

similar and stayed between 6-8%. The percentages of teenage pregnancies were high in almost all Northern and Eastern RDHS areas, except Jaffna (4.4%) where it reported one of the lowest teenage pregnancy rates in the country. RDHS areas Trincomalee (11.3%),

Mullaitivu (11.0%), Batticaloa (10.8%) and Killinichchi (10.7%) recorded higher teenage pregnancy rates. Figure 10 shows the rates of teenage pregnancies by RDHS areas for year 2010 and 2011.

*Figure 9 : Trends in percentages of teenage pregnancies 2007- 2011*
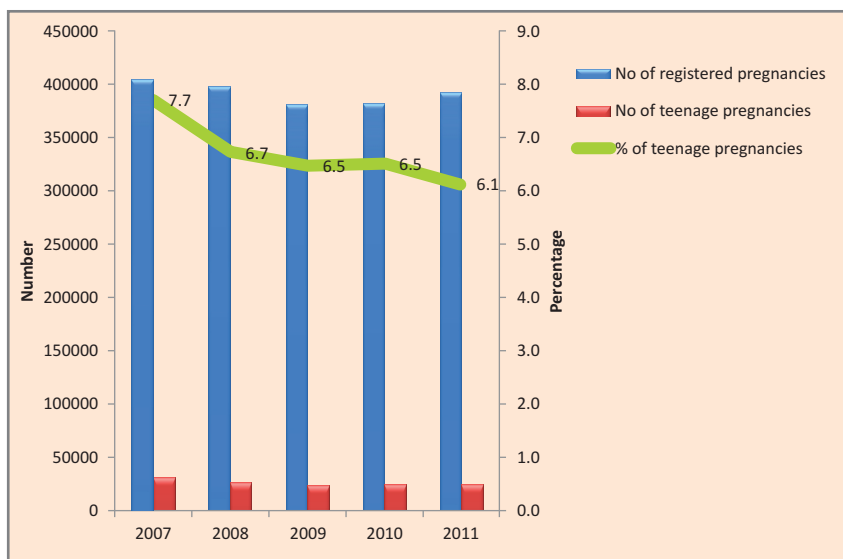


*Figure 10: Percentage of teenage pregnancies by RDHS area in 2010 and 2011*
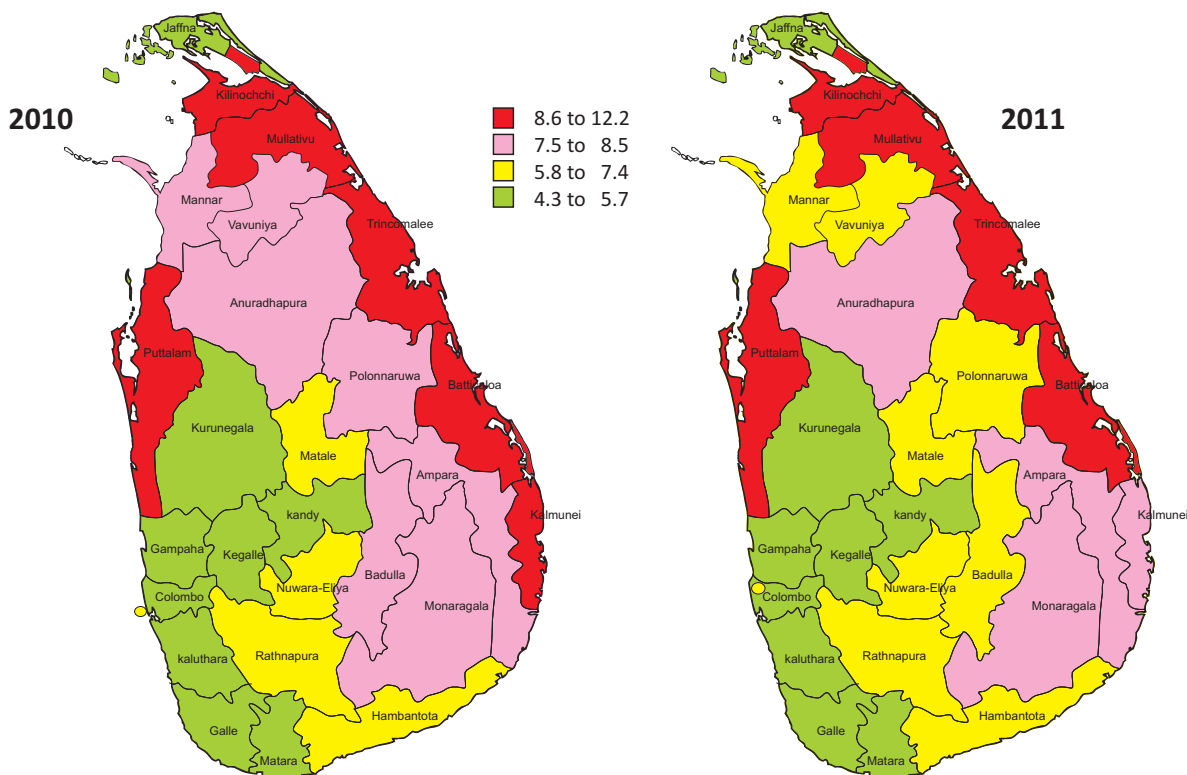
### 6.1.5.3 Primies and Multipara

Primies and multipara (P 5 and above) are considered to have relatively higher risk pregnancies than others. Figure 11 shows that in 2011, about 36.3 % of total pregnancies registered in the year were primies and 60.7% were in the 2nd to 4th pregnancy. Only 3% of pregnancies were 5th or higher order pregnancies. In addition to its importance as an accumulation of high risk set of pregnancies, presence of multi-para pregnancies indicates the efficiency of the family planning services.

*Figure 11: The distribution of registered pregnancies by parity in 2011*
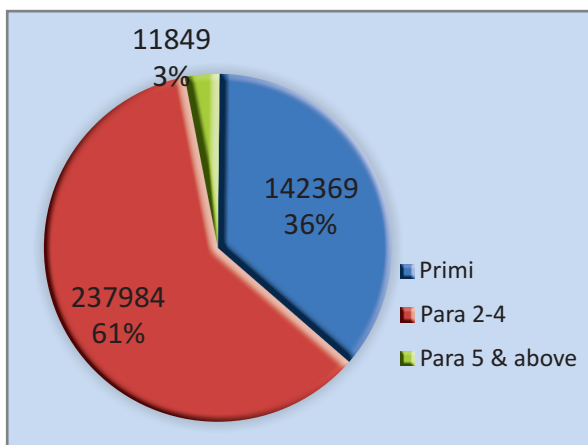


Figure 12 compares the percentage of multipara pregnancies (≥ P5), percentage of teenage pregnancies to the contraceptive prevalence rate of districts. A clear inverse relationship is seen between the percentages of multipara and teenage pregnancies with the percentages of current users of contraceptives in different districts.

### 6.1.5.4 Antenatal morbidities

The PHMs report selected types of morbidities and complications encountered during antenatal period. These include: Hypertension (Chronic and Pregnancy Induced), Diabetes Mellitus (Chronic and Gestational), Heart Diseases, Anaemia, Asthma, Malaria, Sexually Transmitted Infections, Liver Diseases, Psychiatric Illness, Epilepsy and any other significant illnesses. These reporting are made during the first postpartum visit. Figure 13 shows the number of different types of antenatal morbidities that occurred during antenatal period and corresponding cases per 10,000 pregnancies. This indicator is a relatively new addition and it is still taking the momentum in reporting. Therefore, absolute numbers of cases may be

*Figure 12: Percentage of multi-para (≥P5) and teenage pregnancies by percentage of current users of contraceptives 2011*
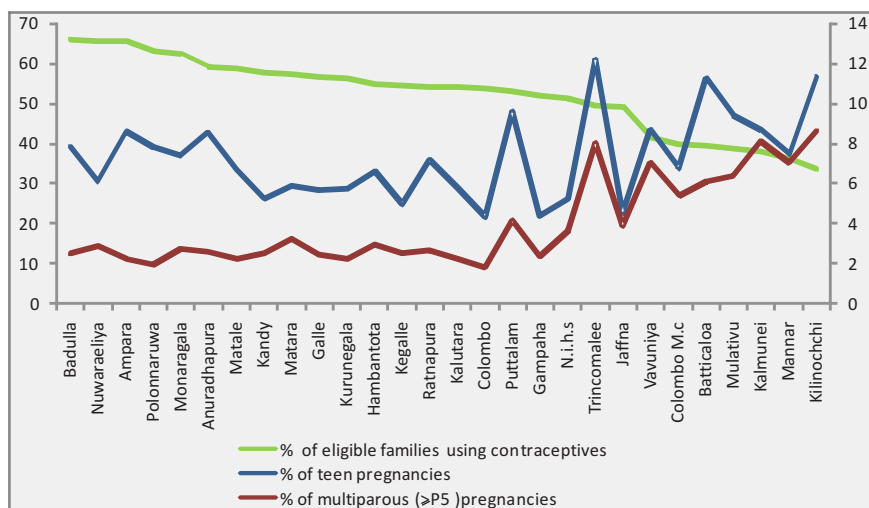
more than that was reported. Around 12.2% of pregnancies was associated with at least one of these conditions. The most commonly reported conditions include: anaemia, Pregnancy Induced Hypertension (PIH) and Gestational Diabetes mellitus.

will be dependent on their time of registration. The Figure 14 indicates the BMI status of pregnant mothers whose BMI was assessed before 12 weeks. Approximately 25% of pregnant mothers were found to be underweight and this proportion was

## Figure 13: Number of maternal morbidities and cases per 10,000 pregnancies 2011
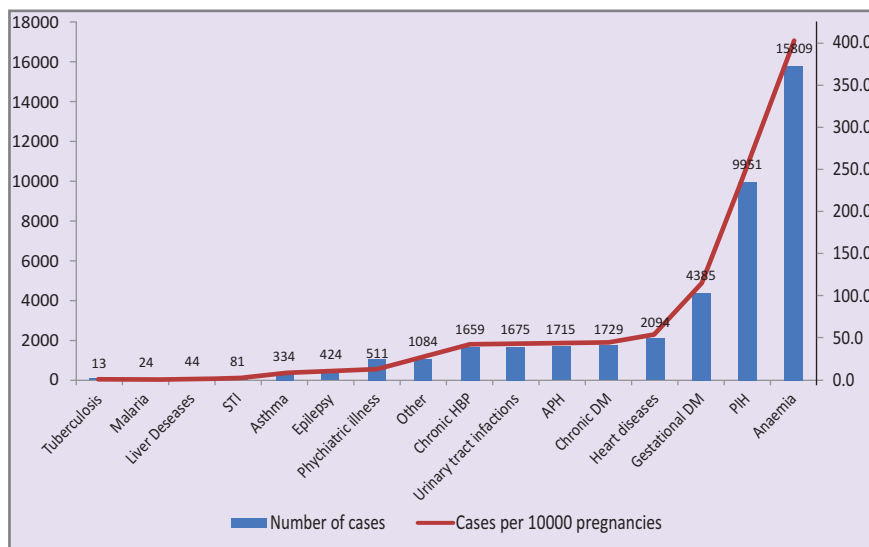


### 6.1.5.5 Maternal Nutritional status

#### 6.1.5.5a Maternal Body Mess Index (BMI)

Under nutrition is considered as one of the most resistant public health problems in Sri Lanka. According to RH-MIS, around 12.6 % newborns in 2011 weighed less than 2500 grams and hence became Low Birth Weight (LBW) babies. Maternal under nutrition is considered as one of the main reasons behind this high rate of LBW. Prepregnant BMI is considered as an important associate of the birth weight of the newborn which in turn affect the child's nutrition. BMI measured before 12 weeks of gestation is approximated for prepregnant BMI. In order to assess that, pregnant mothers should be identified before 12 weeks of pregnancy. Hence, the percentage of mothers who have been examined for BMI

remained more or less similar over past 5 years. Geographic variations are often prominent in nutritional indicators where the RDHSs Rathnapura and Ampara were persistent to have more than 30% of mothers with low BMI at the beginning of their pregnancy for last two years (figure 15). Ratnapura (33.2%), Ampara (30.2%), Polonnaruwa (29.3%), Monaragala (29.3%) and Hambantota (29.2%) RDHS areas also reported the higher percentages of pregnant mothers with low BMI for year 2011 (Annexure 3).

#### 6.1.5.5b Maternal Anaemia

Anaemia as indicated by the serum haemoglobin (Hb) level less than 11 g/dl is another important indicator of antenatal health. There are three indicators related to

*Figure 14: Percentage distribution of pregnant mothers according to their BMI status at booking visit since 2007*
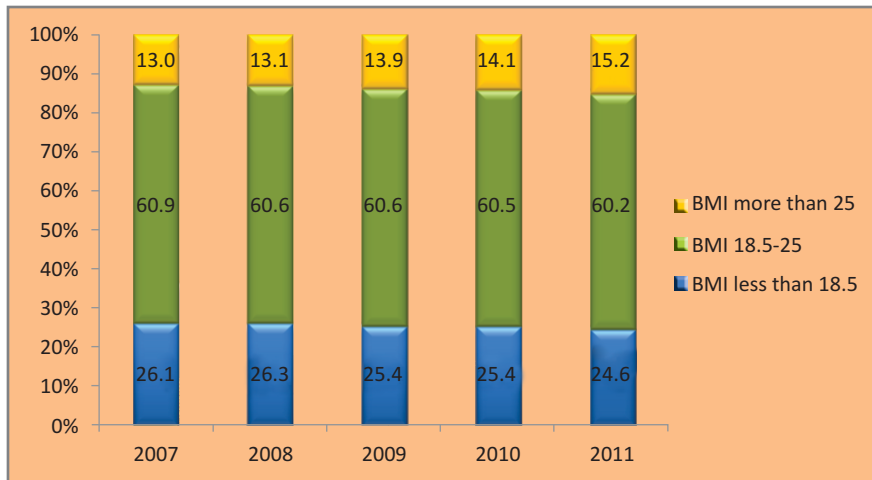


haemoglobin status.

Information for two of them is collected at field clinic visits and the other one describes the status as reported as at first postpartum visit. Percentage of mothers who have had their blood tested in field clinics and the percentage of mothers who were anaemic use the number of mothers attending antenatal clinics as the denominator. Sometimes mothers get their Hb status tested from sources other than the field clinic. Low Hb reporting from the test done outside the field clinic centers were also counted in calculating the anaemic status.

*Figure 15: Geographical variations in percentage of pregnant mothers with low BMI at booking visit 2010 and 2011*
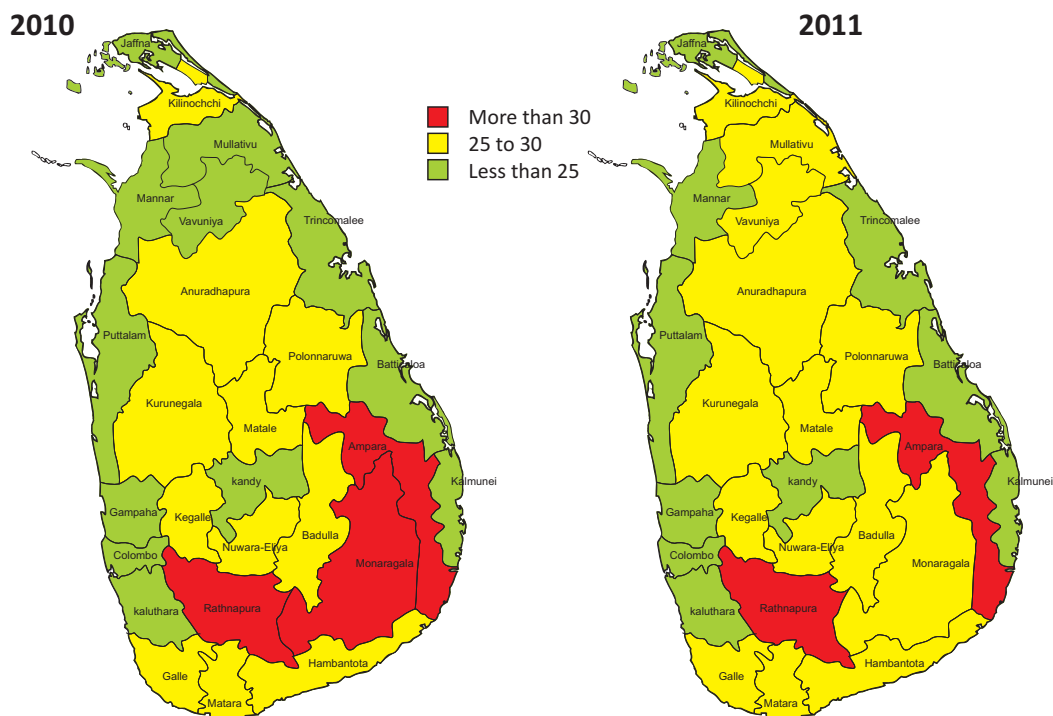
Retrospective reporting of the anaemic status as an antenatal morbidity at first postpartum visit is given in the section 6.1.5.4.The table 8 includes the reporting on Hb assessments and prevalence of anaemia over last 5 years among the mothers attending field ANC.

includes instructions which request the mothers to inform area PHMs about her delivery. The PHMs also should maintain active surveillance on the deliveries occurring to mothers who have been under her care using the Pregnant Mother's Register (H 513)

**_Table 8: Percentages of mothers whose haemoglobin status assessed at field clinic and who were anaemic 2011_**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % of mothers tested for hemoglobin out of mothers attending antenatal clinics | 72.2 | 72.4 | 62.7 | 57.8 | 56.1 |
| % of pregnant mothers anaemic out of mothers attending antenatal clinics | 5.1 | 6.1 | 6.4 | 8.3 | 9.1 |

The percentage of mothers who were tested for Hb at field clinics has been reduced over last 5 years while the percentage of mothers with anaemia has increased by 4 % during the same period. It is not appropriate to comment on the trend since different methods have been in use in the field for Hb testing for last few years. Of 9.1% anaemic mothers in 2011, 16.2 % was moderately anaemic (Hb 11-7 g /dl) while only 0.7 % was severely anaemic (Hb<7g/dl). As described in section 6.1.5.4 this could be an under reporting.

As in the case of low BMI, there is a notable geographical variation in prevalence of anaemia among mothers (Annexure 3)

**6.2 Intra-Natal and Newborn Care**

Almost all the deliveries around the country occur in institutions. It is the duty of the PHMs to report deliveries occurring to mothers who reside permanently in her area. The reporting is set to be optimized through 2 mechanisms. Almost all mothers are given a Child Health Development Record (CHDR) for their newly born children from the hospitals. CHDR

and Monthly Expected Mothers Register (H 515). In addition to number of deliveries, the reporting includes place of delivery, mode of delivery and type of personnel who assisted the delivery.

**6.2.1 Delivery reporting**

Table 9 presents deliveries reported by PHMs in 2011 according to different perspectives.

On average around 1/5th of total pregnancies registered were not reported as deliveries. Not counting pregnancies that had ended up as abortion as delivery and gaps in post natal registration may be possible reasons for this. Delivery reporting for estimated deliveries varied from 90.2 % (Kilinochchi) to 50.8 % (Colombo M.C.) Some portion of mothers are exclusively cared by the private sector may be a reason for this gap other than the two reasons given above. Details are given in the Annexure 4.

Almost all mothers were delivered in health institutions while only very few cases delivered at home. Only 0.11% of deliveries

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more than or equal to 2500 gm) and plurality (singleton or multiple). In addition number of abortions and still births are also reported.

In 2011 PHMs around the country have reported 319,516 live births (either singleton / multiple). In addition 2,282 stillbirths and 27,833 abortions were also reported. Figure 17 reflects the live births reported by PHMs as a proportion of the live births reported through the Civil Registration System.

It is observed that 12% of the live births occurred in the country is not captured by the field PHMs. This may be due to some portion of pregnant mothers not receiving health services through public health system. Under reporting of the birth by PHMs also may account for this to a certain extent.

### 6.4 Postpartum and Newborn Care

Family Health Programme makes provision for PHMs to pay at least 4 visits to a mother who had an institutional delivery, during postpartum period of these visits, at least 2 have to be made during first 10 days following delivery and the other 2 during 11 to 28 days and around 42 days (38-46 days) respectively

following the delivery. During these visits PHMs examine mothers and babies for any postpartum and newborn complications. In addition they should record antenatal and postpartum complications, support breast-feeding the newborn, counsel for family planning, advice on other health matters, administer vitamin A to mothers in case she missed it at the hospital and register the newborn for future care.

### 6.4.1 Postpartum visits

Postpartum visits made by PHMs during postpartum period are reported though RH-MIS. The table 10 examines the efficiency of these activities.

During 2011 PHMs around the country had visited 91.4% of postpartum mothers who were identified and reported by them at least once during the first 10 postpartum days. On average nearly 2 postpartum visits were made within the first ten days. However, it should be noted that percentage of deliveries reported out of registered pregnancies for 2011 was only 81.6% (Table 9). Estimated deliveries approximates that of pregnancies for the

**Figure 17: Live births reported by PHMs as a proportion of the live births reported through civil registration system 2007 -2011**
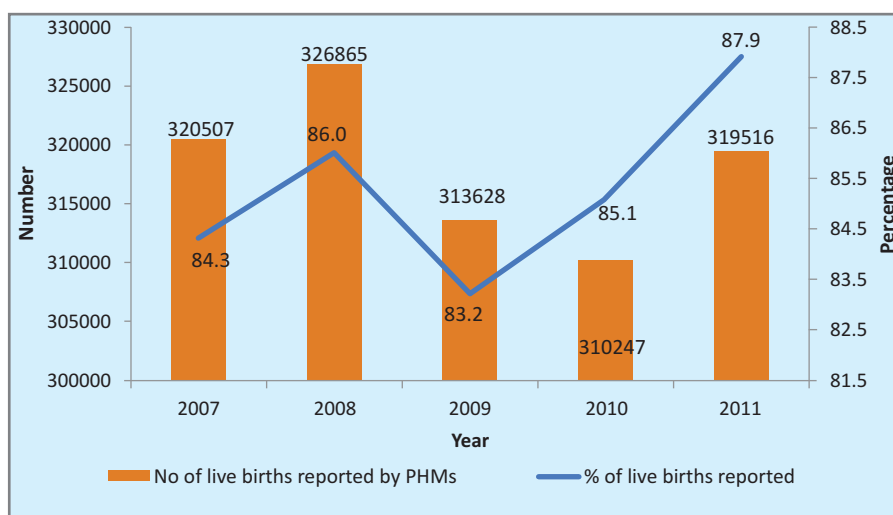
calculation throughout.

Figure 18 indicates that a considerable percentage of mothers may not receive their first postpartum visit during the first 10 days following delivery. Only 70.3 % of mothers would have received such care when assessed for the estimated deliveries. RDHS areas CMC (30.4%), Mannar (52.0%), Vavuniya (52.5%) and Mullaitivu (55.7%) were among areas with very low postpartum care for estimated deliveries.

The above analysis shows that domiciliary care provided during postpartum period is relatively poor compared to that during antenatal period. Annexure 5 and Figure 19 shows the district disparities in the postpartum care provided to mothers with in first 10 days following delivery as a percentage of estimated deliveries.

### 6.4.2 Postpartum morbidity

PHMs are instructed to record new cases of postpartum morbidities. In 2011, PHMs reported 32,882 mothers with postpartum

### Table 10: Pattern of postpartum visits provided for mothers by PHMs 2007-2011

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| At least 1 visit during 1st 10 days out of estimated deliveries | 70.8 | 72.2 | 69.0 | 68.2 | 70.3 |
| At least 1 visit during 1st 10 days out of reported deliveries | 88.8 | 90.6 | 89.2 | 90.8 | 91.4 |
| Average number of visits during 1st 10 days | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| At least 1 visit during 11th to 28th day out of reported deliveries | 20.7 | 17.9 | 16.3 | 15.5 | 14.6 |
| Postpartum visits by PHM at or around 42 days out of reported deliveries | 71.4 | 73.7 | 73.8 | 72.9 | 73.3 |

### Figure 18: Percentages of postpartum visits made within the first 10 days of delivery 2007-2011
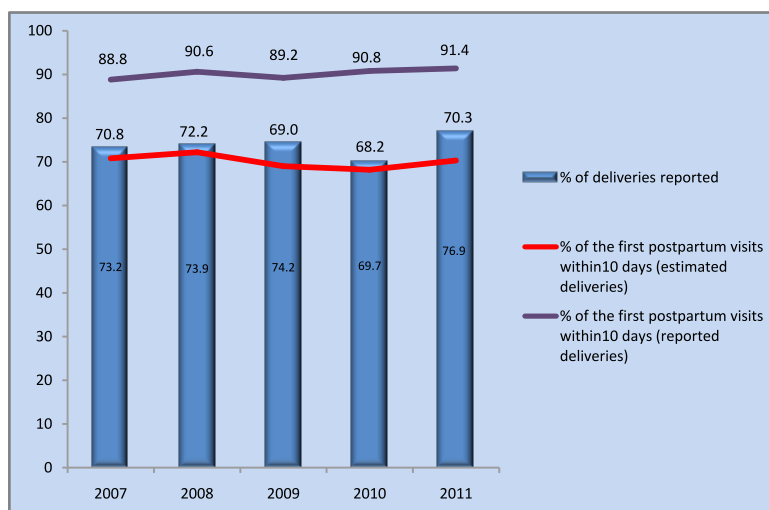
**Figure 19: Percentage of estimated pregnant mothers, who were receiving the first postpartum visit within the first 10 days of delivery in 2011**



haemorrhages and cracked nipples. The mostly reported morbidities could have been prevented by proper infection control and breast feeding practices.

**6.5 Maternal Mortality**

**6.5.1 Maternal Mortality in Sri Lanka**

Sri Lanka, being an industrially-developing country, has shown a remarkable success in reducing maternal deaths over the years. With a highest reported 2680 maternal deaths out of every 100000 live births in 1935, the country reported the lowest (31.1 per 100000 live births) in 2010 on par with most developed countries. Various interventions have reduced maternal mortality rate to a lowest in the region. Factors such as socio economic development, free education and related high literacy rate of population, free health services, better transport, control of communicable diseases, well organized primary health care systems etc have been attributed to this success. Currently Sri Lanka is on par with industrially - developed countries with low levels of maternal

morbidities. This amounts to 10.3% of the total reported deliveries. Figure 20 shows the cause specific postpartum morbidity rates for 10,000 reported deliveries. Most common postpartum problems include infections either in episiotomy or caesarean scar, engorged breast, fever, separated episiotomy,

**Figure 20: Number of postpartum morbidities and cases per 10,000 deliveries reported 2011**
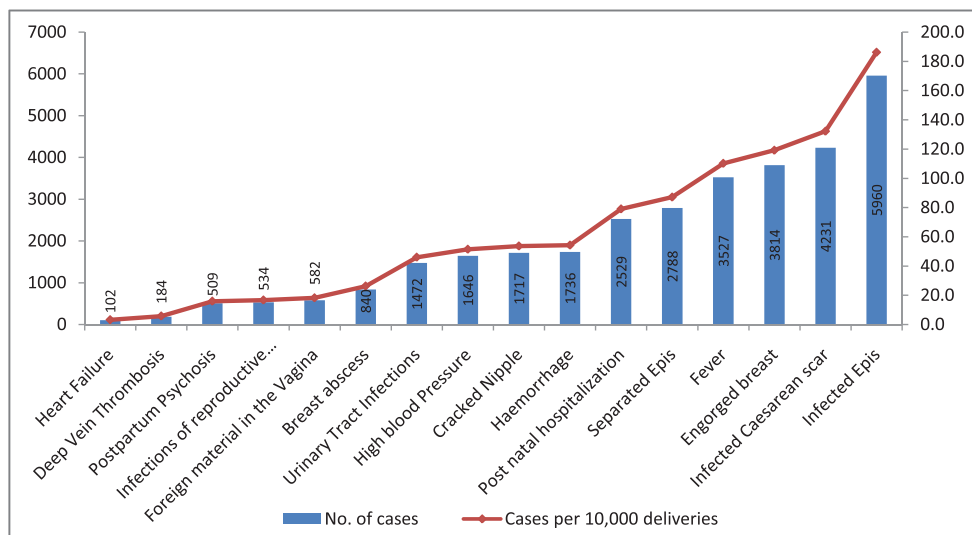
mortality and the contribution made by the National Family Health programme alone with the national maternal death surveillance and response system in this regard is substantial.

Following graphs demonstrate the gradual reduction of maternal mortality ratio (MMR) over the years, based on data from Registrar General's Department (1911-1995),-when there was no organized surveillance system- (Figure 21) and data from Family Health Bureau (1995 – 2010) after the Surveillance system was established. (Figure 22).

Maternal deaths were reported directly to the FHB since 1985, and by 1995 a methodical process was in established to capture all maternal deaths -in the country. FHB has been recognized as the official source of maternal mortality information therafter.

The present Maternal Death Surveillance and Response (MDSR) system of FHB identifies almost all maternal deaths in the country. Each and every probable maternal death occurring throughout the country is notified to the Family Health Bureau within 24 hrs of occurrence which are are reviewed at field, institutional, district and national levels subsequently. At the National Maternal Mortality Reviews conducted at district level by Family Health Bureau in collaboration with technical experts from the Sri Lanka College of Obstetricians and Gynaecologists and other relevant professional bodies, the cause of death is confirmed and the associated factors that may have contributed to the death are discussed to prevent such death in the future. This provides a platform to learn lessons from the mistakes and translate the findings into action both at national and sub-national levels.

Several quality dimensions were added to the MDSR system during the year 2010. The system was continuously reshaped to maintain the timeliness, data quality and coverage. FHB received 99% of field (H677a) and institutional (H677) maternal death investigation reports in 2010. Data quality of reports improved gradually with the

## *Figure 21: Maternal Mortality Ratio 1911 – 1995*
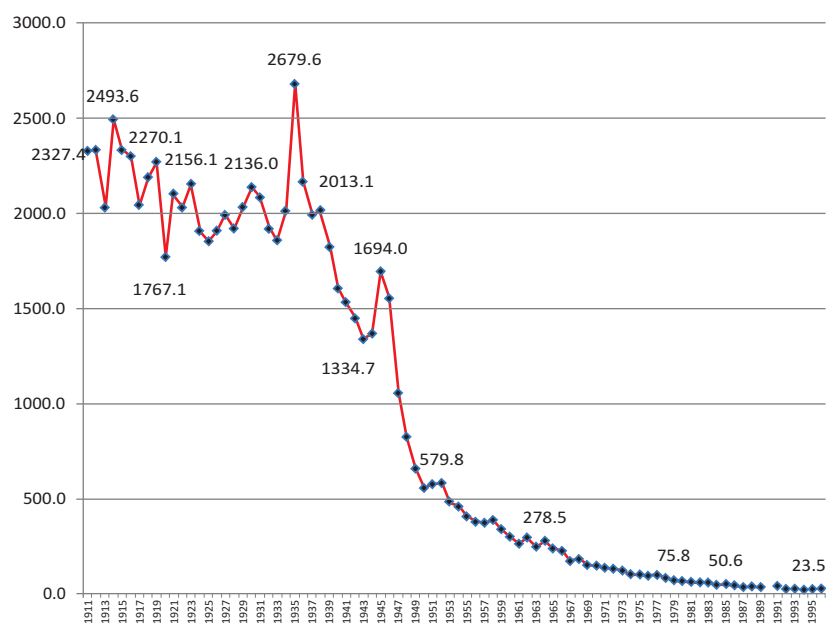


Source: Registrar General's Department

**Figure 22: Maternal Mortality Ratio 1995 - 2010**



Source : Family Health Bureau
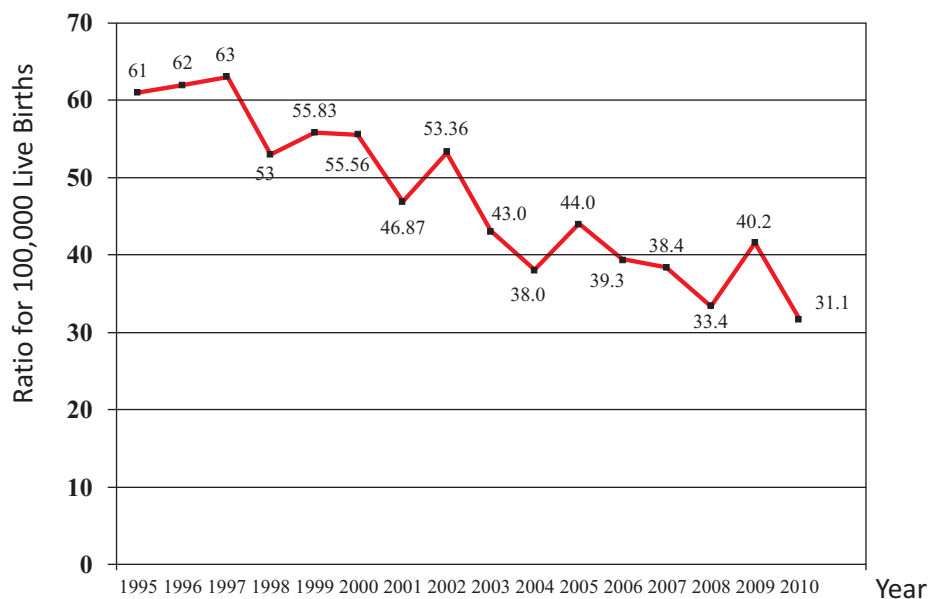
introduction of a mechanism to obtain data gaps in a structured format to MOOH and hospital heads. Conducting post-mortems on maternal deaths was made mandatory with the issue of two circulars by DGHS to all hospital heads and another by Secretary – Ministry of Justice and Law Reforms to all coroners. With the dissemination of above circulars to all relevant personnel and close follow up by FHB, the coverage of conducting of post-mortems on maternal deaths increased to 94% in the year 2010. Case scenario development was another quality dimension added to the MDSR system. A comprehensive maternal death case scenario was developed for each and every notified death based on field (H 677a) and institutional (H 677) maternal death investigation reports, pregnancy records and other field records and post-mortem reports. The format of conducting the national maternal mortality review meetings was restructured with presentation of case scenarios by FHB to initiate the discussion on the index maternal death .

## 6.5.2 Analysis of maternal deaths – 2010

In 2010, 241 probable maternal deaths were reported to FHB but 126 were confirmed as maternal deaths. The following figures (23 – 27) show the maternal deaths by direct / indirect causes, antenatal / intranatal / postnatal period, parity, age and ethnicity.

A majority (58%) of the deaths was direct maternal deaths and indirect causes accounted for 41.0% of deaths (Figure 23). Many of the maternal deaths occurred during postpartum period (55.0%), highlighting the need of focusing on postpartum interventions to prevent such deaths (Figure 24).

### 6.5.2.1 Maternal Mortality by socio demographic characteristics

Forty percent of maternal deaths occurred among primies while 9% occurred among mothers in parity 5 and above (Figure 25). Twenty eight percent of mothers died were more than 35 years of age (Figure 26). More or less in line with the ethnic composition of the country the majority (67%) of the

**Figure 23: Maternal deaths by type of cause**
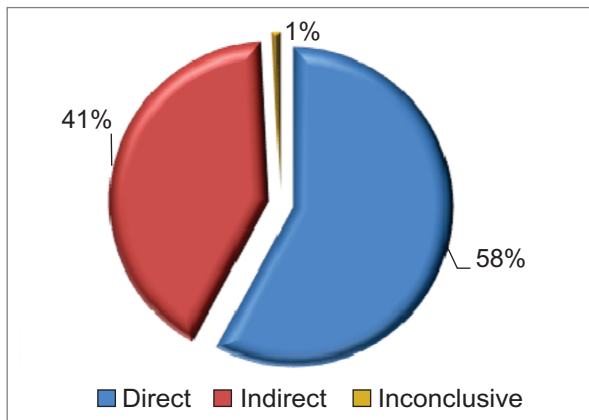


**Figure 24: Maternal deaths by pregnancy Period**
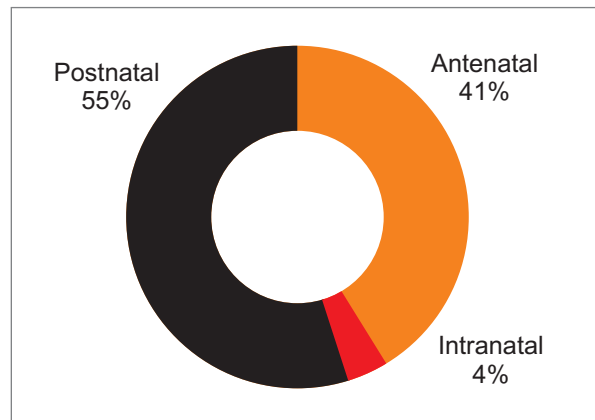


deceased were Sinhalese followed by Tamils (24%) and Muslims (8%) (Figure 27). In contrast to the customary pattern of maternal deaths in marital frame works, 7% (n = 9) of the dead mothers were not married (Figure 28) signifying the needs for innovative approaches in promoting family planning

methods to all women in the reproductive age group. The table 11 includes the trends in selected parameters related to maternal mortality over the past four years.

**6.5.2.2 Maternal Mortality by cause**

The causality analysis of maternal deaths in

**Figure 25: Maternal deaths by parity**
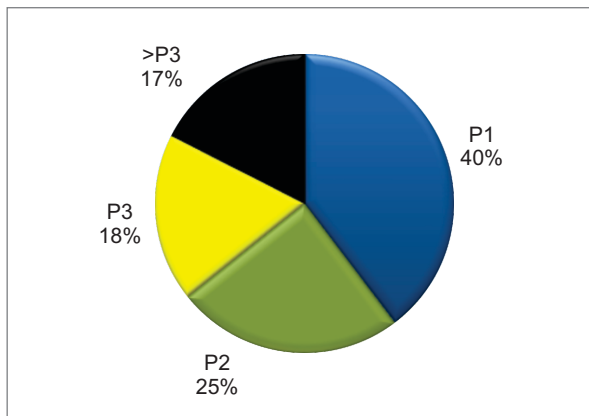


**Figure 26: Maternal deaths by age of the mother**
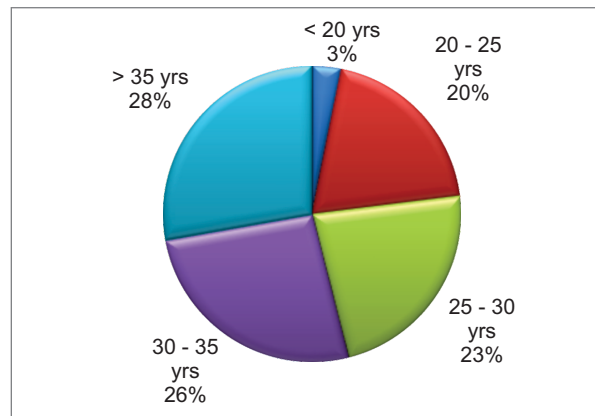


**Figure 27: Maternal deaths by Ethnicity**
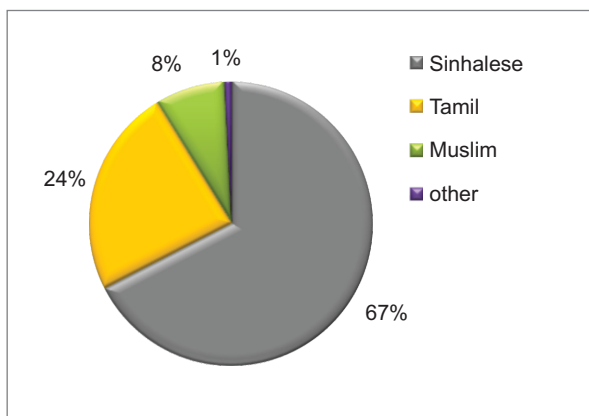


**Figure 28: Maternal deaths by Marital status**
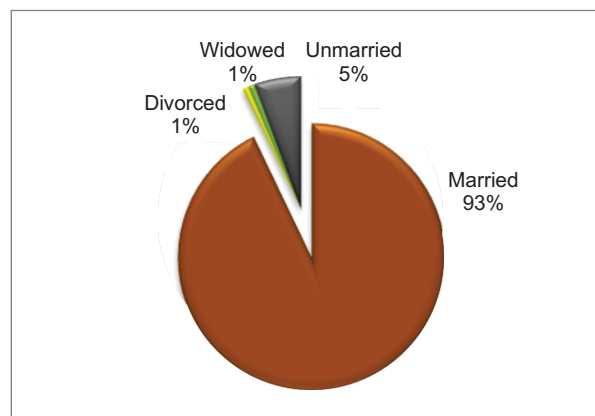
2010 (Figure 29) shows Obstetric Haemorrhage (17.5%), Septic Abortion (13.5%) and Heart disease complicating pregnancy (10.3%) as leading causes. Significantly, many underlying medical causes have contributed to deaths. The graph draws the attention for need for cause-specific preventive strategies to reduce maternal deaths further in the country.

Cause-specific maternal mortality ratios (CSMMR) also reduced over the years to lower levels in 2010 especially in obstetric hemorrhage (5.4), hypertensive disorders (3.0) and Amniotic / Pulmonary embolism (1.5) (Figure 30). However CSMMR for septic abortion remains more or less stagnant over the years.

*Table 11 : Maternal Mortality Ratio by type of cause, pregnancy period, parity and maternal age 2007-2010*

| Maternal Mortality Ratio | | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|
| Type of maternal death | Direct | 25.7 | 17.8 | 25.2 | 18.0 |
| | Indirect | 10.4 | 14.3 | 14.6 | 12.8 |
| Timing of deaths | Antenatal | 10.3 | 12.6 | 13.6 | 12.8 |
| | Intrapartum | 1.4 | 3.5 | 0.8 | 1.2 |
| | Postpartum | 14.1 | 18.0 | 23.7 | 17.0 |
| Parity | P1 | 11.6 | 10.1 | 10.6 | 12.4 |
| | P2-4 | 15.4 | 16.3 | 16.6 | 15.8 |
| | >P5 | 6.5 | 3.0 | 2.8 | 3.0 |
| Maternal age | <19 | 1.4 | 1.2 | 2.0 | 1.2 |
| | 20-35 | 27.3 | 24.4 | 27.4 | 21.5 |
| | >36 | 9.2 | 7.2 | 10.6 | 8.4 |

*Figure 29: Number of maternal deaths from different causes  – 2010*
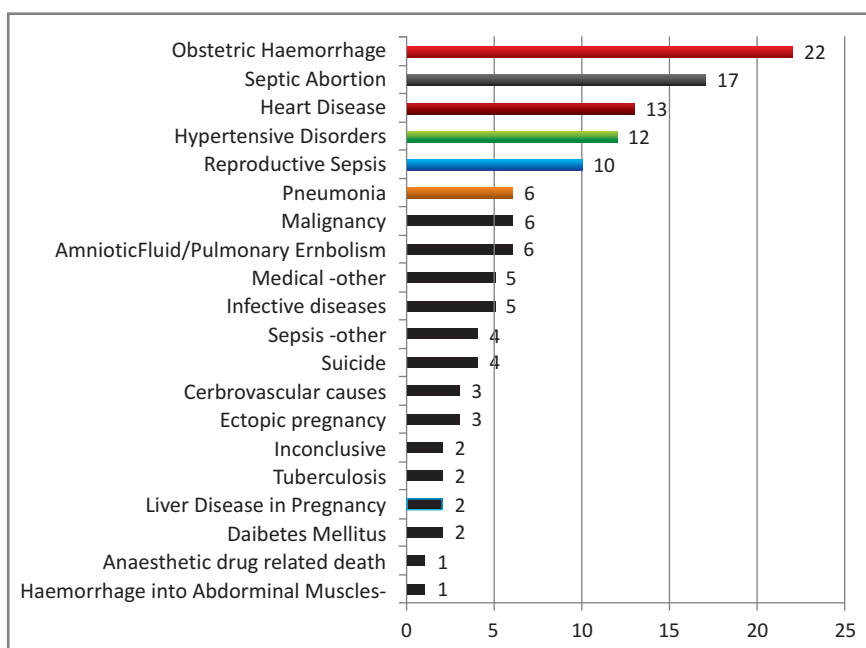
### 6.5.2.3 Maternal Mortality by RDHS area

The following graph shows the district variations in MMR in 2010 (Figure 31). Several districts (Mannar, Jaffna, Trincomalee & Hambantota) persistently show higher MMRs over the past few years, highlighting the need for district specific preventive strategies.

*Figure 30: Cause-specific Maternal Mortality Ratios 2001 - 2010*
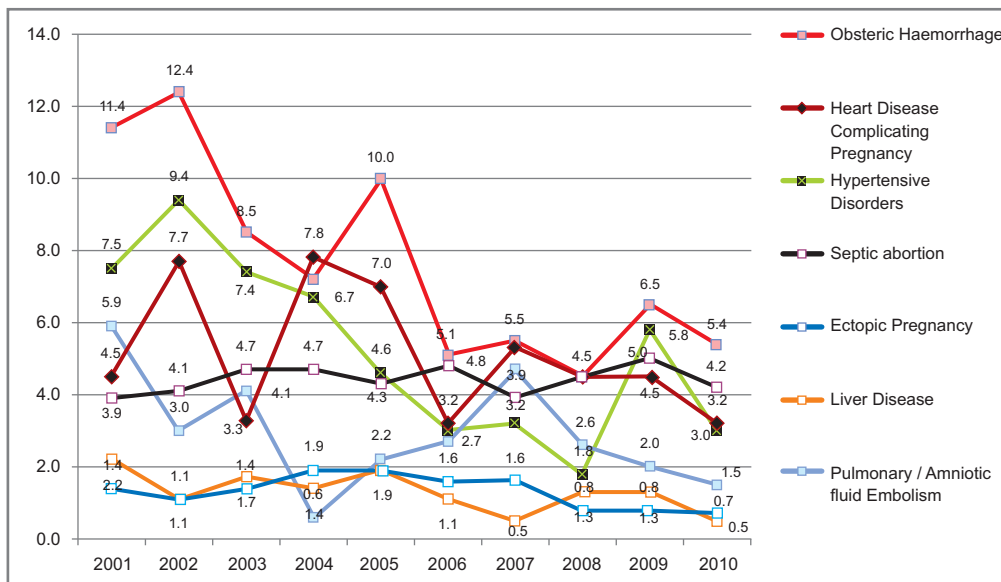


\* CSMMR = Number of deaths by each cause per 100000 live births

*Figure  31: Maternal Mortality Ratio by RDHS area  – 2010*
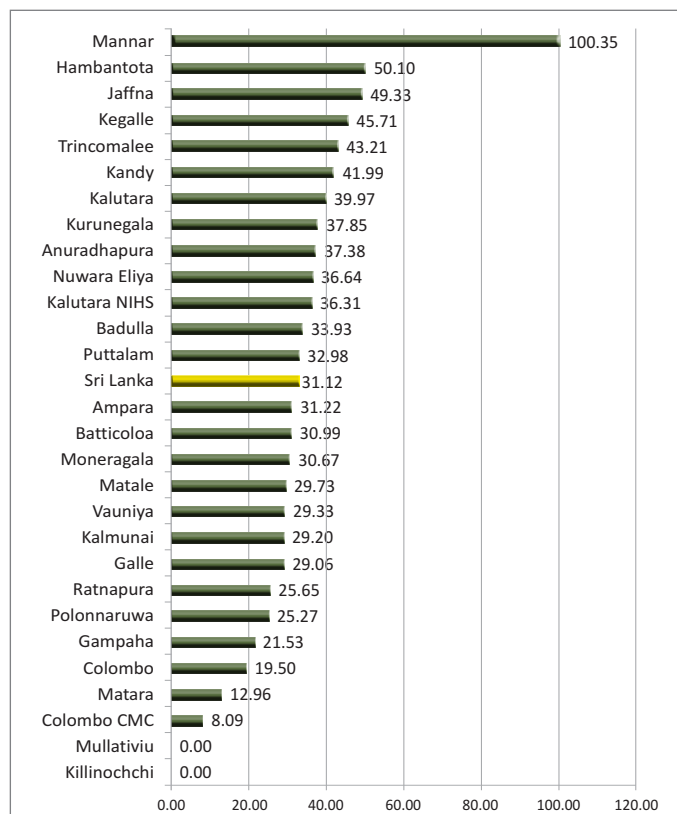
### 6.5.2.4 Care provision for the deceased mothers

The analysis of the maternal deaths in relation to the care received provides an opportunity to rectify deficiencies at different service delivery points.

Nearly 90% of the pregnant mothers who died in the year 2010 died in hospital (Figure 32) and of them 94% died at either a base, general or teaching hospital where specialized facilities are available (Figure 33). This indicates that there had been an adequate opportunity for interventions.

Provision of family planning services to needy women is a priority in preventing unwanted

year 2010 (Figure 35). Further analysis of maternal deaths based on three delay model (whether there is a deficiency in seeking (D1), reaching (D2) or treating (D3)) revealed that delays were there in 69% of deaths (Figure 36). Figure 37 shows that 67% women did not seek care in time (D1) for their illnesses and also healthcare workers (both field and hospital) did not provide adequate care (D3) in 52% of the cases. This should alarm healthcare workers and administrators in both preventive and curative sectors since making women aware of health conditions which need timely care seeking is a fundamental in providing care for the reproductive age women and missed opportunities in receiving appropriate

**Figure 32: Maternal deaths by place of death**
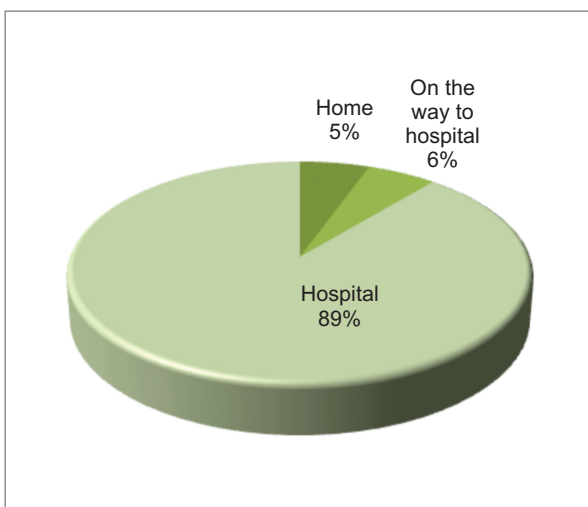


**Figure 33: Maternal deaths by type of Hospital**
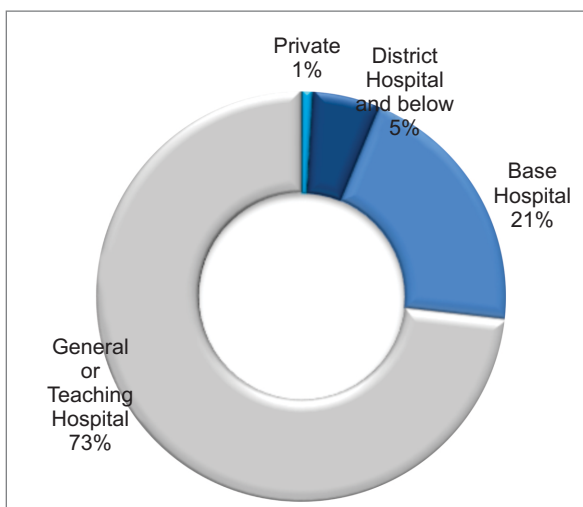


pregnancies. However, figure 34 shows that one third of the maternal deaths (32%) occurred in the year 2010 could have been prevented if unmet need for family planning had been addressed by relevant healthcare personnels.

At the national maternal mortality review, the experts assessed the preventability of the index maternal death. Two thirds of the deaths (63%, n = 79) were preventable in the

care once they accessed the health facility are of major concerns.

A fundamental aspect of maternal mortality surveillance is the utilization of the findings which are of policy concerns to relavent technical and administrative groups and providing feedback to all who provide services to women for corrective actions. Minutes of the each national maternal mortality review of the relevant district is disseminated to a

**Figure 34: Maternal deaths by unmet need for Family Planning**



UMN FP +
32%

No UMN
Fp
68%
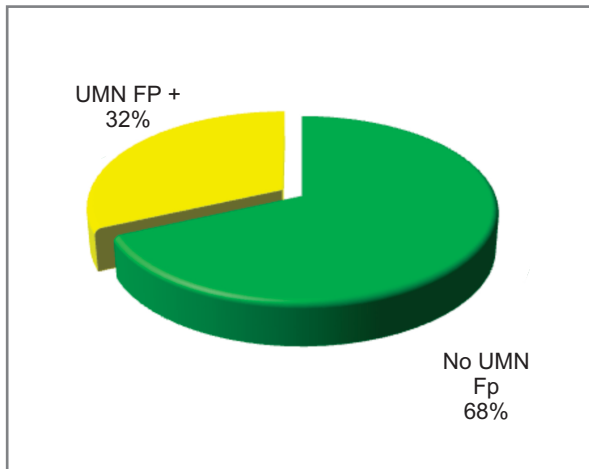
**Figure 35: Maternal deaths by preventability**



Inconclusive
23%

Preventable
63%

Not
Preventable
14%
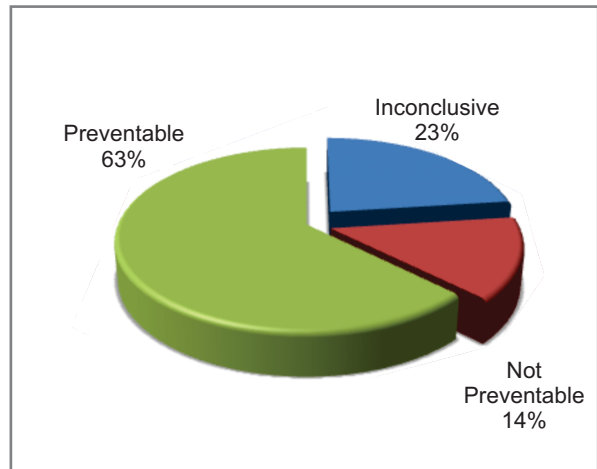
heterogeneous group of stakeholders. At present, several mechanisms are available to put the recommendations into action starting from the ground level (PHM level) up to national level (Secretary Health) with two

advisory committees (Technical advisory Committee on Maternal Health and Family Planning and Newborn Care and Child Health) and National Committee on Family Health.

**Figure 36: Maternal deaths by presence of delays in service provision**



Inconclusive
3%

No delay
28%
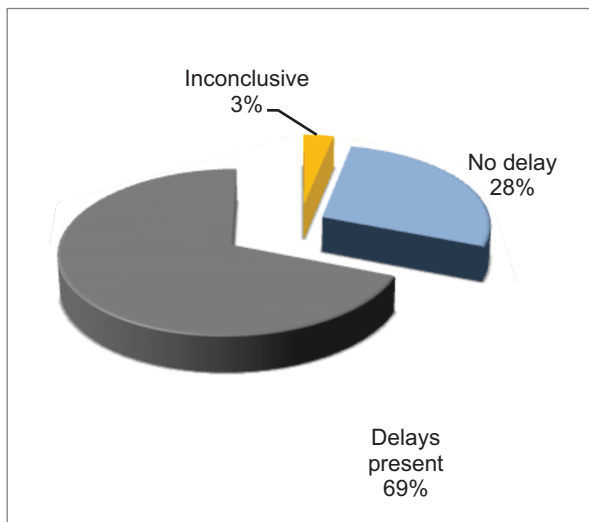
Delays
present
69%

**Figure 37: Maternal deaths by three delays**



D1 & D3
19%

D2 & D3
2%

D1, D2 &
D3
1%

D1, D2
2%

D1
45%

D3
30%

D2
1%
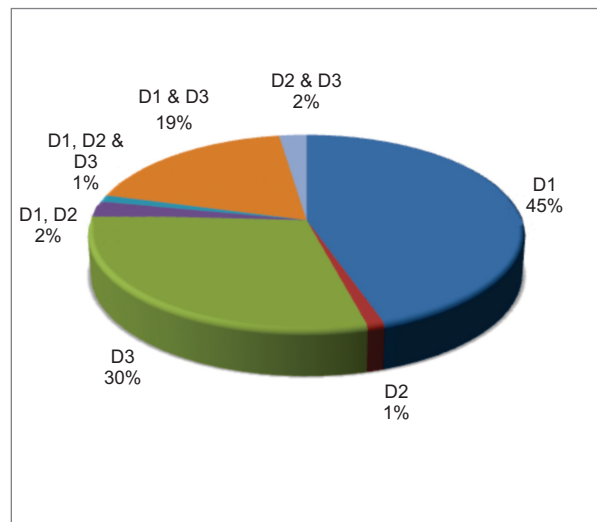
# 7 Child Care

Family Health Programme is organized to ensure the continuum of care during neonatal period following delivery and during preschool, school and adolescent years. At initial postpartum visits conducted within first 42 days, the PHM should provide basic domiciliary care to newborn children. These includes, assessment of general health, breast feeding, signs of common illnesses, followed by advising mothers accordingly and make necessary referrals. Subsequent interventions for children include immunization, growth assessment and promotion, assessment and promotion of development, food and vitamin supplementation and health education to mothers. In addition, all children are expected to be registered in the Birth and Immunization (BI) register (EPI 3/79) and is a unique documen. It could be considered as one of the most comprehensive community based registers of the country, which records details of all children permanently residing in the PHM area.

## 7.1 Registration of children

Ideally total number of infants registered (permanent residents of the PHM area) should approximate the total number of estimated births of the country. The figure 38 presents the percentage of total estimated children who were registered by PHMs, since 2007 to 2011. It shows that relative to the estimated births approximately 13 -18 % of newborns are not registered.

Table 12 shows infants and 1-5 year children under care of PHMs as percentages of estimated births in corresponding years. Reaching the target group seems to be highest in the second year of life.

## 7.2 Field and Clinic care

Following infant registration, care is given to the infant until 5 years of age at clinic and in the field. Home visits carried out after 42 days of delivery are specifically aimed at the infant, despite giving care during postpartum period. The infants are supposed to visit field clinic for neonatal examination by the MOH at 4 weeks and immunization according to the schedule. The weighing is mainly done at child welfare clinics and field weighing posts conducted by PHMs which are for 40-60 children. During these health contacts immunizations,

*Figure 38: Trends of infant registration out of estimated births 2007 to 2011*
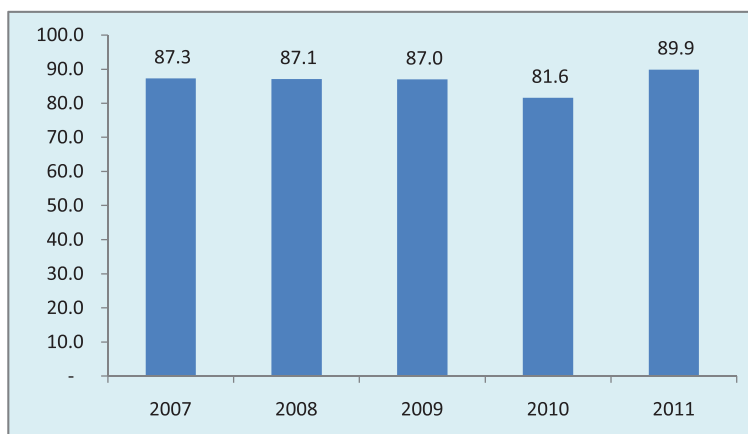
assessment of their growth and developmental status, vitamin supplementation and health awareness are being done. Table 13 presents some of the indicators that reflect the field care performances made by PHMs.

The field visits made for infants during the year were not optimal. Nearly 28% of infants registered have not had at least a single field visit during infancy. However, those who received home visits of PHMs had about 7 visits during first year of their life. All registered infants in Hambantota and Kurunegala district had been visited at least once by PHM at home (100%) and the

year could be obtained.

If an assumption is made that average number of infants under care is more or less equal throughout the year, average number of weighing for a child remains around 8-10 during last 5 years. This could also be viewed as the percentage of total expected number of weighing carried out by PHMs. The table 13 shows around 84 % of total expected infants weighing were carried out by the PHMs. Every infant is supposed to get their length measured at birth, 4, 9, 18 months and 2 years and thereafter every 6 months if proper growth is indicated. If the child is malnourished during first two years of their

**Table 12: Percentages of infants and children under care out of estimated number from 2007 -2011**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % Infants under care | 87.3 | 87.6 | 81.8 | 81.7 | 82.4 |
| % of  young children under care (2nd year) | 99.0 | 96.5 | 91.9 | 90.8 | 87.4 |
| % of preschoolers under care (3rd to 5th year) | 80.1 | 81.7 | 82.3 | 84.7 | 86.1 |

percentage of that was reported to be lowest in the district of Mannar (20%). The districts of Vavuniya (29.3%), Puttlam (38.2%), Jaffna (46.0%), Polonnaruwa (54.0%), Matale (54.9%) and Colombo Municipal Council area (40.5%) had also reported very low coverage of infant field visits. Children under two years are supposed to be weighed once a month. Accordingly, infants should have been weighed 12 times during infancy. Children above two years are weighed once in three months and if they are malnourished monthly weighing is recommended. However, the data for individual children are not included in the RH-MIS. What is available is the total numbers of infants and 1-5 year  children weighed during the year. Hence, only an approximation of average number of weighing for a child per

life length measurements need to be done every two months and every three months height measurement is recommended if the child continues to be  malnourished after two years.

The clinic visits for infants are meant for 2 main reasons; the first neonatal examination at 1 month of age and vaccinations at 2, 4, 6, and 9 months. This indicates, ideally at least 5 clinic visits are required during infancy.

Table 13 shows the average number of clinic visits by an infant is around 5 during past 5 years. This reflects the almost universal health seeking behaviour of Sri Lankan mothers. Considerably higher percentage of estimated infants and children received their Vitamin A mega doses. District differentials are given in Annexure 6.

*Table 13: Indicators of field and clinic care performance from 2007 -2011*

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % Infants having at least 1 home visit after 42 days out of registered infants | 63.0 | 63.9 | 64.3 | 61.8 | 72.3 |
| Average number of home visits per infant | 8.6 | 9.0 | 8.8 | 8.7 | 6.6 |
| Average number of weighing per infant during a year | 8.4 | 9.0 | 9.8 | 9.8 | 10.0 |
| % of infant weighings | 70.0 | 75.2 | 82.0 | 79.9 | 84.0 |
| % of young children  1-2 years ) weighings | 63.7 | 67.8 | 73.0 | 72.7 | 77.1 |
| % of infants making at least one clinic visit (of registered infants) | 96.7 | 99.7 | 99.6 | 98.3 | 97.9 |
| Average number of clinic attendance for an infant | 4.8 | 4.7 | 5.2 | 5.2 | 5.2 |
| % of estimated infants given Vitamin A at 6 or 9 months | 93.3 | 93.0 | 79.5 | 75.4 | 80.5 |
| % of estimated children given Vitamin A at 18 months | 93.1 | 88.9 | 85.2 | 84.0 | 82.2 |
| % of estimated children given Vitamin A at 3 years | 87.2 | 86.5 | 83.7 | 87.5 | 85.5 |

## 7.3 Nutrition

Child under nutrition is a major public health problem in Sri Lanka. RH-MIS gather data on low birth weight and weight for age of infants, young children  and preschool children.

### 7.3.1 Low Birth Weight

According to the reporting of PHMs throughout the country, since 2007 up to 2011, nearly 12-13 % of newborns weighed less than 2500 grams at birth. This figure is lesser than the percentage of LBW; 16.6, reported by the Demographic and Health Survey (DHS) 2006/07.

The figure 40 shows the  district disparities in LBW percentages. NuwaraEliya (20.6%) reported the highest percentage of newborn with LBW. Districts with higher percentages of estate population (Badulla 16.5%, Ratnapura 15.5%) and Monaragala 15.2%, Ampara 13.9%, Kegalle 14.1%, Mullathivu 14.0% and Polonnaruwa 14.5% districts also reported the higher percentages of newborns belonging to LBW category (Annexure 7). Percentage LBW was calculated for the number of single births reported through RH-MIS.

### 7.3.2 Malnutrition among infants and preschool children

Growth monitoring is mainly done through serial weight measurement of infants, young children  and preschoolers, comparing their age specific weights with that of WHO new growth standards. Nutrition counselling, more frequent weighing and increased field and clinic follow ups are indicated when growth faltering and under weight is

**Figure 39: Distribution of percentage of LBW since 2007-2011**
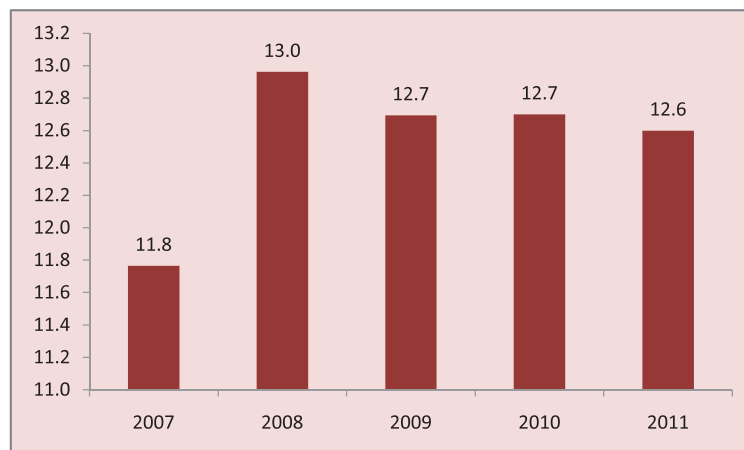


encountered. Though the measuring of height/length is being done at the field, data with reference to length/height are not yet been collected through the routine information system except annually for nutrition month. Hence, only the percentage of children belonging to underweight category is being used as an indicator to assess the nutritional status of the children less than 5 years of age routinely. Figure 41 shows the

**Figure 40: District disparities in LBW percentages in 2011**



different under nutrition indicators. The percentage of LBW among singleton births remained more or less static around 12% during last 5 years. Reducing trends are seen in other malnutrition categories over the years. A cumulative effect is seen in the percentage of infants and children malnourished with advancing age. In 2011, the percentage of children belong to underweight category has increased from 7.5 % in infancy through 19.5% in 2nd year to 27% in 3rd to 5th year of life.

## 7.4 Infant and Child deaths

Family Health Programme gathers data on number of infants and child deaths, whether or not infant deaths were investigated and if investigated the causes of deaths. PHMs report infant and child deaths occurring in their field. Table 15 presents the infant and children under five mortality rates and the proportion of reported infant deaths investigated by PHNSs (or SPHMs when PNHSs are not available). Calculations were based on the number of deaths and live births reported through the RH-MIS. Nearly three quarter of infant deaths occurred during neonatal period (Figure 42).

*Table 14: Percentages of LBW, underweight infants and preschoolers from 2007 to 2011*

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| % LBW | 11.8 | 13.0 | 12.7 | 12.7 | 12.6 |
| % moderately underweight infants | 9.2 | 8.6 | 7.4 | 6.5 | 6.3 |
| % severely underweight infants | 1.5 | 1.6 | 1.4 | 1.2 | 1.2 |
| % moderately underweight young children (2nd year) | 27.0 | 26.1 | 19.9 | 17.2 | 15.9 |
| % severely underweight young children (2nd year) | 6.6 | 6.1 | 4.9 | 3.9 | 3.6 |
| % moderately underweight preschoolers' (3rd to 5th year) | 24.9 | 27.5 | 27.3 | 26.0 | 22.6 |
| % severely underweight preschoolers' (3rd to 5th year) | 7.2 | 6.7 | 5.4 | 4.8 | 4.2 |

District differentials of child malnutrition are given in Annexure 7.

*Figure 41: Trends in LBW, infant, young children and preschoolers underweight (moderate and severe) from 2007 -2011*
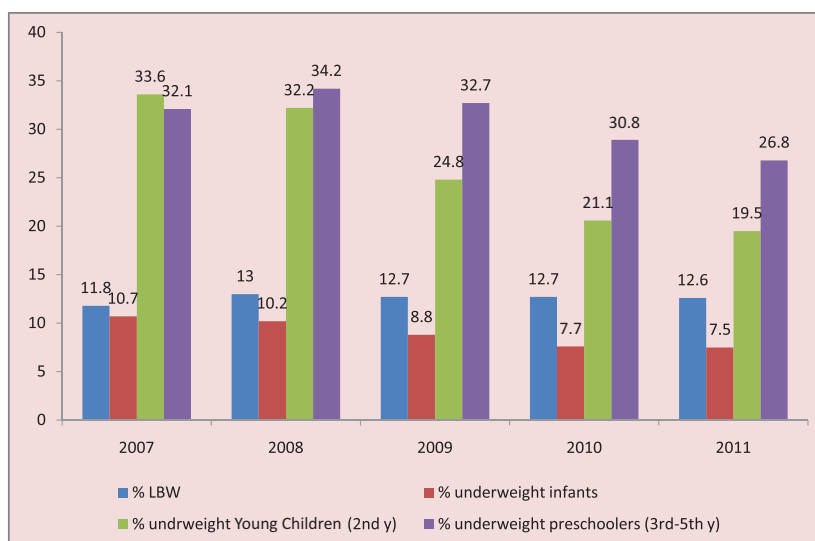


Nearly 92 % of reported infant deaths were investigated at field. This investigation includes verbal autopsy, examination of death certificates and hospital documentations. Therefore reasonably accurate causes of death could be ascertained. Figure 43 presents the causes of death of investigated infant deaths in 2011.

The most of the infants succumbed to the congenital abnormalities and prematurity. Asphyxia happened to be the next common cause of infant deaths. Sepsis also contributed to nearly one tenth of infant deaths (Figure 43). Congenital abnormalities remained the most frequent cause of 1 to 5 year mortality as well. Accidents, respiratory illnesses and

diarrhoeal diseases were identified as next common causes of 1-5 child mortality (Figure 44).

Reporting of infant deaths by PHMs during year 2011 has amounted to an Infant Mortality Rate of 10.2 per 1000 live births. The districts reporting very high mortality rate include Jaffna (17.7%), NuwaraEliya (14.3%), Kalmunai (14.0%) and Batticaloa (13.8%).

The Figure 46 compares the National Infant Mortality Rate (IMR), calculated from the RH-MIS with the IMR reported by the Registrar General. A clear difference is seen in the IMR calculated from 2 sources of information. Five years preceding 2001, the Registrar General's IMR reporting was systematically higher than that reported from RH-MIS. The trend had reversed since that year and both sources however, demonstrate a clear declining trend. Reporting of infant births and deaths are low through RH-MIS compared to Registrar General's Department reporting. However the reporting gap between two sources was higher for birth compared to death. This could be a reason for the discrepancy in the mortality figures given by two sources. However reporting of both births and deaths through RH-MIS had been improving in recent years and in year 2009 96.2 % of deaths and 83.2 % of live births were reported.

**Table 15: Mortality rates based on reporting through RH-MIS and percentage of infant deaths investigated from 2007 to 2011**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Neonatal mortality rate (1000 live births) | 8.1 | 7.6 | 7.3 | 8.0 | 7.6 |
| Post neonatal mortality rate (1000 live births) | 10.9 | 10.7 | 10.4 | 10.6 | 10.2 |
| Peri-natal mortality rate (1000 births) | 14.6 | 14.3 | 13.0 | 13.7 | 12.6 |
| Under five mortality rate (1000 live births) | 12.6 | 12.4 | 12.2 | 12.2 | 11.6 |
| Number of infant deaths reported | 3500 | 3501 | 3263 | 3293 | 3269 |
| % of reported infant deaths investigated | 89.9 | 93.5 | 93.4 | 89.0 | 92.0 |
| Still birth rate (1000 births) | 8.5 | 8.7 | 7.5 | 7.7 | 7.1 |
| Infant mortality rate (1000 live births) | 10.9 | 10.7 | 10.4 | 10.6 | 10.2 |

**Figure 42: Percentage distribution of infant deaths according to age at death 2011**
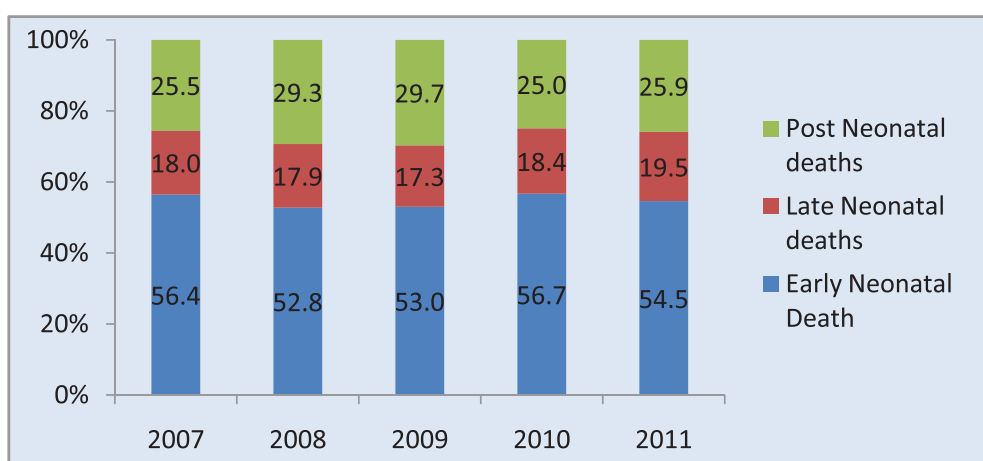
**Figure 43: Percentage distribution of causes of infant deaths in 2011**
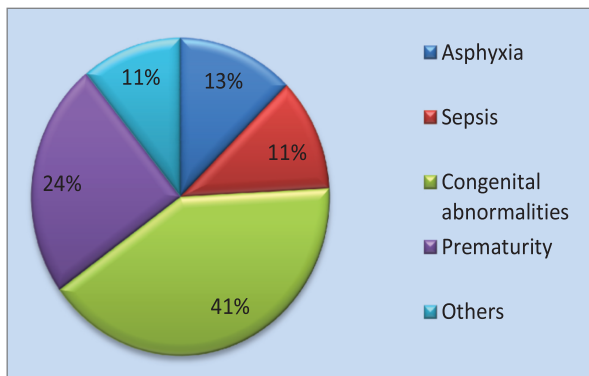


**Figure 44: Percentage distribution of causes of 1- 5 year child deaths 2011**
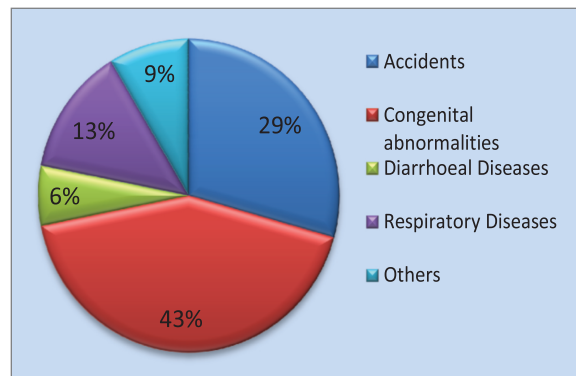


## 7.5 Nutrition Month 2011

Having understood the need to uplift the nutritional status of mothers and children, the concept of "Nutrition month" was introduced to the system by the Family Health Bureau a few years back. Routine activities

**Figure 45: Geographical variations in Infant Mortality Rate (RH-MIS)**
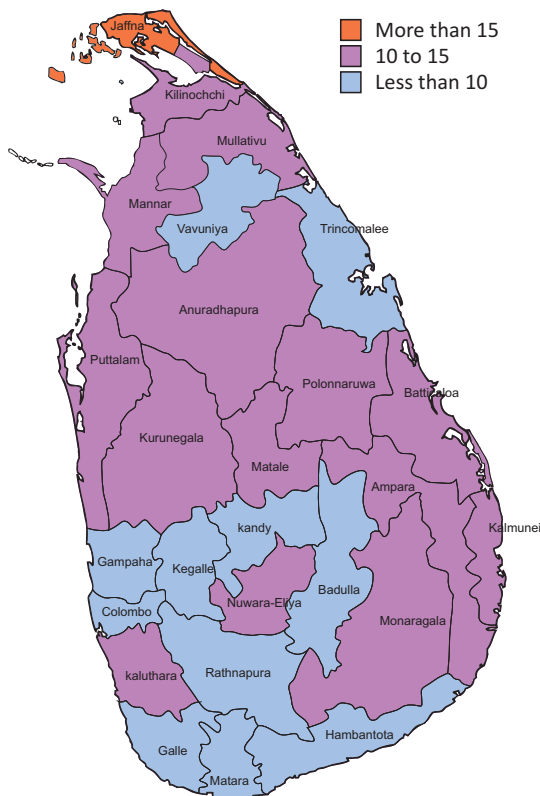


implemented through the Family Health Programme for growth monitoring and promotion were given emphasis during the month and usually the month of June is declared as the "Nutrition Month" annually. The theme for Nutrition Month 2011 was "Nutrition for all - play your role" and it was officially launched by the Nutrition Coordination Division of the Ministry of Health in collaboration with Family Health Bureau and other stakeholders. All MOHs are required to send a return on the summary of the activities done during the month which is introduced to the Public Health Staff during a technical update for them at the FHB. Details of the nutrition related activities done and the nutritional status of the under five children whose weight and length/height was measured during the month are included in the return.

During 2011 92.6% of the MOHs have sent their returns on nutrition month activities. Nutrition status of 98 % of under five children in these areas has been assessed during the month and figures for nutrition status for 2011 along with that for previous years are given in the Figure 47.

*Figure 46: Comparison of trends in National IMRs determined from RH-MIS and Registrar General's 2009*
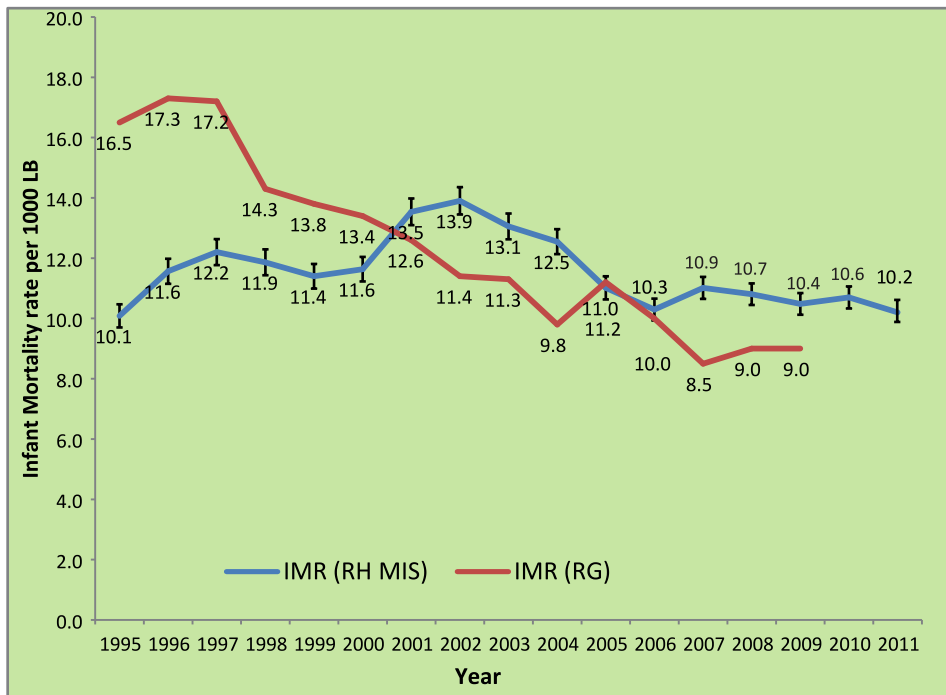


*Figure 47: Under nutrition status among under five children from 2009 to 2011*
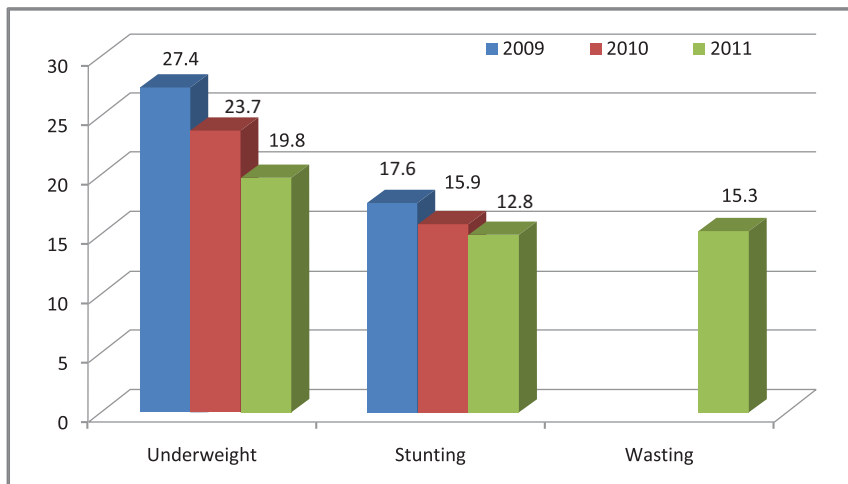
# 8 Care for School Children and Adolescents

Approximately 3.9 million children attend 9675 government schools around the country. Primary school completion rate of these children reaches 97%, while only 89% completes up to grade 9.Adolescents (10-19 years) comprise 19% of total population in Sri Lanka and of them 70% attend schools. School health programme targets children and adolescents attending schools.

However a successful programme to reach out of school adolescents is yet to be established. Provisions are included in Family Health Programme to deliver preventive health care services to school children and adolescents. Constellation of these provisions is identified as school health programme. Ministries of Health and Education share a joint responsibility of implementing the school health interventions. Family Health Bureau, being the focal point of the school health programme, is involved in planning, providing technical guidance, monitoring, evaluating and conducting research and management of logistics relevant to school health activities.

The Medical Officer of Health is responsible for implementation of the school health Programme in collaboration with the Zonal Educational Officers and School Principals. The Public Health Inspector organizes the school health activities at the local level. In the Municipality areas of Colombo, Kandy, Galle and Jaffna, School Medical Officers implement the School Health Programme.

The National Working Group on School Health which was established in 2001 with the participation of relevant officials from the central and provincial health and educational ministries overlooks the salient issues related to the School Health Programme.

At present the school health programme focuses 5 major thematic areas. These include:

1. School medical services including counseling

2. Maintenance of Healthy School Environment

3. Life skills based Health Education (includes Sexual and Reproductive Health)

4. School Community Participation

5. Healthy school policies

School medical services include School Medical Inspection (SMI) of children and making relevant referrals. Public Health Inspectors carry out the initial screening of children and MOHs then conduct Medical examination. In small schools (with enrolment less than 200 children), all the children are examined once a year while in the larger schools (with enrolment more than 200 children) all students in grades 1, 4, 7 and 10 are examined annually. This service was recently extended to children in Grade 10 with a view to capture adolescents attending schools. Assessment of nutritional status, detection and correction of health problems, providing immunization and worm treatment, provision of micronutrient supplementations to children are focused during the School Medical Inspections. Treatment with anti-helminthic is followed by weekly treatment with iron, folic acid and vitamin C tablets for a

period of six months with the assistance of the class teachers of grade 7 and 10. The children detected with any defect are either treated locally or referred to the closest specialist clinics for necessary management. Thereafter, they are followed up by the Public Health Inspectors to ensure the correction of defects. In addition MOHs are supposed to organize Behaviour Change Communication programmes aimed at children with a view to promote their health with special reference to sexual and reproductive health concerns, reduction of risk behaviours for tobacco, alcohol, drugs abuse and HIV/AIDS.

Apart from the SMI, The Public Health Inspectors conduct an annual sanitation survey in the schools, findings of which are used for making the school environment safe and healthy. The necessary recommendations are thereafter sent to the school principals for corrective actions. These officers work closely with officials of the Education Ministry and other Government and Non-Governmental Organizations to provide services such as safe water, sanitation and refuse disposal at school.

The reporting of school health related data is not optimal. In 2011, only 285 (87.7 %) MOH areas submitted Quarterly School Health Returns (H 797) for all four quarters. Hence, school health activities described in this report is limited to school health performance

of MOH areas reporting the progress. Annexure 8 shows the proportion of MOH areas in each health area sent H 797 for all quarters during 2011.

**8.1 School Medical Inspection Coverage**

Table 16 presents the distribution of schools and number of students to be examined in all reported MOH areas.

MOH areas that submitted H 797 had 8,497 schools and 3,287,257 children enrolled. Of them 1,173,123 were to be examined. In 2011, SMIs were conducted in 8,063 schools resulting in overall school coverage of 94.9 %. The coverage of schools with less than 200 and more than 200 students were 96.3 % and 93.5% respectively (Figure 48). Approximately 96% of the children that were to be covered by SMI had been examined during 2011 (Table 16). Annexure 8 shows geographical variations in SMI coverage.

**8.2 Malnutrition among School Children**

During SMIs students are assessed for their nutritional status. Stunting is assessed in grades 1 and 4 only. Around 7 to 8 % of children in grades 1 and 4 were stunted. Wasting was higher compared to stunting which ranged from, the lowest at 13.8% in grades 1 and 4 and the highest (22.4%) in grade 7. (Figure 49)

*Table 16 : Percentage of children examined during School Medical Inspection  2011*

| Less than 200 | | More than 200 | | Total | |
|---|---|---|---|---|---|
| Students to be Examined | Students Examined % | Students to be Examined | Students Examined   % | Students to be Examined | Students Examined  % |
| 333,000 | 96.8 | 840,123 | 95.6 | 1,173,123 | 95.9 |

*Figure 48: Total number of schools available and number of schools where SMI were conducted 2011*
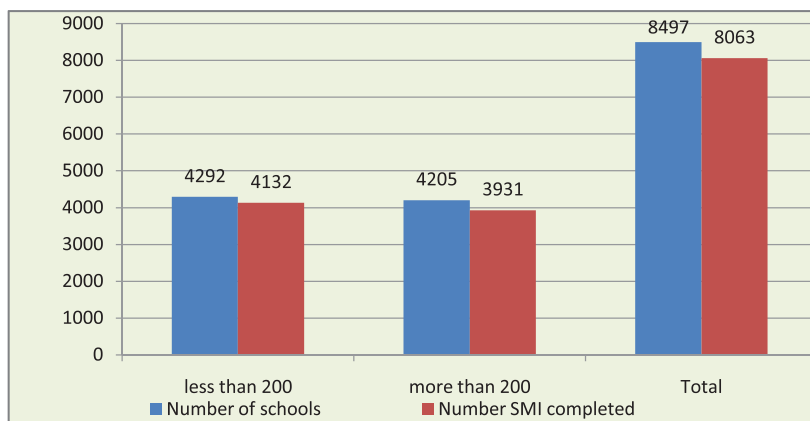


## 8.3 Medical Problems detected at SMIs

School children are identified with a considerable number of health problems during SMIs. Table17 shows the prevalence of health problems detected at SMI.

Approximately 423,651 students (37.7% of all students examined) in the SMIs have had some form of a medical problem as indicated in the table 17 and 192,329 students (17.1% of all students examined) were referred for further care.

## 8.4 Nutrition Month activities

During the month designated to nutrition, BMI level of all students in grade 10 was assessed by PHIs and necessary nutritional interventions were done. Accordingly, a total of 114,000 (85%) grade 10 students were assessed for their BMI. Prevalence of low BMI among male and female students was 33.5% and 24.2% respectively. Prevalence of overweight among male students was 2.5% while that for females was 3.4%.

*Figure 49 : Percentages of school children in different Grades who are stunted and wasted 2011*
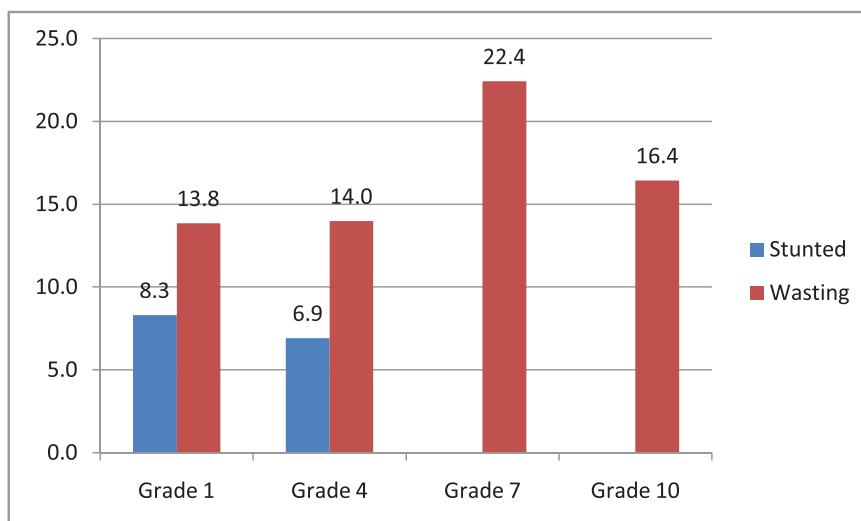
*Table 17: Prevalence of health problems detected at SMIs 2011 (Cases per 1000 students examined)*

| Health Problem | Cases per 1000 | Health Problem | Cases per 1000 |
|---|---|---|---|
| Dental caries | 246.5 | Behavioural Problems | 1.9 |
| Pediculosis | 57.6 | Lung disease | 1.7 |
| Malocclusion | 31.9 | Speech defects | 1.5 |
| Visual defects | 23.3 | Goiter | 1.5 |
| Flourosis | 20.0 | ENT problems | 1.4 |
| Pallor | 18.0 | Hearing defects | 1.1 |
| Skin diseases | 14.1 | Bitot spots | 0.7 |
| Heart disease | 11.6 | Lymphadenopathy | 0.6 |
| Gingivitis | 5.7 | History of fits | 0.6 |
| Glossitis | 4.7 | Orthopaedic problems | 0.4 |
| Asthma | 3.0 | Hypo-pigmented/Anesthetic patches | 0.4 |
| Learning problem | 2.7 | Night blindness | 0.2 |
| Xerophthalmia | 2.4 | Rheumatic disorders | 0.1 |
| Scabies | 2.1 | Otherd efects | 3.3 |
| quint | 2.0 | | |

# 9 Family Planning Programme

History of family planning services covers 60 years, where the introduction of service to Sri Lanka was done in 1953. In 1965 Family Planning was recognized as a responsibility of the Government and service delivery was strengthened by integrating Family Planning to Maternal and Child Health services.

Current goal of the Family Planning programme is to enable all couples to have a desired number of children with optimal spacing whilst preventing unintended pregnancies. Therefore it facilitates the families to make informed decisions on their desired number of children, spacing and timing. The cafeteria approach has been used to offer contraceptive methods.

Needs of community have changed over generations, so have the services the programme offers. Oral Contraceptive Pills (OCP), Depo-provera injections, Intra Uterine Devices (IUD), Condoms and Implants are among the modern temporary methods offered by the present-day programme. Modern permanent methods include vasectomy and female sterilization (LRT). MOHs,MOs, PHNSs, PHMs and PHIs are being trained in providing awareness and counseling for clients on contraceptives supported with appropriate BCC materials.

Figure 50 presents the trend in Contraceptive Prevalence Rate (CPR) in Sri Lanka over last three decades where there was a 30% increase.

**Figure 50: Trend in Contraceptive Prevalence Rate in Sri Lanka**
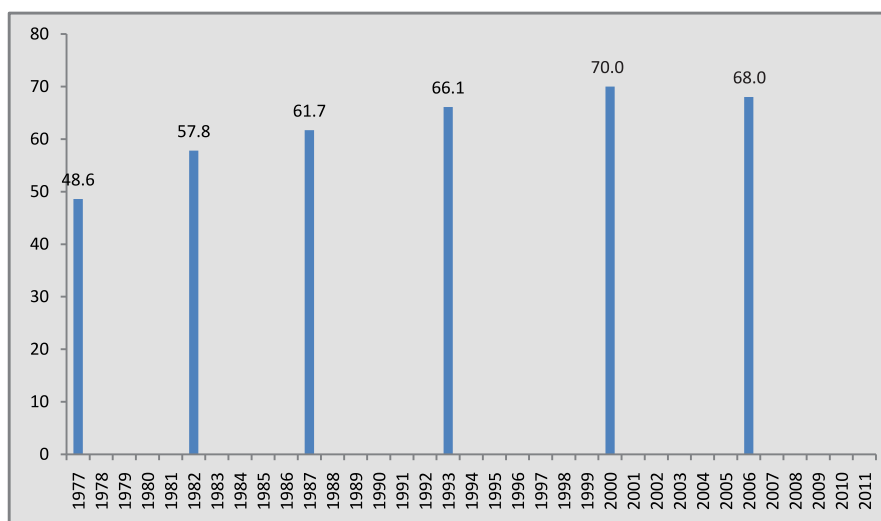


Source: DHS

**Table 18: Percentage of eligible families using a contraceptive method  from 2007 to 2011**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
| --- | --- | --- | --- | --- | --- |
| Modern methods | 51.2 | 52.5 | 53.8 | 54.9 | 56.0 |
| Traditional methods | 8.9 | 9.3 | 9.4 | 9.5 | 9.3 |
| All | 60.1 | 61.8 | 63.2 | 64.4 | 65.3 |

*Figure 51: Method mix of contraceptives in 2011*
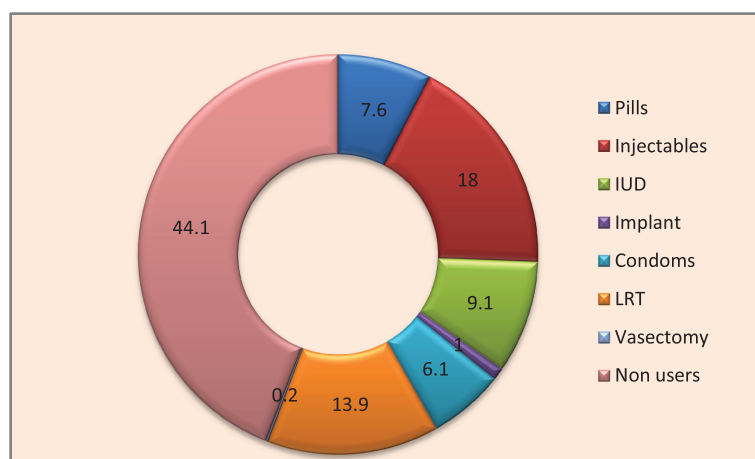


Two main outcome indicators are used to assess the performance of the Family Planning Programme. These are new acceptor rates and current user rate. Two definitions are used in describing the indicators.

Current user is a woman/man (eligible family) who is using any method of contraception at a given point of time. This indicator provides the CPR among eligible families for a given year. Data reported on H 509 is used for calculation of this.

A new acceptor is defined as a woman/man using a particular modern contraceptive method for the first time from any service provider belongs to the national programme. This indicates the change in the contraceptive

method preference despite its limitation of counting the same person more than once with change in the method. Data on all modern methods except condoms are considered for this indicator and H 1200 provides data for this.

## 9.1 Current users: Contraceptive Prevalence Rate among eligible families

Percentage of eligible families using any contraceptive method is expressed as current user rate or CPR among eligible families. Of the eligible families registered for care under PHM (n=3,553,295) 65.3% had been using any method during year 2011. Proportion of modern methods and traditional methods users were 56.0 % and

*Table 19: Current users by different methods form 2007 to 2011*

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Depo-provera | 17.4 | 17.4 | 17.6 | 17.8 | 18.0 |
| Ora lpills | 7.2 | 7.4 | 7.5 | 7.6 | 7.6 |
| IUD | 7.4 | 7.9 | 8.4 | 8.7 | 9.1 |
| Condoms | 4.8 | 5.2 | 5.6 | 5.9 | 6.1 |
| Implants | 0.2 | 0.5 | 0.7 | 0.8 | 1.0 |
| LRT | 13.7 | 13.8 | 13.7 | 13.9 | 13.9 |
| Vasectomy | 0.4 | 0.4 | 0.3 | 0.2 | 0.2 |
| All modern methods | 51.2 | 52.5 | 53.8 | 54.9 | 56.0 |

9.3% respectively. Current contraceptive user rate over past five years as reported by PHMs is given in the Table 18.

Slight increase in contraceptive use has been observed from year 2007 to 2011. Traditional methods account for approximately one sixth of contraceptive prevalence. District differentials of CPR are given in Annexure 9.

*Figure 52: Geographical variations in Contraceptive Prevalence Rate (CPR) (All methods) 2011*
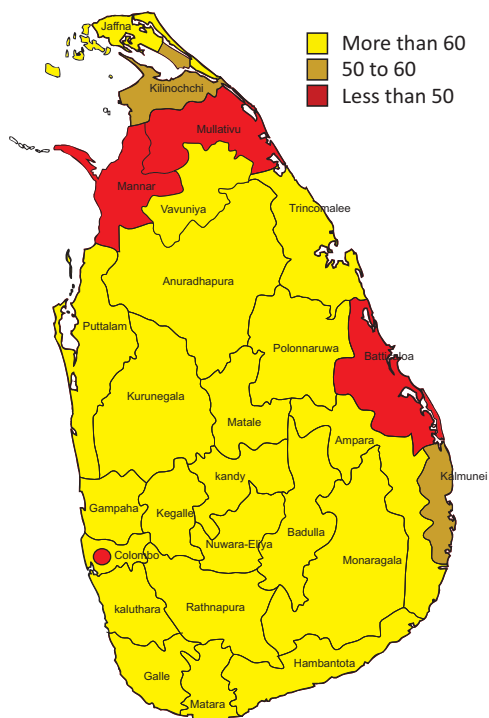


Preference to different methods of contraceptives varied and the variation seems to be consistent. Figure 51 presents method mix of 2011 while Table 19 presents the trends in method preference since 2007 to 2011. The most popular temporary method of contraception in 2011 has been Depo-prorvera injections (18.0%) followed by IUD (9.1%), Pills (7.6%) and condoms (6.1%). Approximately 13.9% of eligible families resorted to Ligation and Resection of Tubes (LRT) for fertility control.

Figure 52 shows the district variation in CPR. The lowest ranking areas (CPR less than 50) are mainly from Northern and Eastern Provinces. Colombo M.C. (44.4%), Mullaitivu (44.8%), Mannar (47.9%), Batticaloa (49.2%) were among the lowest ranking distrcts. Ampara (73.7%) and Badulla (72.0%) districts reported the highest CPR (over 70%) in the country. Current user rate by district is given in the Annexure 9.

## 9.2 New Acceptor Rate

RH-MIS has a special registration system to record the pattern of acceptance of contraceptive methods by couples. During 2011, family planning services throughout the

*Figure 53: Relative proportions of newly accepted contraceptive methods from 1990-2011*
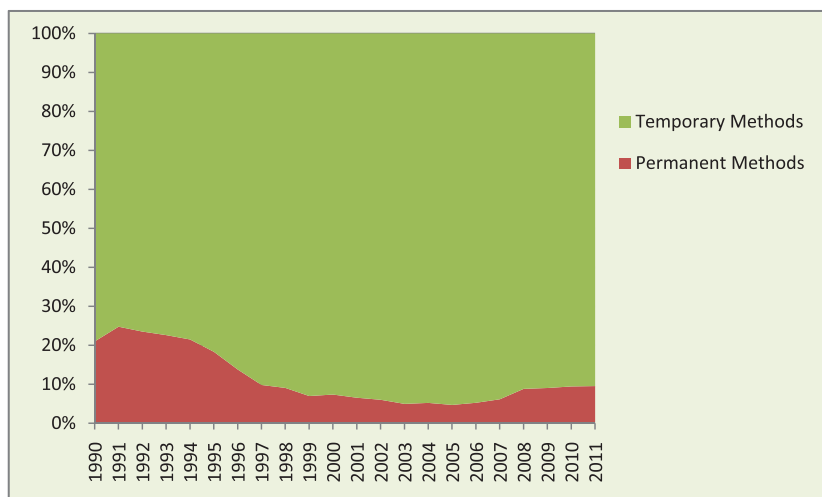
country, had recruited 208,100 couples for various contraception methods.

Figure 53 shows that there is a gradual increase in the proportion of couples choosing modern temporary methods during last 20 years. An opposite trend is seen in the choice of permanent methods of contraception. 90.5 % of the clients accepted temporary methods as a new method from the programme during 2011.

## 9.2.1 New Acceptors by method

The change in new acceptors as a percentage of eligible couples over the time is given in the Figures 53 and 54.

The injectable was the most widely accepted contraceptive method for the first time from the programme while IUD and pills following that with close approximation to each other.

*Figure 54: New acceptors of family planning by method 1981 –2011*
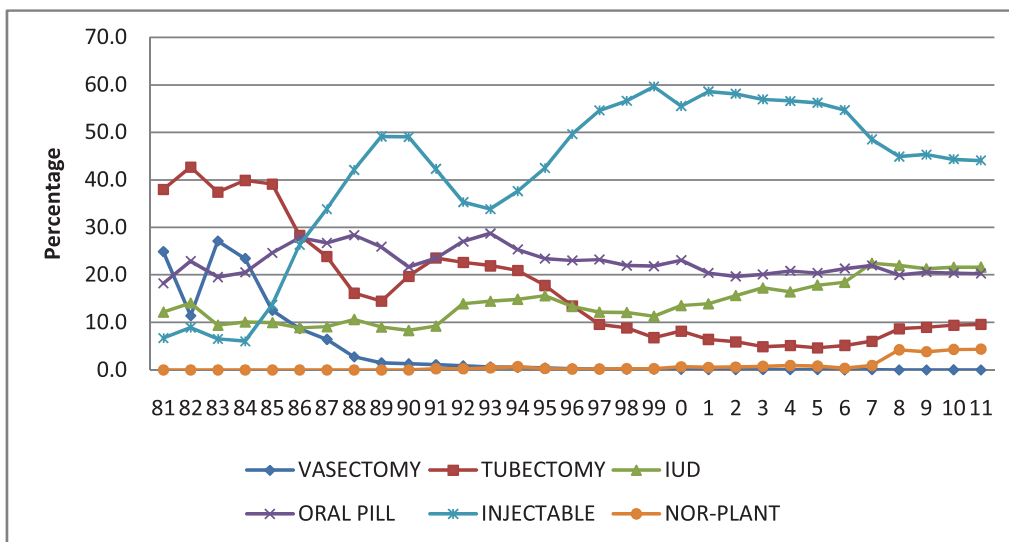


*Figure 55: Age specific new acceptor rates for modern contraceptives: from 2001 to 2011*
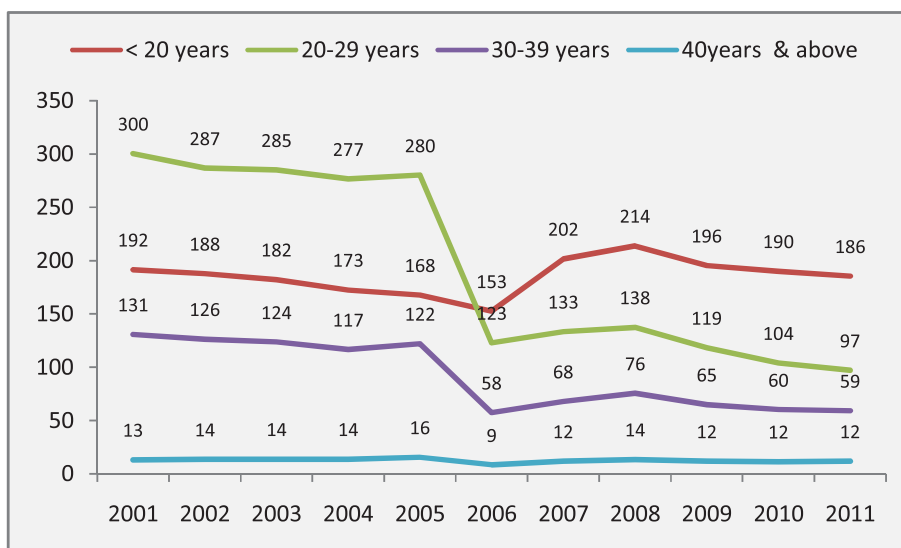
### 9.2.2 New Acceptors by Age

Figure 55 presents the age specific new acceptor rates from 2001 to 2011. There has been a notable reduction in contraceptive acceptance in 20-29 year and 30-39 year age groups after 2005. The contraceptive acceptance of teenage women has shown an improvement from 2006 to 2009. However, they have come down to 2001 rates in 2011. The overall new acceptor rate for modern contraceptives across all age groups shows a reduction towards the latter part of the decade.

### 9.3 Contraceptive failure rate and complications

Contraceptive method failures are supposed to be reported through RH-MIS. Failure rates for different methods are given in the Table 20. A total of 1170 method failures were reported and the highest failure rate was among IUD users which was 13 per 10,000 users.

### 9.4 Unmet need for Family Planning

Unmet need for family planning means the presence of sexually active couple who are not expecting a child in next 2 years and yet not practicing any family planning method. PHMs are gathering this information from their eligible families. Figure 56 presents the trends in unmet need for family planning from 2007 to 2011.

Unmet need for family planning among eligible couples over last 5 years has varied from 9.2 % to 7.5%. In a context where unmet need for family planning is recognized as an attributing factor of maternal mortality, this stagnation in the unmet need becomes a priority policy concern. District variation in unmet need for family planning is given in the Figure 57 and Annexure 9. The Unmet need is usually high in districts where CPR is low.

### 9.5 Services for subfertile couples

Provision of services for sub fertile couples is an important competent of the Family Planning programme which is not yet been established well. However, field staff should identify sub fertile couples among the families registered with her for care under Eligible Family Register. Staff is suppoased to direct the couples identified for treatment. Further the couples with risk factors also need to be identified and direct them for early interventions.

*Table 20: Contraceptive failure rates for different methods 2011*

| Contraceptive Methods | No of failures | Failure rate per 10,000 users |
|---|---|---|
| Depo-provera | 384 | 6 |
| Ora lpills | 228 | 8 |
| IUD | 430 | 13 |
| Condoms | 64 | 3 |
| Implants | 2 | 1 |
| LRT | 61 | 1 |
| Vasectomy | 1 | 1 |

*Figure 56: Percentage of eligible couples having unmet need for family planning 2011*
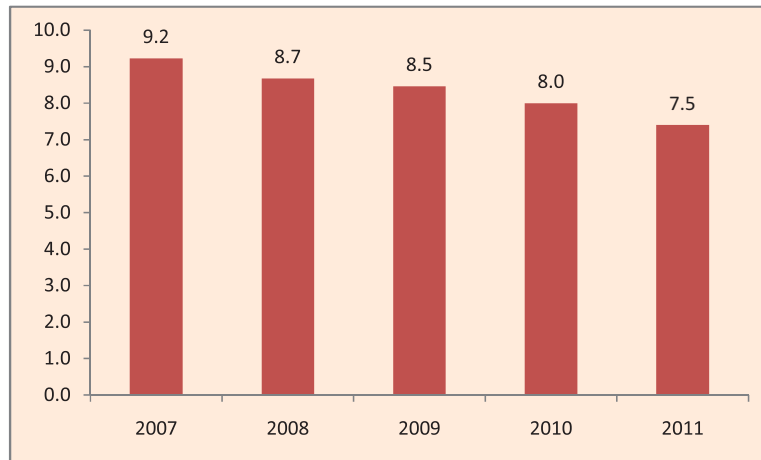


*Figure 57: The district variations in unmet need for family planning 2011*
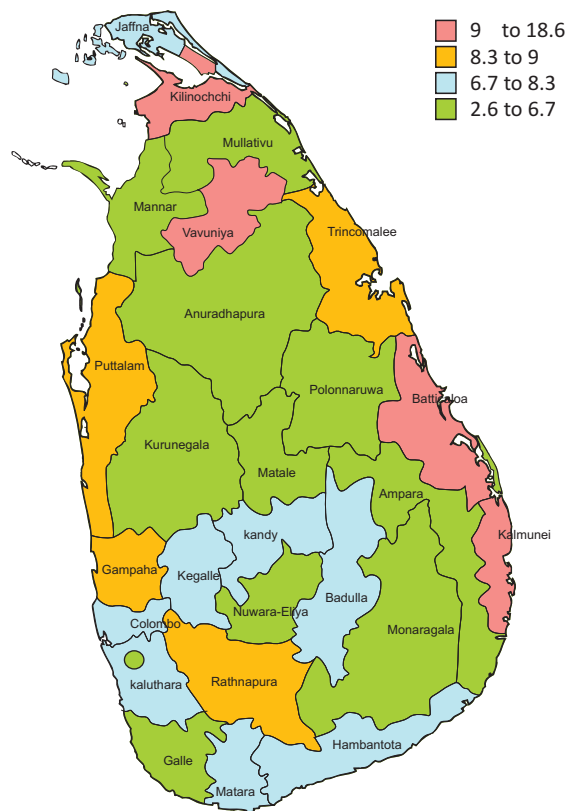
# 10 **Well Woman Clinic Services**

Well Woman Clinic (WWC) services were incorporated into the Family Health Programme in 1996. The aim was to screen perimenopausal women for reproductive illnesses. These included breast and cervical malignancies and non-communicable diseases; diabetes, hypertension. Obtaining cervical smears for cytology (PAP test), breast examination, testing urine for sugar and blood pressure measuring are being done for this. At its inception, women over 35 years were considered as the principal target group of WWCs. In 2007 focus of pap smear taking was changed to women at 35 years of age considering the epidemiological evidence of cervical cancer occurrence. Since that year, the PHMs are specifically supposed to recruit the women in 35-year age cohort in their area for WWC screening. However, the screening was not restricted to this cohort.

WWCs are held fortnightly or once a month. Trained Medical Officers screen the women

attended the clinic for the above conditions. The identified problems are referred to appropriate centres in the health system. The follow up is carried out by area PHM.

## 10.1 Number of WWCs

Number of WWC has increased by 298 over 2007 to 2011 period. In 2011, there were 909 WWCs functioning throughout the MOH divisions of the country. Of them only 752 (82.7%) WWCs were equipped with pap smear facilities. Figure 58 shows the increasing trend in number of WWCs since 2007 to 2011.

## 10.2 Target population coverage

Though, the focus of target population of cervical cancer screening changed to 35 year age cohort in 2007, still women in wider age group obtain this service from WWC clinics. Table 21 and Figure 59 present the numbers

**Figure 58: Number of WWC from 2007 to 2011**
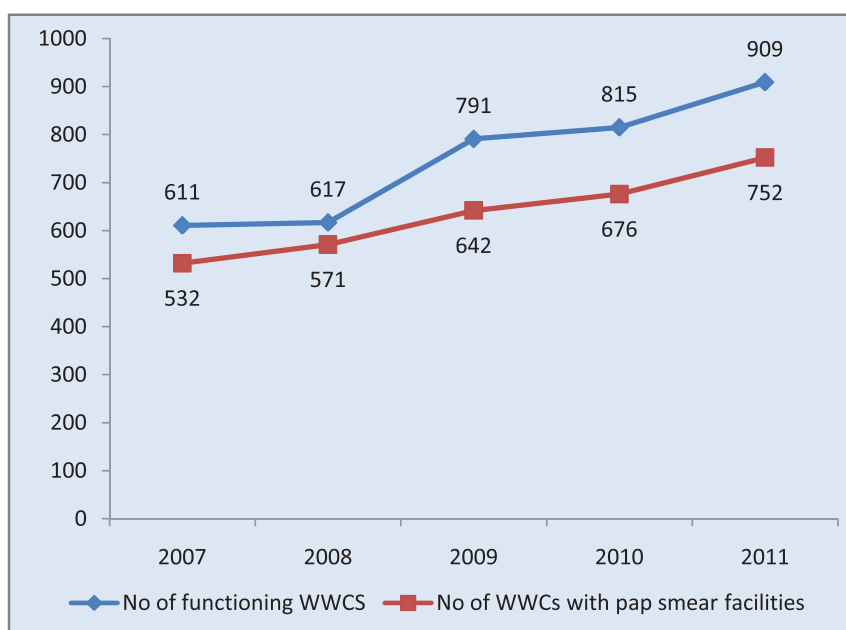
**Table 21: Number of women attending WWCs since 2007 to 2011 by age groups**

| Indicator | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|
| Under 35 Years | 20320 | 21818 | 18517 | 18281 | 14402 |
| 35 Years | 18669 | 17948 | 22490 | 26762 | 55413 |
| 35 Years + | 65665 | 72023 | 75127 | 68319 | 70841 |
| TOTAL | 104654 | 111789 | 116134 | 113362 | 140656 |

**Figure 59: Percentages of women attending WWCs in different age groups from 2007 to 2011**
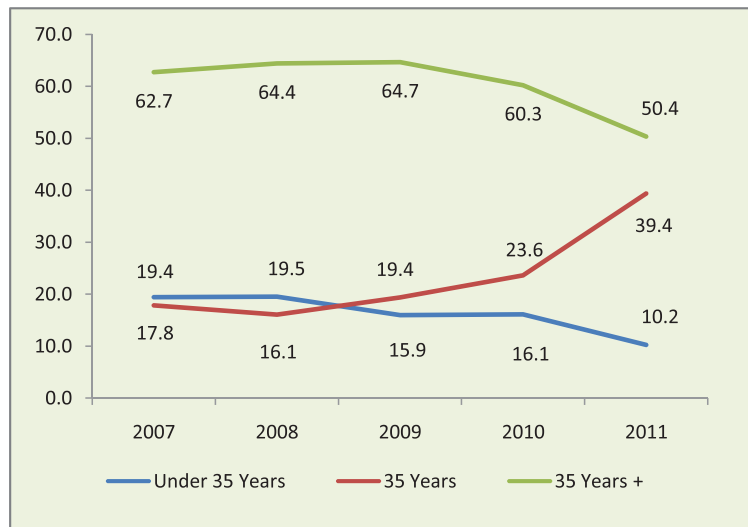


and percentages of women participating WWCs by age groups for the first time respectively.

The strategic move that was taken to change the target population of WWCs principally towards the 35-year age cohort seems to have not taken its full momentum yet. Still the majority of women (50.4%) attending WWCs are more than 35 years of age. Only 39.4% of women attending belong to 35 year age cohort.

According to its new focus, the percentage of

**Figure 60: Percentage of 35 year age cohort screened with Pap smear in WWCs since 2007**
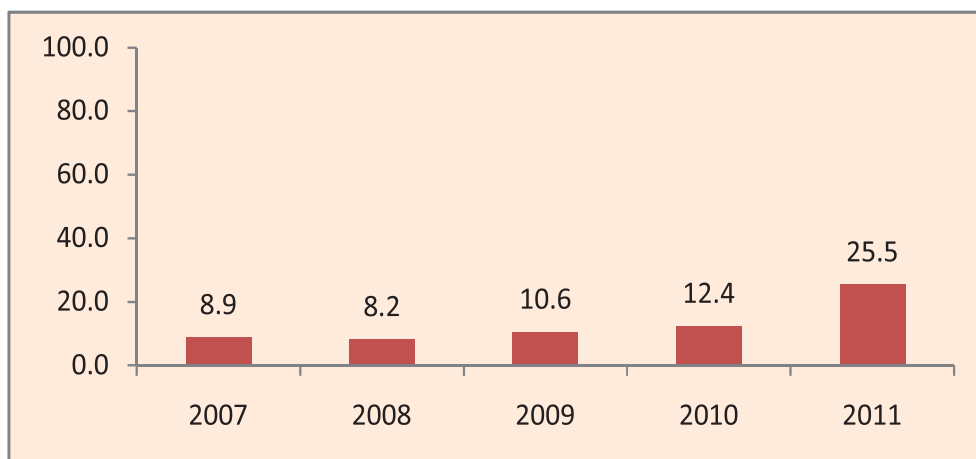
## Figure 61: Percentage of 35 year age cohort subjecting to pap smear testing
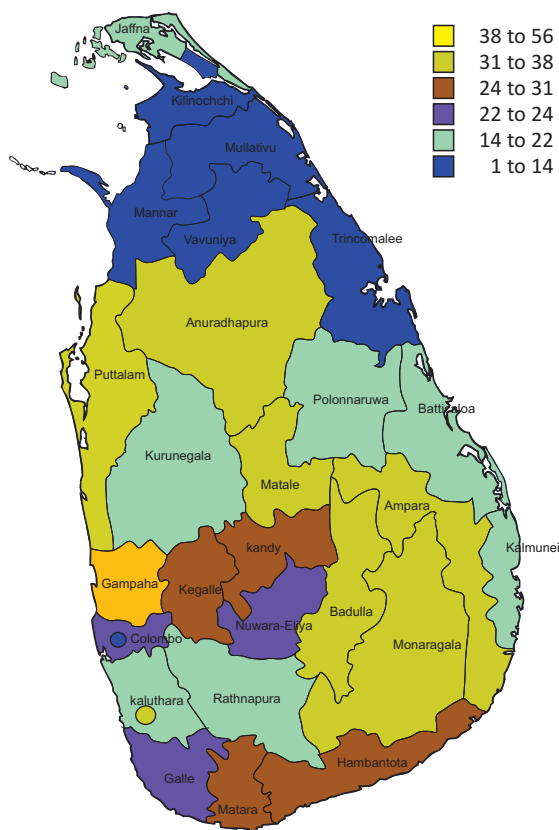


women in 35 year age cohort who were screened in WWCs for cervical malignancy with Pap smear becomes one of the main indicators of the WWC program coverage.

Figure 50 presents the percentage coverage of 35 year age cohort with Pap smear in WWCs since 2007 to 2011.

One percent of the population is considered as the target. A gradual increase is seen from 2007 to 2011 in the percentage coverage of screening 35 year age cohort for cervical malignancy in WWCs. Only 25.5% of the national 35 year age cohort was subjected to screening in WWCs in 2011. This coverage ranged from 1.4% in Colombo MC to 55.2% in Ampara district. (Figure 51) However, the screening coverage in 09 out of 25 districts were less than one fifth of their target age group (Annexure 8).

### 10.3 WWC Services

A group of 152,082 women attended WWCs around the country in 2011. Of them 140,656 were first visits. Figure 62 shows the percentages of women who are subjected to different types of examinations when they attended WWCs.

More than 90 % of women attending WWCs were screened for Hypertension, Diabetes and breast problems. Only 83.4% women had

## Figure 62: Percentage of women screened for different non communicable diseases at WWC
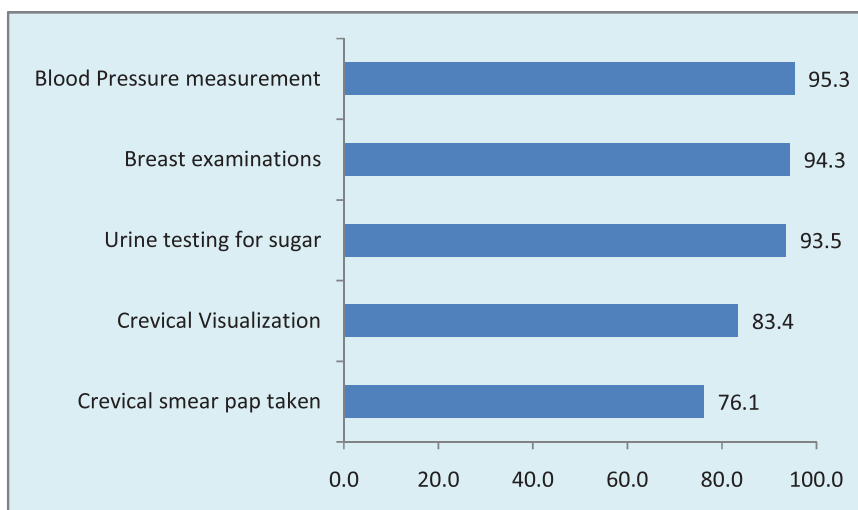
## *Figure 63: Percentage of women with positive screening*
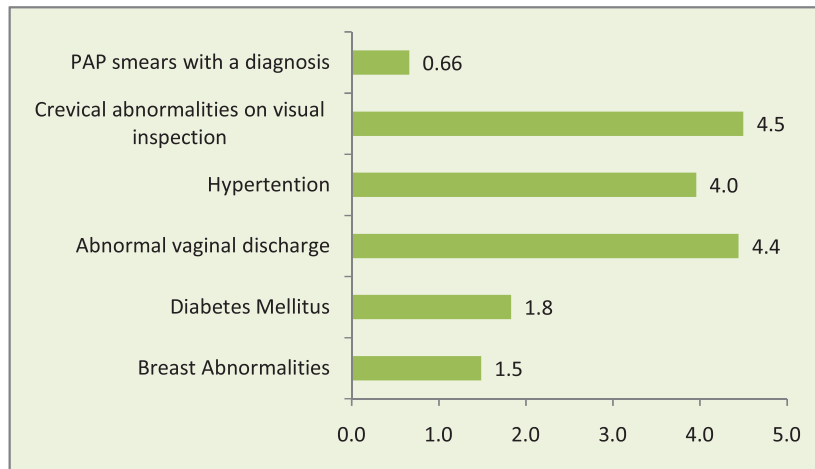


their cervices examined visually and 76.1% had Pap smears taken. Hypertension was found among 4.0 % of women while 1.8 % of them were Diabetics.

In 2011, 129,111 pap smears were taken in WWCs throughout the country. However, only 88,206 reports were received during the year. This indicates a delay in examination and reporting of pap smears. Of them 3.7% (n=3237) were identified as unsatisfactory smears while 0.66% had a diagnosis (LSIL(n=277), HSIL (n=66), Glandular(n=31), ASCUS (131), Malignancies (N=57)). Of the satisfactorily taken smears 6.6% has inflammatory changers and 0.4% was HPV positive.

# 11 Oral Health

Since 2007, an Oral Health component was integrated into the Family Health Programme and the services are delivered through Maternal and Child Health and School Health Programmes. Advocacy for policy formulation, provision of technical expertise and national level monitoring and evaluation also comes under Oral Health Services.

An outline of the activities carried out by the unit in the year 2011 is as follows;

years in schools with less than 200 students. SDCs are mainly situated in primary schools and it provides services for the base school as well as for other satellite schools in the vicinity. Out-reach Clinics are conducted by the SDTs to cover schools in remote areas.

School Dental Therapists work under the administrative supervision of MOH. But their technical supervision and coordination of the service within the districts are carried out by

*Figure 64: Percentage coverage of target population by SDTs 2011*
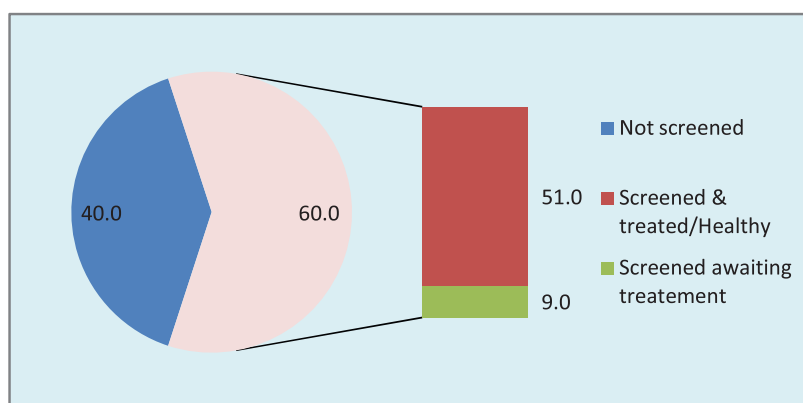


## 11.1 School Dental Services (SDS)

The main objective of the School Dental Services is to reduce morbidity due to common oral diseases in preschool and school children between the ages of 3-13 years by provision of oral health care services with emphasis on prevention.

The services are delivered by the School Dental Therapists (SDTs) who work in School Dental Clinics (SDCs). At present around 407 School Dental Therapists (SDTs) are in service. Their target group includes students of grades 1, 4 and 7 in schools with more than 200 students and all students below the age of 13

the Regional Dental Surgeons (RDSs) and the Supervising School Dental Therapists (SSDTs).

### 11.1.1 Work performances of the School Dental Services – 2011

The 407 SDTs in the country could screen 60% of the total children in the target group. Of the target group, 51% of children were identified as either healthy or their dental problems were successfully treated by SDTs. Therefore the unmet need in terms of screening and those awaiting treatment after screening is around 49% of the target group (Figure 64). Percentage of target children screened in each district is given in Figure 65.

**Figure 65: Percentage of students screened by School Dental Therapists 2011**



Legend:
- 84 to 88
- 73 to 84
- 58 to 73
- 45 to 58
- 12 to 45
- 8 to 12
- DNA
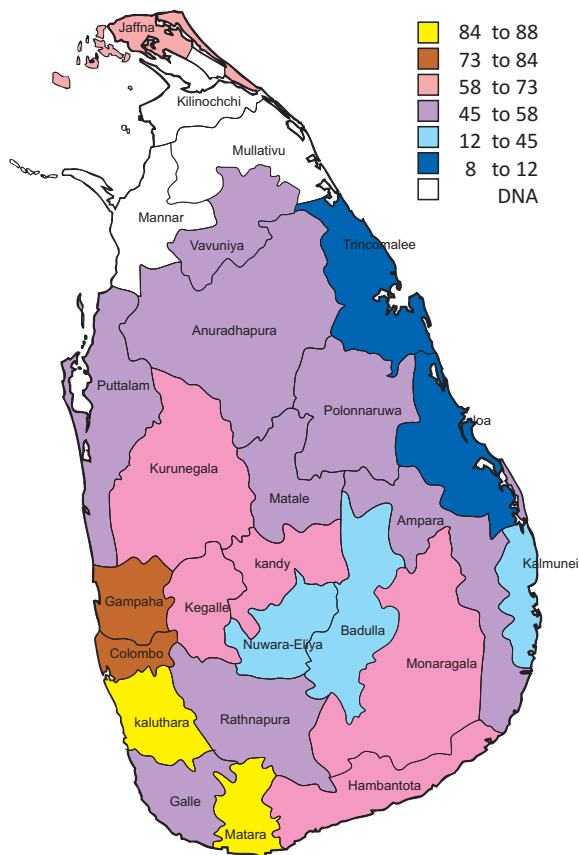
Shortage and mal-distribution of SDTs, transportation problems for conduction of outreach clinics, inconsistencies in workload of SDTs and problems in classification of oral diseases by the SDTs are some of the main challenges faced by the School Dental Services.

To overcome some of these challenges, revision of the existing MIS was done with the introduction of new clinic setting-up guidelines for better monitoring of SDS. It is also planned to introduce a disease based monitoring system with national targets to strengthen the SDS in the future.

**11.2 Provision of Oral health Care services to Antenatal Mothers**

This programme was introduced by Family Health Bureau in the year 2009. The objective of the programme is to improve the oral health of mothers and young children by providing comprehensive care during the prenatal and antenatal periods, in order to reduce;

● Complications of dental diseases during pregnancy

● The risk of transmission of 'harmful' bacteria to the newborn (to minimize the risk of Early Childhood Dental Caries)

To achieve the above objectives, it is expected that all antenatal mothers should be receiving: oral health education at ANC, compulsory dental screening and necessary clinical management of existing oral diseases.

**11.2.1 Work performances - Provision of oral health care services to antenatal mothers –2011**

Only 30 % of registered pregnant mothers were screened by Dental Surgeons (DS) during the year 2011. Out of them 17 % were found to have healthy dental hygiene, 60% had dental caries and 40 % had gum diseases. As the 'returns' are send by DSs based on dental clinic attendees, possibility of over estimation of disease prevalence and inability of tracing who received oral health care according to the MOH/PHM area are main challenges for monitoring the programme. Reluctance of the DSs (especially in the central ministry hospitals) inproviding timely returns and inability to get the proportion of mothers receiving oral health care through the private sector are also issues of concern. Including an 'oral health section' in the pregnancy record to elicit the percentage of antenatal mothers who get an oral screening done is proposed to overcome this problem.

# 12 Progress of activities 2011

The progress of activities of different functional units of the Family Health Bureau during 2011 is given below.

## 12.1 Newborn Care

The progress of activities of different functional units of the Family Health Bureau during 2011 is given below.

1. National Strategic plan on Maternal and Newborn Health was formulated.

2. Newborn Standards for Quality Improvement of Neonatal Care Services were developed.

3. Island wide Emergency Obstetric and Neonatal Care needs assessment survey was conducted during 2011. This survey comprised of facility assessment, morbidity estimation and assessment of knowledge of relevant health workers. The final report of EMONC needs assessment survey will be available by December 2012.

4. SAARC Development Fund Project on Maternal and Child Health was initiated to strengthen newborn care services across the country. Equipment distributed to hospitals in 12 districts to improve newborn care and newborn care units in 39 hospitals were upgraded with infrastructure development.

5. Training of Trainers Courses in Essential Newborn Care were conducted for 5 Districts and Trainers for the respective districts as the Consultant Paediatrician/Neonatologist as the team leader were trained.

6. All the Sisters In-charge/ Nursing Officer In-charge of the Labour Rooms in all the Teaching Hospitals, Provincial General Hospitals, District General Hospitals and some Base Hospitals were trained in Labour Room Management.

7. Two Training of Trainers Programmes on Baby Friendly Hospital Initiative were conducted. About 45 Consultant Paediatricians / Neonatologists were trained as trainers in Baby Friendly Hospital Initiative.

## 12.2 Maternal Care

The progress of activities of different functional units of the Family Health Bureau during 2011 is given below.

1. The revised maternal care package was pilot tested two districts namely Kandy and Rathnapura in 2011 and adaptation was completed according to the result of pilot test.

2. Basic investigations during pregnancy (Haemoglobin, urine testing and blood sugar testing) is carried out using the spot tests and strips. The total cost for supplying these facilities is from GoSL funds.

## 12.3 Child Health - Child Nutrition

1.  Close monitoring of Sri Lanka Code for the Promotion, Protection and Support of Breast feeding and Marketing of Designated Products was ensured with regular meetings with Secretary Health.

2.  Breast feeding promotion activities were enhanced and close monitoring of breast feeding code were ensured.

3.  FHB has developed and introduced a special Integrated Nutrition care Package to the PHC system to improve nutritional status of children under 5 years of age.

4.  Capacity building on Infant and Young Child Feeding (IYCF) counseling and Nutrition Rehabilitation Programme (NRP)

5.  Regular Maternal and Child Nutrition Subcommittee meetings

6.  Monitoring of BMS Code, BMS code revision, publication of BMS Code summary as an advertisement in the three languages in newspapers, awareness workshops on BMS Code

7.  Development of de-worming guidelines

8.  Nutrition month update and activities

9.  Preliminary work on IYCF strategy development

10. National Reviews on Integrated Nutrition Package and field visits

11. Artwork and printing of Child Health Development record (CHDR ) and revision and artwork of Register for Growth Monitoring

12. Translation of WHO growth standards training manuals in to Tamil and Sinhala

13. Printing of Infant and Young Child Feeding (IYCF) training manuals and flash cards on Growth charts in Sinhala and Tamil

14. Procurement and distribution of Vitamin A mega dose, Multiple micronutrients (MMN), ready to use therapeutic food (RUTF) and anthropometric equipment

## 12.4 Child Health - Child Development and Special Needs

1.  Development of Early Childhood Care and Development standards (ECCD) and designing a training manual on care for Child Development.

2.  A project has been under taken to develop a set of early child care development indicators that were adapted and validated for Sri Lankan context. A pilot project was conducted in Puttlum district to design a community based intervention system on special need care. This pilot project has shown that PHC system can be used to screen for children with special needs and the screening activities would be maximum provided those would be linked with normal development screening and ECCD activities. This has resulted in merging the ECCD and special need units of the FHB to form a one unit so that these activities are harmonized accordingly.

## 12.5 School and Adolescent Health

1. Micronutrient supplementation for the maternal and school health programme is streamlined and the GOSL is providing the total amount of micronutrients for the programmes.

2. A new unit has been established in the FHB on Adolescent health

3. Training conducted for Health and Education officers in Monaragala, Kalutara, Gampaha, Hambantota, Jaffna, Anuradhapura, Colombo, Matara, Kilinochchi, Kandy, Kegalle, Mannar, Jaffna districts on Life skill development and Adolescent Health.

4. Provincial Reviews and Advocacy meetings on School and adolescent health in Southern province, Central province, Western Province & Rathnapura district

5. Preparation and printing of (in Sinhala and Tamil) 3 supplementary reading booklets on Adolescent Mental Health for adolescents, teachers and parents

6. Adaptation and pilot testing of Training manual on "Adolescent Friendly Health Services" for Health staff and WHO adolescents growth standards and printing of "School children reference growth charts" for field health workers.

7. Capacity building of counseling assistants attached to Social Service Ministry on the needs of Adolescents.

8. Printing of "Health Promoting School - Teacher Guide" and "Manual on life skills" for health and education staff

## 12.6 Family Planning

1. Conduct of capacity building of Family planning for PHC staff and special review meetings in North and eastern provinces to increase contraceptive prevalence rate

2. Establishing services for Jadelle insertion in 50 new FP clinics

3. Addressing the emergency situation arisen due to adverse drug reactions following DMPA and obtaining a technical mission from UNFPA to recommend proposed actions for procurement and quality assurance.

## 12.7 Women's Health including pre pregnancy care

1. The new package of intervention on pre pregnancy care has been introduced to cater for the needs of newly married couples. Training program conducted to implement the new package.

2. National level Training of Trainers programme to establish a national resource pool on Gender Based Violence.

3. Well woman clinic services strengthened and information package for migrant women and their families were produced.

## 12.8 Oral Health

1. School dental services were streamlined with effective implementation of a Management Information system and monitoring of service delivery.

2. Conduct of Annual reviews of School Dental Service and oral health programme for pregnant mothers.

## 12.9 Planning, Monitoring, Evaluation and Research

1. National Maternal and Child Health policy was approved by the Cabinet of Ministers in January 2011.

2. National Committee on Family Health was established as a Policy making body under the chairmanship of Secretary Health and conduct of regular quarterly meetings.

3. Performance evaluation of Public Health field staff in all districts and rewarding the best performers by the Ho. Minister of Health.

4. District annual MCH reviews were conducted with the participation of FHB officers in order to strengthen the MCH service delivery.

5. Conducted two Bi-annual Review Workshops for Medical Officers of Maternal and Child Health and annual Review Workshops for Regional Supervising Public Health Nursing Officers and Survey Statistical Officers at District level.

6. Conducted annual nutrition review specially focusing the district performances of nutrition related activities.

7. Training of supervisory staff on the use of supervision tools and translation of supervision tools.

## 12.10 Maternal and Child Morbidity and Mortality Surveillance

1. A rapid communication system to save pregnant mothers to facilitate contractibility between hospital and field healthcare workers was introduced and established in 13 districts.

2. A survey on maternal near-misses and newborn health was conducted in 14 health facilities with the objective of introducing Maternal Near-miss Enquiry at national level.

3. The maternal death surveillance activities were expedited and streamlined by addition of quality dimensions. Post-mortems were conducted in 95% of maternal deaths. All reported maternal deaths in all districts were reviewed and lessons learnt were translated into action at different levels.

4. Foeto-infant mortality surveillance mechanism was formulated and feto-infant death reviews were introduced in 12 districts.

**Annexure1: Population, birth rates, eligible families, pregnant mothers, reported numbers of deliveries and first antenatal clinic visits by health districts 2011**

| RDHS/Health Area | Population | Birth Rate | Estimated eligible families | Eligible families registered by PHMs | | Estimated Births | Estimated pregnancies (Birth × 1.1) | Pregnant mothers registered by PHM (out of estimated pregnancies) | | Number of first antenatal clinic visits | Number of reported deliveries | Number of reported live births |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | No. | % | | | | | | | |
| Colombo | 1709319 | 16.8 | 273491 | 271214 | 99.2 | 28717 | 31588 | 28228 | 89.4 | 26309 | 23485 | 23127 |
| Colombo M.C | 686873 | 16.8 | 109900 | 88260 | 80.3 | 11539 | 12693 | 9149 | 72.1 | 8369 | 6454 | 6298 |
| Gampaha | 2347105 | 16.8 | 375537 | 383652 | 102.2 | 39431 | 43375 | 41749 | 96.3 | 40418 | 33577 | 33640 |
| Kalutara | 982141 | 16.8 | 157143 | 162145 | 103.2 | 16500 | 18150 | 16544 | 91.2 | 15767 | 14359 | 14400 |
| N.I.H.S | 309402 | 16.8 | 49504 | 50890 | 102.8 | 5198 | 5718 | 5941 | 99.0 | 5590 | 5007 | 5021 |
| Kandy | 1445718 | 18.5 | 231315 | 235987 | 102.0 | 26746 | 29420 | 26463 | 89.9 | 24895 | 21651 | 21681 |
| Matale | 510412 | 18.5 | 81666 | 89902 | 110.1 | 9443 | 10387 | 10532 | 99.0 | 10095 | 8532 | 8537 |
| NuwaraEliya | 829244 | 18.5 | 132679 | 129182 | 97.4 | 15341 | 16875 | 14676 | 87.0 | 15706 | 11577 | 11551 |
| Galle | 1125724 | 16.8 | 180116 | 179297 | 99.5 | 18912 | 20803 | 19123 | 91.9 | 18215 | 16161 | 16267 |
| Matara | 838743 | 16.8 | 134199 | 135639 | 101.1 | 14091 | 15500 | 15565 | 99.0 | 14600 | 12697 | 12747 |
| Hambantota | 658392 | 16.8 | 105343 | 106824 | 101.4 | 11061 | 12167 | 12706 | 99.0 | 11982 | 9876 | 9963 |
| Jaffna | 575630 | 16.6 | 92101 | 89026 | 96.7 | 9555 | 10511 | 10081 | 95.9 | 9048 | 8252 | 8237 |
| Kilinochchi | 117066 | 16.6 | 18731 | 18405 | 98.3 | 1943 | 2138 | 2574 | 99.0 | 2319 | 1928 | 1925 |
| Mannar | 130189 | 16.6 | 20830 | 16061 | 77.1 | 2161 | 2377 | 2092 | 88.0 | 2019 | 1488 | 1483 |
| Vavuniya | 199606 | 16.6 | 31937 | 27370 | 85.7 | 3313 | 3645 | 3333 | 91.4 | 3277 | 2579 | 2489 |
| Mullaitivu | 93993 | 16.6 | 15039 | 13014 | 86.5 | 1560 | 1716 | 1646 | 95.9 | 1546 | 1145 | 1194 |
| Batticaloa | 544126 | 20.9 | 87060 | 92583 | 106.3 | 11372 | 12509 | 10948 | 87.5 | 10302 | 9427 | 9388 |
| Ampara | 276892 | 20.9 | 44303 | 49737 | 112.3 | 5787 | 6366 | 5306 | 83.4 | 5127 | 4285 | 4305 |
| Kalmunai | 441916 | 20.9 | 70707 | 72157 | 102.1 | 9236 | 10160 | 9485 | 93.4 | 9144 | 8215 | 8203 |
| Trincomalee | 384817 | 20.9 | 61571 | 69705 | 113.2 | 8043 | 8847 | 8681 | 98.1 | 8002 | 7461 | 7455 |
| Kurunegala | 1767605 | 16.9 | 282817 | 294656 | 104.2 | 29873 | 32860 | 31086 | 94.6 | 29543 | 25523 | 25436 |
| Puttalam | 840767 | 16.9 | 134523 | 145561 | 108.2 | 14209 | 15630 | 16329 | 99.0 | 15555 | 13293 | 13358 |
| Anuradhapura | 947795 | 18.6 | 151647 | 174920 | 115.3 | 17629 | 19392 | 19730 | 99.0 | 18742 | 15733 | 15749 |
| Polonnaruwa | 443778 | 18.6 | 71004 | 85756 | 120.8 | 8254 | 9080 | 8812 | 97.1 | 8275 | 7845 | 7131 |
| Badulla | 906603 | 17.6 | 145056 | 147693 | 101.8 | 15956 | 17552 | 15954 | 90.9 | 15000 | 13357 | 13576 |
| Monaragala | 512629 | 17.6 | 82021 | 87261 | 106.4 | 9022 | 9924 | 10017 | 99.0 | 9846 | 8180 | 8238 |
| Ratnapura | 1171288 | 16.1 | 187406 | 190524 | 101.7 | 18858 | 20744 | 20415 | 98.4 | 21865 | 15746 | 15946 |
| Kegalle | 929982 | 16.1 | 148797 | 145874 | 98.0 | 14973 | 16470 | 15037 | 91.3 | 14523 | 12188 | 12171 |
| **Sri Lanka** | **21727755** | **17.4** | **3476441** | **3553295** | **102.2** | **378063** | **415869** | **392202** | **94.3** | **376079** | **320021** | **319516** |

**Annexure 2: Indicators of field antenatal care and percentage of pregnant women protected by rubella vaccine   2011**

| RDHS/Health Area | % Pregnant mothers registered before 8 weeks | % Pregnant mothers registered 8-12 weeks | % Teenage pregnant (less than 20 Yrs) mothers registered | % of Primies registered | % Pregnant mothers P5 and above registered | % Registered pregnant mothers protected for Rubella | % Antenatal mothers having the first home visit | Average antenatal home visits by PHM | Mothers protected with T.T. at delivery | Mothers tested for Grouping Rh at delivery | Mothers tested for VDRL at delivery |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Colombo | 69.4 | 19.8 | 4.3 | 41.9 | 1.9 | 97.1 | 81.4 | 4.2 | 99.5 | 99.5 | 99.5 |
| Colombo M.C | 45.5 | 32.7 | 6.7 | 31.8 | 4.5 | 77.2 | 68.4 | 4.2 | 99.9 | 99.9 | 99.9 |
| Gampaha | 73.6 | 17.2 | 4.3 | 38.9 | 2.2 | 96.8 | 84.0 | 4.7 | 99.8 | 99.9 | 99.8 |
| Kalutara | 73.8 | 19.3 | 5.1 | 36.3 | 2.2 | 99.0 | 91.2 | 5.2 | 99.8 | 99.9 | 99.8 |
| N.I.H.S | 83.4 | 13.7 | 4.3 | 33.1 | 3.4 | 97.6 | 97.2 | 4.8 | 99.9 | 100.0 | 99.9 |
| Kandy | 73.5 | 20.5 | 5.0 | 35.2 | 2.8 | 98.1 | 93.5 | 4.6 | 100.9 | 99.5 | 99.3 |
| Matale | 77.0 | 18.2 | 6.0 | 35.4 | 2.2 | 98.5 | 90.8 | 5.5 | 99.9 | 99.9 | 100.0 |
| NuwaraEliya | 58.3 | 31.0 | 5.9 | 35.6 | 3.1 | 95.6 | 94.3 | 5.9 | 99.6 | 99.5 | 97.4 |
| Galle | 80.4 | 16.0 | 5.3 | 37.1 | 2.6 | 97.3 | 96.2 | 5.0 | 100.1 | 100.1 | 100.1 |
| Matara | 82.8 | 14.6 | 5.5 | 35.6 | 3.0 | 97.7 | 96.9 | 5.8 | 99.8 | 100.2 | 99.7 |
| Hambantota | 84.8 | 13.0 | 6.2 | 35.4 | 2.9 | 97.7 | 106.2 | 5.2 | 100.5 | 100.5 | 100.5 |
| Jaffna | 81.6 | 14.2 | 4.4 | 36.4 | 3.9 | 96.1 | 100.1 | 8.9 | 99.8 | 99.9 | 61.0 |
| Kilinochchi | 50.3 | 36.5 | 10.7 | 29.2 | 7.9 | 87.8 | 99.3 | 7.2 | 100.3 | 100.2 | 10.2 |
| Mannar | 50.4 | 33.7 | 7.0 | 31.9 | 7.8 | 83.6 | 103.2 | 5.8 | 99.9 | 99.6 | 99.6 |
| Vavuniya | 44.8 | 34.3 | 6.5 | 36.8 | 6.2 | 82.1 | 79.3 | 6.0 | 95.9 | 95.8 | 95.5 |
| Mullaitivu | 53.5 | 35.7 | 11.0 | 30.4 | 6.9 | 88.1 | 103.2 | 7.5 | 99.9 | 99.8 | 98.3 |
| Batticaloa | 59.1 | 29.4 | 10.8 | 35.3 | 5.5 | 87.2 | 95.1 | 4.9 | 99.7 | 99.3 | 70.2 |
| Ampara | 77.7 | 18.1 | 7.5 | 38.3 | 2.2 | 99.3 | 93.8 | 4.9 | 99.8 | 99.9 | 99.8 |
| Kalmunai | 68.4 | 24.2 | 8.3 | 33.9 | 6.8 | 83.4 | 96.5 | 6.0 | 100.0 | 100.0 | 100.0 |
| Trincomalee | 58.2 | 31.6 | 11.3 | 34.1 | 7.5 | 83.0 | 90.6 | 4.7 | 99.7 | 99.1 | 99.3 |
| Kurunegala | 78.3 | 18.3 | 5.4 | 36.0 | 2.4 | 99.3 | 95.2 | 5.0 | 99.5 | 99.9 | 99.9 |
| Puttalam | 75.7 | 17.3 | 9.0 | 35.2 | 3.8 | 97.3 | 92.8 | 4.3 | 99.9 | 99.9 | 99.9 |
| Anuradhapura | 73.7 | 19.9 | 7.8 | 34.2 | 2.5 | 97.8 | 95.9 | 5.3 | 99.9 | 99.9 | 99.9 |
| Polonnaruwa | 73.0 | 20.0 | 6.7 | 37.1 | 2.4 | 98.2 | 87.3 | 4.6 | 90.7 | 90.7 | 90.6 |
| Badulla | 73.0 | 21.5 | 7.1 | 35.6 | 2.0 | 97.6 | 92.0 | 5.9 | 98.4 | 98.4 | 98.3 |
| Monaragala | 83.1 | 14.0 | 7.8 | 36.0 | 2.2 | 98.8 | 98.3 | 5.9 | 100.0 | 100.1 | 100.1 |
| Ratnapura | 68.9 | 23.3 | 6.5 | 36.8 | 2.6 | 96.4 | 89.7 | 4.6 | 101.2 | 101.2 | 101.2 |
| Kegalle | 74.3 | 20.9 | 4.7 | 35.5 | 2.8 | 98.5 | 91.5 | 5.5 | 99.8 | 99.8 | 99.7 |
| **Sri Lanka** | **72.6** | **20.3** | **6.1** | **36.3** | **3.0** | **95.9** | **91.7** | **5.2** | **99.6** | **99.6** | **97.0** |

**Annexure3: Indicators of clinic care, ante-natal screening, status of BMI, and anaemia by health districts 2011**

| RDHS/Health Area | % of registered mothers attending clinics at least once | Average number of clinic visits by a mother | VDRL clinics available | % of clinic attendees (ANC) screened for VDRL | % of mothers with reactive VDRL | % of clinic attendees (ANC) anaemic | % of clinic attendees (ANC) tested for blood grouping & Rh | % of mothers BMI measured | % of mothers with BMI less than 18.5 | % of mothers with BMI more than 25 |
|---|---|---|---|---|---|---|---|---|---|---|
| Colombo | 93.2 | 5.6 | 46 | 30.4 | 0.01 | 1.9 | 5.5 | 82.7 | 20.9 | 19.6 |
| Colombo M.C | 91.5 | 5.1 | 13 | 83.9 | 0.16 | 14.1 | 46.9 | 65.8 | 17.3 | 30.1 |
| Gampaha | 96.8 | 5.9 | 42 | 18.6 | 0.01 | 3.4 | 2.5 | 83.2 | 20.6 | 18.8 |
| Kalutara | 95.3 | 7.4 | 57 | 31.0 | 0.03 | 4.0 | 26.6 | 87.7 | 22.6 | 17.0 |
| N.I.H.S | 94.1 | 7.3 | 23 | 70.6 | 0.05 | 2.8 | 25.4 | 88.5 | 20.7 | 20.6 |
| Kandy | 94.1 | 6.3 | 259 | 70.0 | 0.01 | 4.1 | 34.9 | 89.6 | 21.6 | 15.5 |
| Matale | 95.9 | 7.7 | 133 | 61.8 | 0.04 | 7.0 | 31.5 | 94.2 | 25.5 | 15.8 |
| NuwaraEliya | 107.0 | 6.7 | 96 | 45.2 | 0.06 | 4.0 | 20.3 | 62.9 | 26.6 | 10.4 |
| Galle | 95.3 | 7.6 | 19 | 24.0 | 0.02 | 5.0 | 6.5 | 89.4 | 27.4 | 12.3 |
| Matara | 93.8 | 7.7 | 28 | 50.8 | 0.00 | 6.7 | 35.7 | 94.5 | 28.3 | 9.9 |
| Hambantota | 94.3 | 7.8 | 13 | 50.8 | 0.22 | 6.0 | 34.4 | 87.9 | 29.2 | 11.4 |
| Jaffna | 89.8 | 8.0 | 1 | 15.8 | 0.00 | 45.5 | 18.0 | 97.7 | 20.5 | 14.1 |
| Kilinochchi | 90.1 | 6.1 | 0 | 0.5 | 0.00 | 81.3 | 10.7 | 88.3 | 29.0 | 10.6 |
| Mannar | 96.5 | 7.0 | 6 | 63.6 | 0.00 | 48.8 | 59.3 | 87.3 | 20.9 | 17.1 |
| Vavuniya | 98.3 | 9.2 | 10 | 19.0 | 0.00 | 34.9 | 0.0 | 73.2 | 27.1 | 13.6 |
| Mullaitivu | 93.9 | 5.8 | 16 | 64.0 | 0.00 | 81.4 | 35.6 | 88.0 | 25.1 | 13.5 |
| Batticaloa | 94.1 | 6.6 | 60 | 32.1 | 0.00 | 22.8 | 51.0 | 90.0 | 23.2 | 15.7 |
| Ampara | 96.6 | 8.6 | 11 | 12.1 | 0.00 | 12.1 | 23.3 | 92.3 | 30.2 | 12.9 |
| Kalmunai | 96.4 | 7.1 | 41 | 73.6 | 0.02 | 19.0 | 38.4 | 85.5 | 17.5 | 20.9 |
| Trincomalee | 92.2 | 7.6 | 29 | 28.2 | 0.00 | 10.1 | 27.2 | 79.2 | 21.9 | 15.6 |
| Kurunegala | 95.0 | 10.6 | 63 | 72.1 | 0.06 | 8.5 | 31.6 | 93.3 | 25.3 | 13.7 |
| Puttalam | 95.3 | 7.2 | 46 | 91.5 | 0.05 | 3.0 | 34.0 | 86.6 | 22.1 | 19.1 |
| Anuradhapura | 95.0 | 8.2 | 117 | 87.1 | 0.02 | 6.7 | 31.6 | 87.5 | 26.6 | 14.4 |
| Polonnaruwa | 93.9 | 7.2 | 140 | 97.0 | 0.02 | 19.2 | 50.9 | 81.8 | 29.3 | 15.6 |
| Badulla | 94.0 | 7.8 | 8 | 47.3 | 0.03 | 5.0 | 22.2 | 90.2 | 26.5 | 9.7 |
| Monaragala | 98.3 | 7.6 | 8 | 89.3 | 0.20 | 13.6 | 63.7 | 93.9 | 29.3 | 11.6 |
| Ratnapura | 107.1 | 6.0 | 18 | 64.2 | 0.44 | 2.8 | 32.8 | 72.9 | 33.2 | 11.6 |
| Kegalle | 96.6 | 7.6 | 72 | 38.5 | 0.19 | 13.9 | 16.8 | 93.2 | 26.9 | 14.0 |
| **Sri Lanka** | **95.9** | **7.2** | **1375** | **51.2** | **0.07** | **9.1** | **25.9** | **85.9** | **24.6** | **15.2** |

**Annexure 4: Natal care 2011**

| RDHS/Health Area | % of institutional deliveries out of total reported deliveries | % of home deliveries out of total reported deliveries | % LSCS out of total reported deliveries | % of untrained deliveries out of total reported deliveries | % of deliveries reported out of total estimated pregnancies | % of deliveries reported out of total registered pregnancies |
|---|---|---|---|---|---|---|
| Colombo | 100.0 | 0.01 | 35.6 | 0.00 | 74.3 | 83.2 |
| Colombo M.C | 100.0 | 0.00 | 25.9 | 0.00 | 50.8 | 70.5 |
| Gampaha | 100.0 | 0.03 | 33.1 | 0.01 | 77.4 | 80.4 |
| Kalutara | 99.9 | 0.19 | 37.0 | 0.07 | 79.1 | 86.8 |
| N.I.H.S | 99.9 | 0.06 | 40.3 | 0.00 | 87.6 | 84.3 |
| Kandy | 99.9 | 0.14 | 34.9 | 0.09 | 73.6 | 81.8 |
| Matale | 99.9 | 0.12 | 28.3 | 0.12 | 82.1 | 81.0 |
| NuwaraEliya | 99.4 | 0.62 | 20.7 | 0.35 | 68.6 | 78.9 |
| Galle | 100.0 | 0.03 | 30.3 | 0.01 | 77.7 | 84.5 |
| Matara | 100.0 | 0.02 | 26.1 | 0.01 | 81.9 | 81.6 |
| Hambantota | 100.0 | 0.03 | 25.8 | 0.03 | 81.2 | 77.7 |
| Jaffna | 99.8 | 0.23 | 26.3 | 0.17 | 78.5 | 81.9 |
| Kilinochchi | 99.8 | 0.16 | 13.5 | 0.10 | 90.2 | 74.9 |
| Mannar | 99.6 | 0.40 | 19.7 | 0.40 | 62.6 | 71.1 |
| Vavuniya | 99.1 | 0.93 | 22.0 | 0.89 | 70.8 | 77.4 |
| Mullaitivu | 99.5 | 0.52 | 13.5 | 0.44 | 66.7 | 69.6 |
| Batticaloa | 99.2 | 0.78 | 20.3 | 0.51 | 75.4 | 86.1 |
| Ampara | 99.7 | 0.30 | 22.5 | 0.23 | 67.3 | 80.8 |
| Kalmunai | 99.8 | 0.17 | 26.7 | 0.16 | 80.9 | 86.6 |
| Trincomalee | 99.6 | 0.39 | 20.0 | 0.34 | 84.3 | 85.9 |
| Kurunegala | 99.9 | 0.07 | 27.5 | 0.05 | 77.7 | 82.1 |
| Puttalam | 99.9 | 0.14 | 31.1 | 0.14 | 85.0 | 81.4 |
| Anuradhapura | 99.9 | 0.08 | 20.8 | 0.04 | 81.1 | 79.7 |
| Polonnaruwa | 100.0 | 0.03 | 23.9 | 0.03 | 86.4 | 89.0 |
| Badulla | 99.8 | 0.24 | 21.3 | 0.14 | 76.1 | 83.7 |
| Monaragala | 99.8 | 0.22 | 23.8 | 0.21 | 82.4 | 81.7 |
| Ratnapura | 99.9 | 0.12 | 27.9 | 0.10 | 75.9 | 77.1 |
| Kegalle | 99.8 | 0.17 | 39.3 | 0.10 | 74.0 | 81.1 |
| **Sri Lanka** | **99.9** | **0.15** | **28.7** | **0.11** | **76.9** | **81.6** |

**Annexure 5: Indicators of post natal care: post natal visits, Vitamin A supplementation, post natal complications by districts 2011**

| RDHS/Health Area | % of mothers receiving the 1st post natal visit within the 1st 10 days out of reported deliveries | % of mothers receiving the 1st post natal visit within the 1st 10 days out of estimated deliveries* | Average number of post natal visits within first 10 days | Average number of postnatal visits to the mother within 42 days | % of mothers receiving Vitamin A mega dose for reported deliveries | % of estimated mothers who received Vitamin A | % of reported deliveries with post natal morbidities* |
|---|---|---|---|---|---|---|---|
| Colombo | 89.3 | 64.5 | 1.8 | 0.8 | 96.1 | 72.7 | 11.1 |
| Colombo M.C | 61.5 | 30.4 | 1.5 | 0.3 | 89.0 | 57.1 | 5.7 |
| Gampaha | 90.4 | 68.0 | 1.8 | 0.7 | 100.0 | 73.4 | 12.9 |
| Kalutara | 89.8 | 69.0 | 1.8 | 0.8 | 100.0 | 80.4 | 9.9 |
| N.I.H.S | 90.5 | 77.0 | 1.8 | 0.7 | 100.0 | 77.5 | 6.5 |
| Kandy | 92.0 | 63.3 | 1.8 | 0.7 | 98.1 | 73.0 | 9.7 |
| Matale | 96.7 | 74.2 | 1.8 | 0.7 | 99.9 | 73.6 | 7.0 |
| NuwaraEliya | 95.1 | 61.0 | 1.7 | 0.9 | 98.1 | 70.4 | 6.5 |
| Galle | 95.1 | 67.9 | 1.8 | 0.8 | 100.0 | 76.9 | 9.3 |
| Matara | 95.7 | 72.0 | 1.8 | 0.8 | 100.0 | 75.1 | 15.1 |
| Hambantota | 99.0 | 75.9 | 1.8 | 0.9 | 100.0 | 68.5 | 14.5 |
| Jaffna | 97.3 | 72.9 | 1.9 | 0.8 | 100.0 | 74.7 | 15.4 |
| Kilinochchi | 91.1 | 78.4 | 1.8 | 0.8 | 100.0 | 68.1 | 6.1 |
| Mannar | 87.1 | 52.0 | 1.6 | 0.7 | 99.3 | 64.2 | 5.1 |
| Vavuniya | 77.7 | 52.5 | 1.6 | 0.5 | 95.5 | 67.2 | 3.5 |
| Mullaitivu | 87.5 | 55.7 | 1.6 | 0.5 | 97.3 | 61.5 | 1.9 |
| Batticaloa | 90.2 | 63.4 | 1.8 | 0.6 | 96.8 | 75.8 | 5.2 |
| Ampara | 93.0 | 58.4 | 1.8 | 0.6 | 100.0 | 80.1 | 9.8 |
| Kalmunai | 90.8 | 68.5 | 1.8 | 0.8 | 99.2 | 78.1 | 11.8 |
| Trincomalee | 92.0 | 69.3 | 1.9 | 0.7 | 92.7 | 72.5 | 3.0 |
| Kurunegala | 93.7 | 68.3 | 1.8 | 0.8 | 98.6 | 73.6 | 10.2 |
| Puttalam | 91.8 | 73.3 | 1.8 | 0.6 | 100.0 | 74.6 | 7.5 |
| Anuradhapura | 91.7 | 70.9 | 1.8 | 0.7 | 99.8 | 72.3 | 12.9 |
| Polonnaruwa | 76.1 | 62.7 | 1.7 | 0.6 | 91.8 | 74.3 | 11.9 |
| Badulla | 86.9 | 60.3 | 1.8 | 0.7 | 100.0 | 76.3 | 7.1 |
| Monaragala | 95.1 | 71.5 | 1.8 | 0.8 | 100.0 | 86.6 | 13.1 |
| Ratnapura | 94.9 | 68.6 | 1.7 | 0.7 | 100.0 | 73.9 | 11.3 |
| Kegalle | 92.2 | 65.0 | 1.8 | 0.8 | 100.0 | 78.2 | 12.0 |
| **Sri Lanka** | **91.4** | **70.3** | **1.8** | **0.7** | **99.8** | **74.1** | **10.3** |

*Estimated pregnancies approximates estimated deliveries was considered for calculations

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**Annexure 6: Indicators of child care service provision: infant registration, field visits 2011**

| RDHS/Health Area | % of infants registered by PHM out of estimated births | At least one field visit for registered infant after 42 days | Average number of home visits per infant | Average number of weighing per infant | % of estimated infants supplied with vitamin A mega dose at 6 months | % of estimated children supplied with vitamin A mega dose at | |
|---|---|---|---|---|---|---|---|
| | | | | | | 18 m | 3 y |
| Colombo | 87.5 | 71.8 | 5.4 | 10.3 | 59.2 | 61.7 | 62.6 |
| Colombo M.C | 62.2 | 40.5 | 5.7 | 5.1 | 56.0 | 58.4 | 59.0 |
| Gampaha | 90.7 | 76.6 | 5.2 | 10.0 | 66.8 | 75.3 | 79.6 |
| Kalutara | 93.4 | 86.0 | 6.2 | 10.0 | 79.3 | 78.1 | 85.5 |
| N.I.H.S | 104.3 | 56.9 | 7.4 | 9.9 | 91.5 | 88.8 | 99.8 |
| Kandy | 84.6 | 59.2 | 10.1 | 9.7 | 78.9 | 78.7 | 83.8 |
| Matale | 94.5 | 54.9 | 9.7 | 10.4 | 89.1 | 91.3 | 94.8 |
| NuwaraEliya | 79.7 | 71.0 | 7.2 | 10.2 | 77.3 | 77.3 | 79.1 |
| Galle | 89.3 | 72.6 | 7.3 | 10.7 | 80.9 | 80.0 | 88.7 |
| Matara | 93.4 | 82.4 | 8.3 | 10.0 | 80.7 | 83.0 | 90.3 |
| Hambantota | 91.8 | 100.0 | 4.4 | 10.5 | 87.6 | 86.6 | 87.2 |
| Jaffna | 120.8 | 46.0 | 12.0 | 11.2 | 87.4 | 82.4 | 85.9 |
| Kilinochchi | 101.4 | 60.3 | 12.2 | 10.9 | 118.3 | 114.4 | 49.7 |
| Mannar | 87.6 | 20.0 | 24.3 | 9.7 | 83.7 | 82.2 | 80.5 |
| Vavuniya | 77.6 | 29.3 | 9.8 | 7.5 | 89.2 | 90.4 | 83.1 |
| Mullaitivu | 86.1 | 77.4 | 14.1 | 8.7 | 74.9 | 85.9 | 61.3 |
| Batticaloa | 83.5 | 58.8 | 7.0 | 9.8 | 80.1 | 78.8 | 84.8 |
| Ampara | 76.3 | 58.4 | 6.7 | 10.1 | 83.9 | 81.2 | 82.2 |
| Kalmunai | 89.9 | 80.1 | 6.3 | 10.3 | 93.9 | 93.4 | 96.1 |
| Trincomalee | 97.2 | 61.5 | 6.7 | 8.7 | 98.4 | 98.2 | 108.1 |
| Kurunegala | 86.8 | 100.0 | 3.8 | 10.6 | 74.6 | 83.0 | 82.7 |
| Puttalam | 98.7 | 38.2 | 7.8 | 10.5 | 86.7 | 95.9 | 99.2 |
| Anuradhapura | 94.5 | 68.3 | 7.4 | 9.6 | 97.2 | 95.9 | 97.6 |
| Polonnaruwa | 92.8 | 54.0 | 6.3 | 9.5 | 97.3 | 93.7 | 94.4 |
| Badulla | 90.1 | 64.0 | 8.9 | 10.1 | 88.9 | 90.7 | 94.7 |
| Monaragala | 97.1 | 61.8 | 8.4 | 10.4 | 92.9 | 94.2 | 94.5 |
| Ratnapura | 91.5 | 94.2 | 4.7 | 9.6 | 89.5 | 83.5 | 92.4 |
| Kegalle | 86.3 | 73.8 | 8.1 | 9.6 | 83.5 | 86.1 | 91.1 |
| **Sri Lanka** | **89.9** | **72.3** | **6.6** | **10.0** | **80.5** | **82.2** | **85.5** |

**Annexure 7: Nutritional status of infants and children 2011**

| RDHS/Health Area | % LBW | % moderately underweight infants | % severely underweight infants | % moderately underweight young children (2nd year) | % severely underweight young children (2nd year) | % moderately underweight pre schoolers (3rd to 5th year) | % severely underweight pre schoolers (3rd to 5th year) |
|---|---|---|---|---|---|---|---|
| Colombo | 11.5 | 5.6 | 1.1 | 12.6 | 3.9 | 16.1 | 4.3 |
| Colombo M.C | 11.7 | 6.7 | 1.5 | 17.6 | 3.9 | 20.3 | 4.5 |
| Gampaha | 11.3 | 4.1 | 0.5 | 11.2 | 2.3 | 14.4 | 3.0 |
| Kalutara | 12.7 | 4.9 | 0.9 | 13.2 | 3.0 | 18.2 | 4.0 |
| N.I.H.S | 12.9 | 4.7 | 1.0 | 13.4 | 1.2 | 16.5 | 1.8 |
| Kandy | 12.5 | 7.7 | 1.3 | 19.5 | 4.8 | 23.1 | 5.3 |
| Matale | 13.3 | 7.4 | 1.3 | 17.5 | 4.6 | 25.3 | 5.4 |
| NuwaraEliya | 20.6 | 11.2 | 3.3 | 21.7 | 6.4 | 21.9 | 5.2 |
| Galle | 11.6 | 6.3 | 0.9 | 15.3 | 2.7 | 23.4 | 3.4 |
| Matara | 11.0 | 6.0 | 1.0 | 18.6 | 3.2 | 26.1 | 4.3 |
| Hambantota | 9.5 | 5.4 | 0.8 | 15.2 | 3.1 | 25.2 | 4.0 |
| Jaffna | 9.4 | 5.2 | 0.6 | 12.5 | 2.6 | 21.2 | 3.0 |
| Kilinochchi | 10.5 | 4.0 | 0.8 | 26.9 | 5.7 | 27.5 | 6.0 |
| Mannar | 11.5 | 3.2 | 1.2 | 10.9 | 3.4 | 13.3 | 2.6 |
| Vavuniya | 12.3 | 7.4 | 2.0 | 16.4 | 4.1 | 16.9 | 4.3 |
| Mullaitivu | 14.0 | 7.6 | 3.7 | 22.8 | 3.7 | 19.1 | 3.0 |
| Batticaloa | 11.3 | 7.2 | 1.7 | 13.8 | 4.6 | 19.4 | 5.0 |
| Ampara | 13.9 | 8.0 | 1.9 | 18.7 | 4.5 | 27.6 | 5.4 |
| Kalmunai | 10.8 | 6.6 | 1.6 | 16.2 | 4.3 | 22.9 | 5.2 |
| Trincomalee | 12.4 | 6.4 | 1.4 | 16.0 | 4.0 | 19.6 | 4.1 |
| Kurunegala | 11.6 | 5.1 | 0.9 | 15.0 | 3.5 | 20.5 | 4.0 |
| Puttalam | 10.5 | 5.1 | 1.1 | 12.9 | 3.2 | 19.6 | 3.9 |
| Anuradhapura | 12.8 | 7.0 | 1.1 | 19.4 | 3.6 | 28.1 | 4.5 |
| Polonnaruwa | 14.5 | 6.5 | 1.1 | 15.9 | 3.2 | 23.1 | 3.9 |
| Badulla | 16.5 | 8.3 | 1.8 | 19.4 | 4.8 | 27.9 | 5.8 |
| Monaragala | 15.2 | 6.2 | 1.4 | 13.7 | 2.6 | 28.6 | 4.6 |
| Ratnapura | 15.5 | 7.0 | 1.1 | 17.4 | 2.7 | 29.5 | 3.9 |
| Kegalle | 14.1 | 6.9 | 1.1 | 17.4 | 2.5 | 29.3 | 3.4 |
| **Sri Lanka** | **12.6** | **6.3** | **1.2** | **15.9** | **3.6** | **22.6** | **4.2** |

**Annexure 8:   Infant child mortality, SMI coverage and WWC performance   2011**

| RDHS/Health Area | NNMR based on PHM reporting | IMR based on PHMs reporting | Under 5 mortality rate based on PHM reporting | % of MOH areas sending H 797 ( all4Q) | SMI coverage (schools ) | No of functioning Well Women Clinics | No of WWCs with pap smear facilities | % of 35 year women screened for cervical carcinoma |
|---|---|---|---|---|---|---|---|---|
| Colombo | 5.8 | 8.3 | 9.3 | 91.7 | 95.2 | 80 | 80 | 22.8 |
| Colombo MC | 4.0 | 6.0 | 7.8 | 0.0 | 93.5 | 6 | 6 | 1.4 |
| Gampaha | 6.5 | 8.7 | 9.8 | 90.0 | 97.7 | 92 | 92 | 33.1 |
| Kalutara | 8.0 | 10.8 | 11.9 | 50.0 | 97.5 | 38 | 33 | 18.0 |
| N.I.H.S | 10.0 | 13.1 | 13.1 | 100.0 | 89.2 | 16 | 16 | 37.7 |
| Kandy | 6.9 | 9.1 | 11.2 | 100.0 | 92.9 | 100 | 64 | 27.8 |
| Matale | 9.4 | 13.1 | 14.5 | 91.7 | 73.6 | 24 | 24 | 41.1 |
| NuwaraEliya | 10.2 | 14.3 | 15.7 | 82.7 | 100.0 | 27 | 27 | 24.0 |
| Galle | 5.5 | 7.1 | 8.2 | 89.5 | 97.6 | 41 | 40 | 22.8 |
| Matara | 6.1 | 8.2 | 9.3 | 82.4 | 97.2 | 30 | 30 | 30.0 |
| Hambantota | 7.0 | 9.1 | 9.9 | 100.0 | 100.0 | 15 | 14 | 30.1 |
| Jaffna | 12.9 | 17.7 | 19.7 | 81.8 | 18.6 | 75 | 3 | 21.3 |
| Kilinochchi | 8.8 | 11.9 | 14.5 | 100.0 | 80.4 | 7 | 0 | 13.0 |
| Mannar | 6.1 | 10.1 | 14.8 | 80.0 | 50.0 | 0 | 0 | 1.5 |
| Vavuniya | 6.0 | 9.2 | 11.2 | 75.0 | 100.0 | 4 | 4 | 1.8 |
| Mullaitivu | 7.5 | 10.1 | 13.4 | 50.0 | 84.0 | 1 | 0 | 2.0 |
| Batticaloa | 11.2 | 13.8 | 15.8 | 57.1 | 77.9 | 33 | 12 | 14.3 |
| Ampara | 7.7 | 12.1 | 13.7 | 85.7 | 95.0 | 16 | 16 | 55.2 |
| Kalmunei | 10.4 | 14.0 | 15.7 | 92.3 | 90.7 | 24 | 24 | 14.5 |
| Trincomalee | 6.0 | 9.5 | 11.4 | 81.8 | 95.1 | 8 | 5 | 3.1 |
| Kurunegala | 7.7 | 10.2 | 11.3 | 90.2 | 100.0 | 73 | 73 | 21.6 |
| Puttalam | 9.1 | 11.4 | 13.0 | 93.2 | 96.8 | 48 | 48 | 32.6 |
| Anuradhapura | 8.6 | 10.5 | 11.6 | 89.5 | 100.0 | 33 | 32 | 37.6 |
| Polonnaruwa | 6.5 | 11.2 | 13.5 | 85.7 | 95.6 | 21 | 21 | 21.5 |
| Badulla | 6.7 | 9.8 | 10.8 | 93.8 | 99.6 | 22 | 21 | 31.9 |
| Monaragala | 9.3 | 12.1 | 13.4 | 100.0 | 99.4 | 18 | 18 | 31.2 |
| Ratnapura | 6.6 | 8.8 | 10.4 | 100.0 | 97.8 | 31 | 27 | 22.0 |
| Kegalle | 8.1 | 9.9 | 10.8 | 100.0 | 95.2 | 26 | 22 | 31.0 |
| **Sri Lanka** | **7.6** | **10.2** | **11.6** | **87.7** | **94.9** | **909** | **752** | **25.5** |

**Annexure 9: Family planning service performance 2011**

| RDHS/Health Area | Current FP user rate for modern methods | Current FP user rate for all methods | % Unmet need for family planning | Current users of IUD | | Current users of Injectable | |
|---|---|---|---|---|---|---|---|
| | | | | No | % | No | % |
| Colombo | 55.8 | 68.1 | 8.2 | 28256 | 10.4 | 38921 | 14.4 |
| Colombo M.C | 38.5 | 44.4 | 7.5 | 5478 | 6.2 | 10528 | 11.9 |
| Gampaha | 53.1 | 65.8 | 8.7 | 34976 | 9.1 | 54760 | 14.3 |
| Kalutara | 55.9 | 65.5 | 7.7 | 15233 | 9.4 | 26022 | 16.0 |
| N.I.H.S | 52.6 | 66.6 | 5.4 | 3939 | 7.7 | 6788 | 13.3 |
| Kandy | 57.7 | 65.9 | 7.5 | 20733 | 8.8 | 40689 | 17.2 |
| Matale | 58.4 | 65.8 | 5.9 | 10872 | 12.1 | 15903 | 17.7 |
| NuwaraEliya | 65.5 | 69.4 | 6.2 | 8461 | 6.5 | 18771 | 14.5 |
| Galle | 57.9 | 68.4 | 6.6 | 19900 | 11.1 | 31446 | 17.5 |
| Matara | 58.5 | 68.6 | 7.7 | 14208 | 10.5 | 26461 | 19.5 |
| Hambantota | 55.4 | 64.4 | 8.1 | 14597 | 13.7 | 18883 | 17.7 |
| Jaffna | 51.7 | 61.8 | 7.2 | 2489 | 2.8 | 14590 | 16.4 |
| Kilinochchi | 48.4 | 52.0 | 13.9 | 1141 | 6.2 | 3281 | 17.8 |
| Mannar | 37.0 | 47.9 | 5.8 | 229 | 1.4 | 1995 | 12.4 |
| Vavuniya | 48.3 | 61.3 | 12.0 | 563 | 2.1 | 5779 | 21.1 |
| Mullaitivu | 43.7 | 44.8 | 3.4 | 584 | 4.5 | 2358 | 18.1 |
| Batticaloa | 41.2 | 49.2 | 10.1 | 1986 | 2.1 | 20455 | 22.1 |
| Ampara | 68.6 | 73.7 | 5.2 | 5112 | 10.3 | 13623 | 27.4 |
| Kalmunai | 41.6 | 55.1 | 10.3 | 1367 | 1.9 | 13570 | 18.8 |
| Trincomalee | 52.9 | 61.4 | 8.9 | 1629 | 2.3 | 20519 | 29.4 |
| Kurunegala | 57.1 | 67.9 | 6.6 | 34046 | 11.6 | 53923 | 18.3 |
| Puttalam | 54.6 | 63.3 | 8.7 | 12194 | 8.4 | 30094 | 20.7 |
| Anuradhapura | 60.2 | 66.5 | 5.5 | 19583 | 11.2 | 41879 | 23.9 |
| Polonnaruwa | 65.1 | 69.6 | 5.0 | 8424 | 9.8 | 22434 | 26.2 |
| Badulla | 67.3 | 72.0 | 7.4 | 16289 | 11.0 | 27071 | 18.3 |
| Monaragala | 59.0 | 68.3 | 5.4 | 12330 | 14.1 | 16687 | 19.1 |
| Ratnapura | 56.0 | 65.7 | 8.6 | 17586 | 9.2 | 34011 | 17.9 |
| Kegalle | 55.2 | 65.7 | 6.9 | 10666 | 7.3 | 29761 | 20.4 |
| **Sri Lanka** | **56.0** | **65.3** | **7.5** | **322871** | **9.1** | **641202** | **18.0** |

**Annexure 10: Oral health services  2011**

| Health district | Total no. of SDCs | Total no. of SDT | Average number of children per SDT | % Children Screened out of the target group | % Coverage * | % of schools screened | % of children with Caries | % of children with Gum disease - Gingivitis |
|---|---|---|---|---|---|---|---|---|
| Colombo | 48 | 59 | 1907 | 74 | 57 | 90 | 54 | 14 |
| Gampaha | 36 | 35 | 2921 | 83 | 72 | 93 | 56 | 17 |
| Kalutara | 19 | 21 | 2296 | 88 | 79 | 90 | 62 | 11 |
| N.I.H.S | 6 | 7 | 2299 | 90 | 73 | 97 | 59 | 14 |
| Kandy | 32 | 35 | 2296 | 71 | 63 | 65 | 62 | 15 |
| Matale | 11 | 12 | 2685 | 55 | 48 | 52 | 58 | 30 |
| NuwaraEliya | 7 | 7 | 5930 | 32 | 25 | 53 | 73 | 30 |
| Galle | 37 | 34 | 1753 | 53 | 47 | 55 | 61 | 15 |
| Matara | 21 | 24 | 2021 | 87 | 83 | 96 | 53 | 30 |
| Hambantota | 10 | 14 | 2742 | 63 | 55 | 75 | 44 | 12 |
| Jaffna | 10 | 10 | 3608 | 68 | 51 | 75 | 50 | 6 |
| Kilinochchi | 0 | 0 | - | - | - | - | - | - |
| Mannar | 0 | 0 | - | - | - | - | - | - |
| Vavuniya | 3 | 3 | 4741 | 52 | 52 | 11 | 52 | 8 |
| Mullaitivu | 0 | 0 | - | - | - | - | - | - |
| Batticaloa | 2 | 2 | 18053 | 9 | 4 | 10 | 65 | 6 |
| Ampara | 4 | 4 | 3804 | 49 | 31 | 50 | 58 | 8 |
| Kalmunai | 3 | 3 | 9836 | 12 | 6 | 9 | 60 | 1 |
| Trincomalee | 7 | 2 | 11461 | 8 | 2 | 15 | 68 | 27 |
| Kurunegala | 36 | 36 | 2785 | 67 | 63 | 59 | 50 | 13 |
| Puttalam | 11 | 9 | 6019 | 56 | 48 | 68 | 55 | 9 |
| Anuradhapura | 18 | 14 | 4293 | 46 | 34 | 39 | 45 | 16 |
| Polonnaruwa | 15 | 10 | 2331 | 56 | 39 | 53 | 41 | 12 |
| Badulla | 18 | 16 | 3714 | 40 | 29 | 49 | 60 | 10 |
| Monaragala | 15 | 11 | 2910 | 63 | 49 | 89 | 51 | 7 |
| Ratnapura | 21 | 20 | 3475 | 51 | 43 | 48 | 54 | 8 |
| Kegalle | 23 | 19 | 2699 | 68 | 58 | 72 | 61 | 12 |
| **Sri Lanka** | **413** | **407** | **2909** | **60** | **51** | **60** | **55** | **14** |

*% Coverage  = Healthy + treatment completed children out of the target group*