Status of Mortality Statistics of the Country

1. Sri Lanka Profile
Sri Lanka is a small island situated in the Indian Ocean with a land area of approximately 62,705 square kilometers. The country has a parliamentary democratic system of government and the executive authority is exercised a Cabinet of Ministers, presided over by an Executive president.

![Map of Sri Lanka showing geographical features](image)

For the purpose of administration, Sri Lanka is divided into 8 provinces, 25 districts, and 322 divisional secretary areas. The population of Sri Lanka for the year 2003 is estimated to be 19.25 million. The annual population growth rate is recorded as 1.1 for the island. Little over half of the population is concentrated in the Western province.
2. Over View of Mortality Statistics in Sri Lanka

Sri Lanka has generally a good reporting system on Mortality statistics and several reliable sources exist in the country for the purpose.

- Vital Registration System
- Data from Indoor Morbidity and Mortality Return (IMMR) from Government Hospitals
- Information from Maternal Death Investigation
- Special Studies

Vital registration

The definition of vital events includes births, deaths and marriages. In Sri Lanka there is a reliable civil registration system which covers 95% or more of the deaths. The recording of the cause of death information is always compulsory by law. The country has adequate capacity to implement data collection, process data and analyze the data from vital registration.

The civil registration system of Sri Lanka is maintained by the Registrar General's Department, which was established in 1867 as the Office of the Registrar-General for the purpose of registering births and deaths. The registration of births and deaths, which was voluntary at the beginning, was made compulsory under an Ordinance passed in 1885. This Ordinance came into effect in 1897, and was amended several times to improve the registration of births and deaths. It was replaced in 1951 by the Birth and Death Registration Act, which consolidated all legislative provisions relating to the registration of births and deaths. With a number of subsequent amendments, it remains the birth and death registration law of the country.

The Registrar General’s Department collects and disseminates information on vital statistics. The statistical system of Sri Lanka is centralized and the Department of Census and Statistics has the role of coordination and guidance in providing technical staff for all government departments and the ministries.

The Registrar General is vested with the general control and superintendence of the registration of births, deaths and still births in Sri Lanka, and of all persons appointed for, and engaged in, carrying out the provisions of this act. These powers are vested on him by the Birth and Death Registration Act of Government of Ceylon. The acts specify all the action necessary with regard to appointment of staff, creation of registration divisions, reporting, issuing of certificates, late registration, penalties etc. The deaths are registered at local level using the civil registers.
For the purpose of registration of births, deaths and marriages, each administrative district is divided into small units called registration divisions. A birth, death and marriage registration division is a sub division of a Divisional Secretariat. There is a registrar in each of these registration divisions. Every live birth or death that occurs in any part of Sri Lanka is required to be registered within a specified 5 day period. The Ministry of Home affairs is responsible for the final data regarding the death registration in Sri Lanka.

When a death is registered, a certificate is issued to the informant. A duplicate copy, together with death declaration, is sent to the Registrar-General by divisional secretaries. In the statistical branch all the returns are checked for possible entry errors. Initially the abstracts and the returns are compared for consistency. If any inconsistency is found this has to be referred back to the district office. The error free abstracts are used in the manual compilation of population and other vital statistics. The detailed information in the returns are processed using computers.

These documents are stored in the Central Record Room of the Registrar General department in volumes bound in chronological order of the date of registration and by the registration division.

The death certificates and death declaration documents contain a set of common information.
- Date and place of death.
- Demographic Information- Name, Sex, Age, Profession, Names of parents
- Cause of death.
- Informant's name and address and the date of registration.

The registrars of births and deaths forward a monthly "death return" to the Statistics Unit of the Registrar-General's Department. This information is processed to yield the annual estimates of vital statistics.

Although birth and death registration is compulsory by law, some events are missed and do not get registered for various reasons.

Earlier the stillbirths were registered in areas where there is a Medical Registrar that were called “proclaimed areas”. But now the clause “proclaimed areas” is removed and still births are being reported from all areas using the scanned “Declaration of Death certificate” issued by the hospital. This was made possible due to high percentage of hospital deliveries. In respect to the compilation of vital statistics, there is a well
organized system for the flow of necessary information from registration officers to the statistical branch where compilation of vital statistics is taking place.

Although there is a well organized system for the registration and compilation of events of deaths, there is no assurance that all the events are registered. The demographic, medical and health information which are to be stated in the respective certificates are not accurate and sometimes missing.

The information on the death registration is published by the registrar General annually and is disaggregated by age, sex and geographical area (District). The latest available report is information of the year 2003. There are problems in finalizing and publishing the 2004 data due to large number of deaths that occurred in December 2004 due to tsunami disaster.

The vital registration system covers all parts of the country and therefore the question of consistency of data points and representativeness of the results does not arise. There is no sample registration system in the country. Information from vital registration on mortality rates and cause of death are used in national and sub national analyses.

**Crude Death Rate**

The crude death rate of Sri Lanka was generally high in 1900 to 1945 period fluctuating between 36.5 in 1935 and 18.5 in 1942. This was followed by a drastic fall of death rates in the immediate post-war period. Between 1946 and 1949, the crude death rate (CDR) fell from 19.8 to 12.4, mainly due to the eradication of Malaria, extension of Health services in the rural areas, and improved nutrition. The mortality continued to decline during the last few decades, although the pace of decline has lowered. The provisional CDR for 2003 is 5.9 per 1000 population.
Crude Death Rate

Fig 2: Crude Death Rate in Sri Lanka for 1945 to 2003 period (Source: Registrar General)

It is stated in the birth and death registration act that all deaths has to be registered within 5 days of occurrence of the event.
Figure 3: Crude Death rates in Sri Lanka by district 2005
Who registers & reports.
Under the Birth and Death Registration Act, when a death is registered in the civil registration system, a registrar records its particulars on a Register of Deaths (Form B2). Such registration requires a "Certificate of Cause of Death Form B12", is issued by a medical-practitioner. Registration also requires a ‘declaration of the death’. The person required to make such declaration, and the administrative forms used for doing so depends on the place where the death has taken place.

In a hospital, the medical officer in-charge declares the death on Form B33. Outside a hospital, the Grama Niladhari reports it on Form B24. The superintendent of the estate functions as the registrar of Births and Deaths for his estate and is responsible for registering births and deaths occurring in his area.

In the case of a sudden death, an Inquirer into Sudden Deaths holds an inquiry, and issues an Inquirer's Certificate of Death (Form B18). When the cause of death is not clear or if an unnatural cause is suspected, an inquest is held, and if necessary, an autopsy is performed. The findings are reported on the Post Mortem Report (Health 42).

The deaths are registered by the registrars of births and deaths who are appointed under the Birth Death registration act. In Sri Lanka, Non-Medical registrars (80%) mainly perform registration of deaths. The cause of death given by the Non-Medical Registrars may not be as accurate as desired. This is evident by the large number of deaths attributed to symptoms and signs and ill-defined conditions.

Hospital Statistics - Indoor Morbidity and Mortality Return
It is estimated that 30-40 per cent of registered deaths occur in government hospitals. This proportion is higher for deaths related to puerperal causes, heart diseases, respiratory diseases, etc.

In Sri Lanka, mortality data is also available for patients treated in government hospitals as indoor patients prior to their death. The indoor Morbidity and Mortality Return (IMMR) is collected quarterly from all government hospitals with in-patient facilities.

Indoor Morbidity and Mortality Register
A printed register along with an index is provided by the medical statistics unit to all institutions to facilitate easy reporting. This register can be used by small hospitals for many years. The pages of the register are serially numbered and ruled.

The IMMR used since 1996 is based on the 10th revision of the International Classification of Diseases (ICD-10). The ICD code number as given in the IMMR is
written on the top of each page. A death is circled or written in red for easy counting and all deaths occurring within 48 hours admission to the hospital should be marked with an asterisk.

**The Indoor Morbidity and Mortality Return**
The final diagnosis written by the physician treating the deceased is analyzed in order to compile this return and therefore it provides a quarterly summary of the Indoor Morbidity and Mortality registers. All government hospitals with in patient care submit this return to the respective Deputy Provincial Directors of Health Services.

IMMR is prepared by Medical Record officers and/or Medical Record Assistants. Absence of developed Medical Record Departments and trained Medical Record Officers contribute to the poor quality of the mortality statistics recorded in the IMMR. In 2003 22.3% deaths reported from the government hospitals had not been analyzed. This lapse is mainly due to reasons such as incomplete patient records, shortage of statistical staff, lack of supervision at all levels, lack of facilities, patient records retained in wards for a long period and not sent in time to be analyzed, etc. It is also attributed to poor commitment and data not being used for the management of the hospitals by those involved.
Table 1: Leading Causes of Hospital Deaths, 2003  
(Excluding Kilinochchi District)

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>ICD Code (10th Revision)</th>
<th>Causes of Death</th>
<th>Number of Deaths</th>
<th>Proportionate Mortality</th>
<th>Rate Per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I20-I25</td>
<td>Ischaemic heart disease</td>
<td>3,619</td>
<td>12.5</td>
<td>18.8</td>
</tr>
<tr>
<td>2</td>
<td>K20-K92</td>
<td>Diseases of the gastrointestinal tract</td>
<td>3,120</td>
<td>10.8</td>
<td>16.2</td>
</tr>
<tr>
<td>3</td>
<td>I26-I51</td>
<td>Pulmonary heart disease and diseases of the pulmonary circulation</td>
<td>2,629</td>
<td>9.1</td>
<td>13.7</td>
</tr>
<tr>
<td>4</td>
<td>I60-I69</td>
<td>Cerebrovascular disease</td>
<td>2,616</td>
<td>9.1</td>
<td>13.6</td>
</tr>
<tr>
<td>5</td>
<td>J20-J22, J40-J98</td>
<td>Diseases of the respiratory system, excluding diseases of the upper respiratory tract, pneumonia and influenza</td>
<td>1,997</td>
<td>6.9</td>
<td>10.4</td>
</tr>
<tr>
<td>6</td>
<td>T60</td>
<td>Toxic effects of pesticides</td>
<td>1,310</td>
<td>4.5</td>
<td>6.8</td>
</tr>
<tr>
<td>7</td>
<td>R00-R99</td>
<td>Symptoms, signs and abnormal clinical and laboratory findings</td>
<td>1,287</td>
<td>4.5</td>
<td>6.7</td>
</tr>
<tr>
<td>8</td>
<td>C00-D48</td>
<td>Neoplasms¹</td>
<td>1,282</td>
<td>4.4</td>
<td>6.7</td>
</tr>
<tr>
<td>9</td>
<td>J12-J18</td>
<td>Pneumonia</td>
<td>1,278</td>
<td>4.4</td>
<td>6.6</td>
</tr>
<tr>
<td>10</td>
<td>A29-A49</td>
<td>Zoonotic and other bacterial diseases</td>
<td>1,245</td>
<td>4.3</td>
<td>6.5</td>
</tr>
<tr>
<td>11</td>
<td>S00-T19</td>
<td>Traumatic injuries</td>
<td>1,212</td>
<td>4.2</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>A00-T98, Z54, Z00-Z13, Z35, Z40-Z54</td>
<td>All causes²</td>
<td>28,838</td>
<td>100.0</td>
<td>149.8</td>
</tr>
</tbody>
</table>

¹ Includes deaths reported (not classified by type of neoplasm) from Cancer Institute, Maharagama
² Analysed deaths only  
Source: AHB 2003
Registers Maintained by the department of Police with regards to deaths reported to them

1. Sudden Death Register
2. Missing persons register
3. Fatal Accidents
4. Grave Crime register

Acts for statutory death registration in Sri Lanka
1. The legal provision for statutory death registration in Sri Lanka is provided by the Births and Deaths Registration act of the Government of Ceylon (Chapter 129 of the Legislative enactments of Sri Lanka – 1956 revision).

The Registrar General is vested with the general control and superintendence of the registration of births, deaths and still births in Sri Lanka and of all persons appointed for, and engaged in carrying out the provisions of this act.

2. Sections 168 to 172 under Code of criminal procedures

Birth and Death Registration Act
According to the act all the deaths occurring has to be informed and registered with the Registrar of births and deaths of the area. It is specified that it has to be done within 5 days of occurrence of the event. However if the death is not registered after 14 days and within 3 months of the event the registrar of the division may any time after 14 days should send a written notice to the person responsible to attend at the office of the registrar of births and deaths and register the death.

If a death is not registered within 3 months of the event the Registrar General, Any District Registrar or Registrar should issue a written notice asking for the responsible person to present at the office of the relevant officer and to give information regarding the deceased.

Code of Criminal Procedure Act (CCP)
If an inquiry into sudden death is made under the Code of Criminal Procedure act, the Inquirer into sudden death who holds the inquiry should send the information required for registration and the date and time of the inquiry to the appropriate registrar.

Missing person
Registration of a missing person depends on the circumstances of the event. In 1989 when there was civil unrest in the country and during the tsunami disaster special acts were passed to facilitate the registering of missing persons as deaths.
In normal circumstances when a person was reported to be missing the relatives has to wait for 7 years to register the missing person as a dead person. In a case of person from a military force reported to be missing if the chief commanding officer satisfies that he is dead, e can be registered as a dead person.

Under all acts provision is also made for any person who becomes aware, that the person whose death has been registered is alive, to take steps for the cancellation of the death certificate. Here again, the law provides a procedure.

**Amendment to the act in tsunami**
In addition to the relief and other urgent measures taken, it became necessary for the Government to initiate and implement a special legal mechanism to deal with the consequences of the tsunami. The existing laws were not adequate to meet the situation and the implementation of the existing laws would have caused more hardships and inconvenience to the victims. Thus, on the June 13, 2005, the Parliament enacted the Tsunami (Special Provisions) Act No. 16 of 2005 to ensure that there is a legal mechanism in place to protect and assist those affected by tsunami and also to safeguard their rights. Thousands of people lost their homes and livelihoods. In Sri Lanka it was estimated that at least 40,000 lost their lives.

Provision is also made in the said Act to enable either the next of kin or any other person to apply for and obtain a certificate of death through the Registrar General. The procedure for such application involves investigations at different levels and a final determination whereby the Registrar General is vested with the power to direct the appropriate Registrar to register the death and issue a death certificate even when a death body is not present.
3 Use of International Classification of Diseases (ICD-10) in the health institutions in classifying the cause of death

It is expected that cause of death of the patient will be given using the International Classification of Disease (ICD). But using ill defined signs and symptoms as the cause of death is common.

Causes of death are classified and grouped according to the current revision of the International Classification of Diseases (ICD – 10) in which regulations and recommendations relevant to the certification of causes of death and preparation of statistics have been published. (Reference: Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death)

The use of the International Form of Certificate of the Medical Cause of Death places upon the certifying medical practitioner the responsibility for indicating the course of events leading to death. He/She is the best person to decide which of several conditions was directly responsible for death and what antecedent conditions if any, gave rise to the direct cause.

Vital registration System
The classification of the cause of death using ICD-10 coding is done by trained coder at the central registrar general office. The coding is done by using the scanned death declaration forms which were scanned and sent from the scanning centers at the District Secretariat offices.

IMMR
Medical Record Officers/Assistants of the medical record office of the government hospitals in Sri Lanka codes the deaths into broad disease groups. But only a proportion of the Medical Record Officers/Assistants has received training on International Classification of Diseases.

The accuracy and reporting according to ICD-10
A study done in 1996 to assess the quality and coverage of death certification has revealed that 15.5% of the doctors have misclassified the underlying cause of death. The use of ill-defined terms (e.g. cardiovascular arrest) was frequent (76.4%) and use of abbreviation leading to misclassification was 26.4% (Fonseka 1996).

In the process of preparing this report a study was done in one Base Hospital (Kuliyapitiya) and in one General Hospital (Polonnaruwa) to describe the use and practice of ICD coding for death certification. Both hospitals have Medical Record
Officers who were trained for the ICD – 10. The training of Medical Record Officers are done by at the National Institute of Health Sciences Kalutara. The training is organized and coordinated by the Health Information Centre of the Management Development and Planning Unit of the Ministry of Health.

In the general hospital the causes of death stated in 50% of the analysed bed head tickets were in consistence with the guidelines and provided sufficient information to code according to ICD – 10. Therefore the MRO at the general hospital were able to code for cause of death according to ICD – 10 the said bed head tickets.

In the base hospital the medical officers have not stated cause of death for nearly all of the bed head tickets. Ill defined terms and presenting signs and symptoms were recorded as the cause of death without adhering to the guidelines given by the Sri Lanka Medical Association on “Medical Certification of Cause of Death”. The main reasons found to have the procedure and process of death. Therefore the coding at the hospital according to ICD -10 was not done at all.

These findings are in consistence with the findings of study done by Fonseka in 1996.
### Table Age and Sex Specific Mortality Rates Per 100,000 Population for Selected Diseases, 1997

<table>
<thead>
<tr>
<th>Disease and ICD (10th Revision)Code</th>
<th>Sex</th>
<th>All ages</th>
<th>Under 1 year</th>
<th>1-4</th>
<th>5-14</th>
<th>15-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65 &amp; over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neoplasms C00-D48</td>
<td>M</td>
<td>38.3</td>
<td>4.0</td>
<td>5.9</td>
<td>4.0</td>
<td>5.3</td>
<td>12.3</td>
<td>104.2</td>
<td>288.8</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>32.3</td>
<td>4.7</td>
<td>5.0</td>
<td>3.2</td>
<td>4.6</td>
<td>14.0</td>
<td>94.3</td>
<td>198.4</td>
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<td>Anaemias D50-D64</td>
<td>M</td>
<td>2.5</td>
<td>3.3</td>
<td>1.6</td>
<td>0.4</td>
<td>0.4</td>
<td>0.9</td>
<td>4.9</td>
<td>20.9</td>
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<td></td>
<td>F</td>
<td>2.7</td>
<td>2.7</td>
<td>1.4</td>
<td>0.4</td>
<td>0.9</td>
<td>1.6</td>
<td>5.7</td>
<td>16.1</td>
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<td>Mental and behavioural disorders F01-F99</td>
<td>M</td>
<td>8.9</td>
<td>0.7</td>
<td>0.4</td>
<td>0.3</td>
<td>0.9</td>
<td>9.2</td>
<td>25.4</td>
<td>34.5</td>
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<tr>
<td></td>
<td>F</td>
<td>2.1</td>
<td>0.7</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.9</td>
<td>4.5</td>
<td>17.9</td>
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<td>Hypertensive diseases I10-I14</td>
<td>M</td>
<td>16.6</td>
<td>1.3</td>
<td>0.0</td>
<td>0.1</td>
<td>0.6</td>
<td>2.7</td>
<td>40.6</td>
<td>167.7</td>
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<td></td>
<td>F</td>
<td>12.1</td>
<td>0.7</td>
<td>0.0</td>
<td>0.1</td>
<td>0.3</td>
<td>1.9</td>
<td>22.0</td>
<td>142.5</td>
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<td>Ischaemic heart diseases I20-I25</td>
<td>M</td>
<td>63.4</td>
<td>11.9</td>
<td>1.3</td>
<td>0.7</td>
<td>2.6</td>
<td>23.1</td>
<td>174.0</td>
<td>509.9</td>
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<tr>
<td></td>
<td>F</td>
<td>25.8</td>
<td>11.3</td>
<td>1.4</td>
<td>0.8</td>
<td>1.4</td>
<td>4.9</td>
<td>49.6</td>
<td>283.1</td>
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<td>Diseases of the respiratory system J00-J98</td>
<td>M</td>
<td>49.4</td>
<td>123.0</td>
<td>13.6</td>
<td>3.9</td>
<td>5.5</td>
<td>15.9</td>
<td>106.0</td>
<td>417.5</td>
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<tr>
<td></td>
<td>F</td>
<td>28.8</td>
<td>97.5</td>
<td>12.8</td>
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<td>5.5</td>
<td>9.9</td>
<td>48.6</td>
<td>250.8</td>
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<td>Diseases of the digestive system K00-K92</td>
<td>M</td>
<td>37.7</td>
<td>22.5</td>
<td>3.7</td>
<td>1.4</td>
<td>2.2</td>
<td>38.3</td>
<td>116.3</td>
<td>121.0</td>
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<td></td>
<td>F</td>
<td>6.5</td>
<td>12.7</td>
<td>3.5</td>
<td>2.1</td>
<td>1.0</td>
<td>3.2</td>
<td>14.5</td>
<td>38.6</td>
</tr>
<tr>
<td>Transport accidents V01-V99</td>
<td>M</td>
<td>15.5</td>
<td>3.3</td>
<td>2.2</td>
<td>3.7</td>
<td>12.3</td>
<td>19.8</td>
<td>25.8</td>
<td>39.4</td>
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<tr>
<td></td>
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<td>2.0</td>
<td>1.5</td>
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<td>2.7</td>
<td>2.9</td>
<td>7.1</td>
<td>15.0</td>
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<td>Category</td>
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<td>2.6</td>
<td>0.9</td>
<td>0.2</td>
<td>0.7</td>
<td>2.0</td>
<td>2.9</td>
<td>3.7</td>
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<td>----------------------------------------------</td>
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<td>------</td>
</tr>
<tr>
<td>Accidental poisoning by and exposure to</td>
<td>F</td>
<td>0.5</td>
<td>1.3</td>
<td>1.1</td>
<td>0.0</td>
<td>0.3</td>
<td>0.7</td>
<td>0.7</td>
<td>0.4</td>
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<td>noxious substances X40-X49</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Intentional self-harm X60-X84</td>
<td>M</td>
<td>48.0</td>
<td>0.0</td>
<td>0.0</td>
<td>1.9</td>
<td>54.5</td>
<td>71.1</td>
<td>70.3</td>
<td>92.6</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>15.9</td>
<td>0.0</td>
<td>0.0</td>
<td>2.6</td>
<td>35.5</td>
<td>19.1</td>
<td>10.9</td>
<td>20.0</td>
</tr>
<tr>
<td>Deaths from all causes</td>
<td>M</td>
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<td>2,082.9</td>
<td>112.7</td>
<td>53.7</td>
<td>285.3</td>
<td>432.2</td>
<td>1,342.0</td>
<td>6,130.9</td>
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<td></td>
<td>F</td>
<td>453.1</td>
<td>1,713.2</td>
<td>118.5</td>
<td>45.5</td>
<td>107.2</td>
<td>126.6</td>
<td>555.7</td>
<td>4,702.6</td>
</tr>
</tbody>
</table>

Based on Registrar General's Mortality statistics. 

*Source: Medical Statistics Unit*
4. **Unnatural deaths**

Any death which is not due to a natural death can be classified under “Unnatural Death”.

1. Suicide
2. Accidents – Animal, Road Traffic, Machinery etc
3. Death from a unknown cause
4. Violence/ Homicide
5. Death while in custody – Police, Prison, Mental or Leprosy hospital
6. Death due to negligence

“Every person aware of an unnatural death shall, in the absence of reasonable excuse, carry the burden of proof and, which shall lie upon the person so aware, forthwith shall give information to the nearest Magistrate's Court or to the Officer in-charge of the nearest police station or to a peace officer or to the Grama Seva Niladhari of the nearest village, of such commission or intention or of such sudden, un-natural or violent death or death under suspicious circumstance or of the finding of such dead body”. (Section 21 of CPC)

According to the Criminal Procedure Code (CPC) Act No. 15 of 1979, an inquest of death has to be conducted by an Inquirer into Sudden Deaths (ISD) or the Magistrate, on receiving information that a person has died under unnatural circumstances.

Therefore, any medical practitioner or dentist, in his/her professional capacity comes to be aware of such deaths need to comply with this requirement and takes appropriate action to inform the police, enabling them to arrange an inquest.

Pathological (non-judicial) post-mortem examination is not conducted in such deaths. It is stated in the same act that if the cause of death is not known or in sudden deaths, an inquest has to be held and therefore a pathological (non-judicial) post-mortem examination should not be conducted to find out the cause of death. Medical Practitioners should NOT issue a declaration form in respect of such deaths since it has to be done by the ISD or Magistrate after the inquest.

The inquest is held by Inquirer in to Sudden Death (ISD) and if the cause is certain he may give the cause of death after the inquest. If the cause of death is not certain, he will request for a post mortem. The post mortem is conducted by Judicial Medical officer, Forensic Pathologist or by a Government Medical Officer. If a death that had occurred in an private hospital is ordered for a post mortem examination the body has to be brought
to the nearest government hospital/JMO’s office for the post mortem. The law does not allow conduction of post mortem examinations in private hospitals.

**Recording and reporting of cause of death**

Once a cause of death is determined a declaration of death will be done and the death will be registered in the office of the birth and death. If the cause death cannot be determined by either inquest or by post mortem cause of death could be given as “open verdict”. It is expected that if the cause of death is determined later, the cause of death could be recorded in place of “open verdict”. But in actual practice this replacement of cause of death does not occur in real practice.

**Registers maintained by Police Department to record unnatural deaths**

- Register of Sudden deaths
- Register of missing persons
- Fatal Accidents Register
- Grave Crime Register (GCR)

**Legal Provision**

The legal provision for defining a death as due to unnatural death, ordering an inquest and for requesting an post mortem is provided under the sections 168-172 of the Criminal Procedure Code (CPC) Act No. 15 of 1979.

**Responsible authorities**

The Police, Inquirer onto Sudden Death, Magistrate, Judicial Medical Officer (JMO) or any person who is conducting the post Mortem are all responsible for giving a correct cause of death and registering the death at the office of the Birth and death registrar.

**Problems**

Although the Inquirer onto Sudden Death is a powerful and responsible position which is critical for correct recording of Cause of death there is no standard way in appointing them, training them and monitoring their functions. Most of the time it is a political appointment given to a supporter of the local politician and there is no guarantee on the quality of the work and the chances of foul play cannot be excluded in some cases.

This is a serious drawback in the system and method has to be developed for recruitment of people with adequate educational background, train them in all relevant areas and once appointed they should be subjected to monitoring of the their activities.
5. Completeness of death registration (registered deaths, estimated deaths)

Although there is a legal enactment requiring that all the deaths has to be registered within five days of the death and there is a well organized settings for the registration and compilation of vital events, there is no assurance that all events are registered. The demographic, medical and health information which are stated in the respective certificate are not accurate and sometimes not recorded at all.

There have been studies to ascertain the extent of the coverage of registration of births and deaths in 1953, 1967, and 1981 (Post enumeration Survey with population census). It was revealed that the overall completeness of birth registration in Sri Lanka in 1981 was 98.8 per cent. The percentage for urban and rural sectors was 98.6 and 99.2 percent, respectively.

When 1953 and 1967 results are compared, there is an improvement in the level of completeness of birth registration, which increased from 88.1 to 98.7 per cent in the 13-year period. The overall completeness of death registration was 94 percent. Rates for urban, rural and estate sectors were 92.9 per cent, 92.2 per cent and 100.0 per cent respectively. Comparing the 1967 results with 1953 survey shows that there was an improvement in the completeness of death registration from 88.6 to 94.5 per cent. However, there is evidence of late and non-registration during the late 1990s due to unstable conditions in some parts of the country.

Several studies were done after that on death registration have indicated that many deaths are not registered, particularly in rural areas. But since 1981 no comprehensive evaluation is carried out to measure the completeness of death registration except for the study on maternal mortality in 2000.

The main reason which contributes to the incompleteness of registration is the lapse in the law that allows burial or cremation of the dead body in rural areas without registration. Therefore in a case of death of a person who does not have any properties/bank accounts (infants/very young children/very old) the disposal of the dead body occurs according to their religion without obtaining the death certificate. This practice is particularly common when the cremation/burial done in own private properties. The plantation areas are also considered as rural areas and therefore the death certificate is not a must. This does not occur on urban cities, suburban cities and municipal council areas where “Death Certificate” is required for burial or cremation.
Registering deaths of armed personnel
All the deaths of the armed personnel are registered with the vital registration system. If the emergency law is in operation in the country all the deaths of armed personnel are reported to the registrar General’s office in Colombo. It is the responsibility of the chief commanding officer of the relevant troop to inform about the death. In times when the emergency law is not in operation the deaths are reported to Birth and Death registrars of the areas where the death occurs. This reporting is very important for official purposes of the army and for compensation purposes for the family. Therefore this registration is usually complete.

Birth and Death registrars appointed by the Registrar General are functioning in the war affected North and East provinces and deaths are reported and registered in the vital registration system. But the extent and completeness of registration is not assessed and therefore could not comment on the completeness of registration.

Death of terrorists
When a death of a terrorist occurs in a battle it is the usual practice of them to take away the bodies with them. If any dead body is left behind the armed forces will hand over the dead bodies to the “International Peace Keeping Mission” or to the International Federation of Red Cross (ICRC). From them the body is usually handed over to the relatives of the deceased. The death will be registered by the birth and death registrars of the area in the usual manner.

Death of a foreign person in the country
When any foreign citizen dies in the country while he/she is visiting/living in the country that death is also included by the vital registration system.

Death of persons in foreign country
The death of Sri Lankan citizen who is dying abroad has to be registered and included in the national statistics. The representative of the government in the relevant country (Ambassador or High Commissioner) by his official position functions as the birth and death registrar for the relevant country. It is expected that the foreign mission will submit their information on vital statistics to the registrar general. However the submissions of the reports are not complete and timely. The registrar general department has made plan to retrain all responsible persons from the foreign missions to streamline the reporting process.
**Death occurring in overseas**

Sri Lankans either resident or working abroad can register their birth, marriages and deaths occurring outside Sri Lanka. The Division coordinates with the Ministry of Defense, the Department of Immigration and Emigration and the Registrar General in registering births, marriages and deaths.

A diplomatic or consular officer of a Sri Lanka Mission abroad can register births, deaths, and marriages of a citizen of Sri Lanka, which occurs in a foreign country. The Registration of a Birth or Death will be made in Sinhala or if the Applicant so desire in Tamil. English translation of a birth or death registration can be obtained from Missions abroad.

**Registering of death of a armed person dying abroad**

When a person from an armed force dies abroad while in duty in another country his/her death also has to be reported to the registrar general by the chief army officer in command. This reporting is important for both service purposes and the compensation purposes. But incidence of such deaths are very small as Sri Lanka does not usually send the armed personnel for wars in other countries.
6. Maternal Death

A maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy, or its management, but not from accidental and incidental causes.

Figure 4: Maternal Mortality Rates in Sri Lanka by districts 2004

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![Maternal Mortality - 2004](image-url)
Measuring maternal death is complex because of difficulties in recognizing maternal deaths. The tenth revision of the International Classification of Diseases includes both direct obstetric cases and conditions aggravated by pregnancy and delivery under maternal death.

![Maternal Mortality Rate](image)

**Figure 5: Trends in Maternal Mortality rate in Sri Lanka from 1945 to 2003**

The maternal mortality rate (MMR) has been very high in the past, fluctuating between 265 in 1935 and 155 in 1946 per 10,000 live births. A dramatic fall in the MMR in the post world war period is observed. Between 1946 and 1949, MMR shows a general decline.

**Sources of Maternal Mortality Data**
1. Vital registration system
2. Maternal death reviews conducted by Family Health Bureau
3. Maternal Deaths reported by Indoor mortality and morbidity return (IMMR) from the government hospitals of the country
4. Special Studies
**Vital Registration System**

The vital registration system, which registers death by cause and live births on a continuing basis, is the conventional source of information on maternal mortality. But due to misclassification of cause, maternal deaths are under recorded in official statistics. Therefore there is a concern that maternal deaths are under estimated in the statistics of civil registration system.

**Maternal death reviews conducted by Family Health Bureau**

A system of maternal death reviews conducted by the family Health Bureau of the Ministry of Health commenced in 1985 with monitoring system for the immunization of children. It gradually developed into a regular quarterly review of its own. The focus of the review is on individual cases to identify and correct the factors leading to death. Over the years, the number maternal deaths reported to the review system has increasingly exceeded that reported by the civil registration system.

The system requires that every maternal death is informed by telegram to the Director of the Family Health Bureau and the respective health administration of the district (Deputy Provincial Director of Health Services) and to the area Medical Officer of Health. The head of the institution where the death occurred investigate the death to identify the cause of death. The area Medical Officer of health carry out an investigation by visiting the household of the diseased. A report is prepared with the information gathered and it is discussed at the district level maternal mortality review and is reviewed in detail at the annual Maternal Mortality review conducted by the family Health Bureau. The annual review is attended by Health Ministry officials, representatives of the college of Obstetricians and Gynecologist, Provincial and Deputy Provincial Directors of Health, Medical officers in charge of institutions where the maternal death occurred, consultant anaesthetists and others concerned.

**Indoor Morbidity and Mortality Register**

The information of maternal deaths that occur in government hospitals of Sri Lanka is reported through the Indoor Morbidity and Mortality return. Due to the same problem of correctly identifying maternal deaths there is a degree of under reporting in the data received from this source too.

**Any studies, approaches**

1. A Unicef assisted study was conducted in 1996 to review estimates and cause of Maternal Deaths in Sri Lanka.
Steps of the study
1. Screening of all deaths of the women of reproductive age group in the vital registration system
2. Classifying the cause of death into clearly maternal, possible maternal and non maternal deaths
3. Investigation of all clearly maternal and possibly maternal causes of deaths to conform whether maternal and non maternal
4. Review of all maternal deaths reported at the Maternal Health review of the Family Health bureau
5. Review of deaths reported by the DPDHS, Hospital administrators, Judicial Medical Officers etc to identify additional deaths which were not found in the civil registration system or in the maternal death review system

Result
This study therefore found a total of 312 maternal deaths that occurred in Sri Lanka in the year 1996. This was 3.9 times the official number of 80 reported in the vital registration system. The maternal death review of the Family Health Bureau has reported two thirds of the deaths found by this study.

Reasons for under estimation of Maternal Deaths in the civil registration system

Non registration or non inclusion of information in the death returns
Out of the 312 maternal deaths, the death registration documents could be located only for 231 deaths. The remaining 81 deaths may either have not being registered or the registration documents were not forwarded to the central record room.

Non identification as maternal death
Out of the 231 registered maternal deaths, only 79 were identified by the civil registration system. The vital registration system can only from the cause of death recorded on the death registers forwarded for statistical processing. The cause of death is transcribed from death certificates to the death returns. The officers at the vital registration office assign code to the cause of death according to the International Classification of Diseases (ICD-10). These codes are used to identify maternal deaths during the computer processing of data. If the cause of death is not recorded with sufficient detail in the death registration documents the registrar general department is unable to assign the correct code for the cause of death. This results in the death being not identified as a maternal death.

2. A comprehensive study carried out in 2000 primarily to obtain an accurate estimate of maternal deaths, disclosed that the actual number of maternal deaths is 3.9 times the number reported in the Civil Registration System. The report further states that
non-identification of maternal death is due to non-registration, problems associated with reporting of causes of death and coding. Moreover 72 per cent of deaths have occurred due to direct obstetric cause and 23 per cent from indirect causes.

3. A Study done by Dr C. Banduthilake (MD Thesis) – Epidemiology of Maternal Mortality in Sri Lanka identified that there was a 24% under reporting of maternal deaths in the Western province. The study also infers that when the inequalities of distribution of resources throughout the island is considered, the degree of under reporting is likely to be higher in the rest of the country. The study has recommended including additional section to record pregnancy status of females of reproductive age group to improve the quality and completeness of reporting.

% of maternal & infant deaths captured by the routine vital registration system or other special programs

Due to complex nature of measuring maternal death at present maternal deaths are reported to three different institutions by different reporting agents. For 1997 and the figure is 3.5 per 10,000 live births and according to hospital statistics (government institutions only) the corresponding figure is 4.6. It should be stated here that about 90 per cent of registered live births occur in government institutions.

Availability of disaggregated data
Since data on Maternal and Infant mortality are also covered under vital registration system the information are available by sex, age and by geographical location. The information covered by maternal death reviews of the Family Health Bureau is very comprehensive and many details of the patient could be found.

Suggestions to improve the maternal death reporting
1. Ensure complete and accurate recording of cause of death
Ensuring accurate and complete recording of cause of death requires that a well designed regular training programme is instituted for medical registrars, inquirers into sudden deaths, judicial medical officers, and medical officers in obstetric wards. Training must be conducted periodically, to ensure that newly appointed registrars are trained and the others are kept periodically updated.
2. **Review and modify work processes**

Procedures adopted in statistical processing needs improvement. The current work processes must be analysed to identify practices, which result in inaccuracies and delays. The following critical activities must be properly implemented.

- Transcription of cause of death into death returns
- Coding of the cause of death
- Computer processing

3. **Quality control procedures, which include regular training, verification and supervision must be instituted.**

4. **Include pregnancy status on the death certificate and the death returns**

But the steps (1) to (4) above will help to identify only the deaths from direct obstetric causes. Deaths from indirect causes, which do not mention pregnancy or childbirth and those for which a cause is not given will not be identified through these steps.

It will be possible to recognize maternal deaths due to indirect causes, if the pregnancy status is recorded on the death certificate and most importantly on the death return. The death return must show the pregnancy status in the following categories.

1. Pregnant
2. Within six weeks of termination of pregnancy
3. Within six weeks to one year of termination of pregnancy
4. Not pregnant or within a year of termination of pregnancy

This information can be used to improve identification of maternal deaths by ensuring that the cause of death is coded correctly as a maternal cause, using the recorded cause of information.

5. **Making pooled estimates of maternal deaths**

A list of all maternal deaths from the civil registration system should be matched with those reported to the maternal death reviews of the FHB. Additional deaths found through the matching should be added to the total annual count of maternal deaths. This pooling will yield a more complete estimate of maternal deaths.

For 1996, the pooled estimate is 246 (79 identified in the civil registration system and additional 167 found in FHB) which is 300 percent higher than the estimate from the civil registration system alone. The pooled estimates can be included in the vital statistics published by the Registrar General's Department. A regular procedure must be in place to assess why the additional deaths found in FHB records, were missed, and to minimize these reasons.
Infant deaths

Infant death is a death of a child who is under one year of age and the infant mortality rate is expressed as per 1000 live births.

Fig 6: Trends in Neonatal and Infant Mortality in Sri Lanka (Source: Registrar General)

The trend in infant mortality rate (IMR) is similar to the MMR. In 1935, a very high IMR (263) was recorded. A decline in the IMR is observed after 1946. It continued to decline during the past few decades.

According to Demographic and Health Survey Infant Mortality level has dropped during the past decade. It is the highest in the estate sector. It has a close relationship with mothers educational attainment, age of mother, birth order and birth interval.
Figure 7: Infant Mortality in Sri Lanka by District in 2003
Neo-natal Mortality Rate (NNMR) and Peri-natal Mortality Rate

Perinatal mortality is an indicator measuring the mortality at the period of time surrounding birth i.e still birth and deaths in the first week of life. This indicator is not affected by definitional variation or carelessness in recording practices of a still birth. This indicator was not compiled due to the non availability of data on still births for the whole country. Considering the importance of this indicator Peri-natal Mortality rate was estimated for births in government medical institutions.

According to the observation of the D.H.S. 2000 neo-natal deaths are most likely to occur at birth and if not during the first week after birth. In fact early neo-natal deaths account for one third of such deaths.

A decreasing trend is observed in the neo-natal mortality rate (NNMR). The rate recorded for 1996 is 12.9 per 1,000 live births. Anuradhapura district recorded the highest NNMR of 23.6, a higher rate compared to the rate in 1995 (21.7). The districts of Kandy and Matara also recorded high NNMR of 22.1 and 20.6 respectively. It is noteworthy that neo-natal deaths accounted to 74.9 per cent of the infant deaths registeed in 1996.

A study done in 1986 to identify the perinatal death reporting in the Jaffna Municipal council area reported a perinatal death rate of 43.3/1000 live births which is high compared to corresponding national figure.

Child Mortality Rate

The child Mortality rate is the number of deaths of children in the 1-4 age group per 1 000 children in that age group birth. Like all other deaths the under five mortality was also reported using the vital registration system. There is a degree of under reporting due to same lapse in the law that rural areas do not require deaths to be registered for burial or cremation of the body. Since many children do not own properties or have any other legal implications many deaths that occur in the community goes unregistered. As the data were collected by the vital registration system which covers the entire island, the issues of data points and representativeness of the sample does not arise. The data can be disaggregated to sex, geographical distribution and for exact age of the child.

The completeness of under five mortality is assessed by the Demographic and Health Survey (DHS) which is held every 5 years. Up to 2000 the data collection of the Demographic and Health survey is conducted on zonal basis. The island was distributed into zones which are different from administrative divisions which are commonly used in the country. The Demographic and Health survey 2005 which is being conducted at the moment uses the same administrative districts.
A study was conducted in rural district in Sri Lanka (1996) to assess the quality of death registration. It showed that death registration incomplete in 31.8% of death certificates analyzed in the study.
7. Medical Certification of cause of death (Acts/Procedures)

Under Section 31 of the Births & Deaths Registration Act (Cap 129) of Sri Lanka it is the responsibility of the attending doctor to state the cause of death, if known, when a patient he or she is treating dies of a natural cause. In the instance where an inquest has to be held, it is the responsibility of the doctor to inform the next of kin and the law enforcement authorities (usually the police) about the death and need of the inquest. If the doctor decides to issue a “certificate of the medical cause of death”, (not the death declaration form), he or her will do it with utmost care, because a postmortem examination may be inducted to establish the cause of death, which may differ from the cause of death given by the doctor.

The criteria that must be fulfilled to issue a certificate of the medical cause of death,

1. The cause of death is known
2. The cause of death is natural
3. The Doctor being the attending physician of the last illness of the deceased
4. The Doctor has treated the deceased recently
5. The Doctor has viewed the body

The cause of death is a statement consisting of three lines

(a) **Immediate cause of death** – disease or conditions directly leading to death,

(b) **Antecedent cause of death** – morbid conditions if any, giving rise to such disease or condition, stating the underlying condition last,

(c) **Contributory cause of death** – other significant conditions contributing to death but not related to the disease or Conditions directly leading to it.

The doctor who is giving the cause of death need to be aware of the fact that conditions present at the time of death may be completely unrelated, arising independently of each other; they may be causally related to each other, that is, one condition may lead to another which in turn leads to a third condition; and so forth. Death may also result from the combined effect of two or more conditions.

The guidelines given on the reporting cause of death by medical officers by the Sri Lanka Medical Association (SLMA) is described below. This describes the ideal situation but there is no guarantee that the doctors writing the diagnosis are aware of them or that they adhere to the guidelines.
The cause-of-death section of the death certificate consists of two parts. The first part is for reporting the sequence of events leading to death, proceeding backwards from the final disease or condition resulting in death. Other significant conditions which contributed to the death, but did not lead to the underlying cause, are reported in Part II. For statistical and research purposes, it is important that the causes of death and, in particular, the underlying cause of death be reported as specifically and as precisely as possible. For clarity, parenthetical statements and abbreviations is not be used when reporting the cause of death. Every cause-of-death statement is coded and tabulated according to the latest revision of the International Classification of Diseases.

In Part I of the cause-of-death section, the immediate cause of death is reported on line (a). This is the final disease, injury, or complication directly causing the death. The immediate cause of death must always be reported on line (a). It can be the sole entry in the cause-of-death section if that condition is the only condition causing the death. The immediate cause does not mean the mechanism of death or terminal event (for example, cardiac arrest or respiratory arrest) and is not be reported as the immediate cause of death as it is a statement not specifically related to the disease process, and it merely attests to the fact of death. Therefore, the mechanism of death provides no additional information on the cause of death.

Line (b) is to report the disease, injury, or complication, if any, that gave rise to the immediate cause of death reported on line (a). If this in turn resulted from a further condition, it is re-corded on line (c). For as many conditions as are involved, the full sequence is written, one condition per line, with the most recent condition at the top, and the underlying cause of death reported on the lowest line used in Part I. When more than four lines are needed, additional lines may be added (writing “due to” between conditions on the same line is the same as drawing an additional line).

If the immediate cause of death arose as a complication of or from an error or accident in surgery or other medical procedure or treatment, the importance of reporting what condition was being treated, what medical procedure was performed, what the complication or error was, and what the result of the complication or error was stressed in the guidelines.

Statistically, mortality research focuses on the underlying cause of death because public health interventions seek to break the sequence of causally related medical conditions as early as possible. However, all cause information reported on death certificates is important.
If an organ system failure such as congestive heart failure, hepatic failure, renal failure, or respiratory failure is listed as a cause of death, its etiology on the line(s) beneath it needs to always be reported (for example, renal failure due to Type I diabetes mellitus).

When indicating neoplasm as a cause of death, it is also included: if the primary site is known or when the primary site is unknown; whether benign or malignant; the cell type or that the cell type is unknown; the grade of neoplasm; and the part or lobe of organ affected. (For example, a primary well differentiated Squamous cell carcinoma, lung, left upper lobe).

For each fatal injury (for example, stab wound of chest), the trauma (for example, transection of sub-clavian vein), and impairment of function (for example, air embolism) which contributed to death should be reported always.

All other important diseases or conditions which were present at the time of death and which may have contributed to the death, but did not lead to the underlying cause of death listed in Part I or were not reported in the chain of events in Part I, is recorded in Part II of the cause-of-death section (other significant conditions). More than one condition can be reported per line in Part II.

Multiple conditions and sequences of conditions resulting in death are common, particularly among the elderly. When there are two or more possible sequences resulting in death, or if two conditions seem to have added together, the sequence thought to have had the greatest impact is written in Part I. Other conditions or conditions from the other sequence(s) are reported in Part II.

For example, in the case of a diabetic male with chronic ischemic heart disease who dies from pneumonia, his certifying physician must choose the sequence of conditions that had the greatest impact and report this sequence in Part I. One possible sequence that the certifier might report would be “pneumonia” due to (or as a consequence of) “diabetes mellitus” in Part I with chronic ischemic heart disease reported in Part II.

Another possibility would be “pneumonia” (due to or as a consequence of) “chronic ischemic heart disease” entered in Part I with diabetes mellitus reported in Part II. Or the certifier might consider “pneumonia” to be due to (or as a consequence of) “ischemic heart disease that was due to (as a consequence of) “diabetes mellitus” and report this entire sequence in Part I. Since these three different possibilities would be coded very differently, it is important for the certifying physician to decide which sequence most accurately describes the conditions causing death.
An elderly decedent should have a clear and distinct etiological sequence for cause of death, if possible. Terms such as senescence, infirmity, old age, and advanced age have little value for public health or medical research. When a number of conditions resulted in death, the physician should choose the single sequence that, in his or her opinion, best describes the process leading to death, and place any other pertinent conditions in Part II. ‘‘Multiple system failure’’ could be included in Part II, but the systems need to be specified to ensure that the information is captured.

An infant decedent should have a clear and distinct etiological sequence for cause of death, if possible. ‘‘Prematurity’’ is not be entered without explaining the etiology of prematurity. Maternal conditions may have initiated or affected the sequence that resulted in infant death, and such maternal causes needs to be reported in addition to the infant causes on the infant’s death certificate(e.g., hyaline membrane disease due to prematurity, 28 weeks due to placental abruption due to blunt trauma to mother’s abdomen).

If after careful consideration, the physician cannot determine a sequence which led to death, then the death should be reported to the appropriate authority for an inquest where an autopsy can be ordered to explore the cause of death.

**Responsibility**

The use of the International Form of Certificate of the Medical Cause of Death places upon the certifying medical practitioner the responsibility for indicating the course of events since he is the best person to decide which of several conditions was directly responsible for death occurring, and what antecedent conditions if any, gave rise to the direct cause.

The doctor before issuing the Certificate of the Cause of Death, should ensure that he treated the patient for the last illness, which has led to the death of the patient.

The statutory Certificate of Cause of Death (Registration B 12) is annexed. However, in the State Sector hospitals the accepted practice is to fill the Death Declaration Form (Registration B 33), which includes the declaration to the Registrar of Deaths stating the Cause of Death, where the doctor is functioning in the capacity of the declarant. In the instance where an Inquest into the death is required, this form is not be used, and the cause of death is issued by the Inquirer into Sudden Deaths or the Magistrate, who will be the declarant in the Inquirer's declaration of death form.

If a doctor is issuing a Certificate of Cause of Death, he/she should use the statutory form (Registration B 12) or Death Declaration Form (Registration B 33) as the case may be.
Issuing a Certificate of the medical cause of death should not be done on a piece of paper or even a letterhead.

**Percentage of medically certified deaths**

It is expected that 60% of deaths that occur in the country are certified by medical doctors, coroners or other medico-legal authorities are responsible for certifying 15% of the deaths. Other persons including Grama Niladhari (Government Administrative head at village level) are responsible for giving cause of death for remaining 25%.

**How the data are validated; and are there other techniques in place.**

Apart from the special studies which are mostly conducted for academic purpose there is no routine system to validate the cause of death reported by civil registration system.

**Use of Verbal autopsy**

Until the year 2006 verbal autopsy was not used a method for getting information regarding deaths by the vital registration system. It was only used as a research tool in special studies done on mortality statistics. This year verbal autopsy was introduced as a method for registering deaths that occur in the community. This is done as a special project and the birth and death registrars were given training on applying verbal autopsy to identify the cause of death in community deaths. However the verbal autopsy questionnaire is still not publicly available, still not validated and consistency with international standards are not yet assessed.
8. Other

Dissemination of the information (time between collection and publication)
Although the coverage of vital registration is over 90%, there are delays in analysing and publishing these data. For instance, data on live births by age of mother have been compiled only up to 1998. All other vital information like births, deaths, foetal, infant, and maternal mortality are available at national, but not at sub-national level. Data on deaths by age and deaths by cause are also available only up to 1996. Other information are available for year 2003.

Delay in publishing data is due to a variety of reasons. One of these is the fact that the flow of information on vital events is not reported from all registration divisions on a regular basis. This is mainly due to disruption of the reporting system especially in the war-affected areas. At the same time, the recording of cause of death is not always done. Therefore, it is difficult to analyse deaths by cause due to lack of information.

The facilities and resources available for the vital registration department of the registrar general department is not adequate for timely processing of information.

Utilization of the mortality statistics information at national and sub-national levels
The death certificate is the source for national mortality statistics and is useful to determine which medical conditions receive research and development funding, to set public health goals, and to measure health status at local, national, and international levels. These mortality data are valuable to physicians indirectly by influencing funding which supports medical and health research which may alter clinical practice and directly as a research tool.

In Sri Lanka, like in most countries certificates of cause of death have a dual purpose. Firstly, they contribute to the legal record of the death; the cause of death may be significant in insurance and inheritance matters. Secondly, they are the source of mortality statistics, which have an important part to play in medical research and Health Planning, and are likely to become more valuable as methods of diagnosis and analysis improve.

Reasons for incomplete registration

Although the completeness of the death certification is high in Sri Lanka there is still room to develop the accuracy especially in relation to the cause of death. In certifying the cause of death, any disease, abnormality, injury, or poisoning, if believed to have adversely affected the decedent, should be reported. If the use of alcohol and/or other
substance, a smoking history, a recent pregnancy, injury, or surgery was believed to have contributed to death, then this condition should be reported.

**Level of public awareness and Enforcement**
The in depth interviews were conducted with several persons from different categories to identify their level understanding on the death registration in Sri Lanka.

Most of the lay persons are aware of the need of registering a death. But most of them fail to describe the procedure of registration correctly. Their understanding on the proportion on the death registered are poor.

**Measures by the Registrar General Department to improve the quality of Mortality Statistics**
A project to improve the vital registration system in the country is being implemented under funds from the World Bank funded Health Sector Development Project of Sri Lanka.

The main objective of this programme is to provide accurate, reliable and timely available data for the health sector of the country. Certain improvements have being achieved upto now.

1. Initiation of amendment of Birth and Death registration act to ensure 100% registration of deaths
2. Revision of formats used for registration of vital events – Inclusion of pregnancy cage to the death registration form
3. Original documents of cause of death certified by Doctors and coroners are scanned and used for coding of cause of death
4. Introduction of verbal autopsy form for identify correct cause of death for community deaths
5. Initiation of automation of the mortality coding by using computers