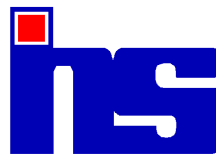


A Study of the
Andhra Pradesh Civil Registration System,
2010.

G. Surendra

2013

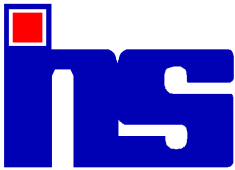


THE INSTITUTE OF HEALTH SYSTEMS

RP59/2013 ; Reprint 2021

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Originally Printed in Hyderabad, 2013

IHS Library Cataloguing-in-Publication Data

Andhra Pradesh Civil Registration System: 1st Edition\ G. Surendra

ISBN 978-81-7934-058-5

Includes bibliographic references

1. Monitoring & Evaluation, 2. Vital Statistics, 3. Civil Registration Systems, 4. Andhra Pradesh, India.

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Price: Print: INR 350; Pdf Download: Free

2021 Reprint Note:

At the time of original publication in 2013, the Institute of Health System was located in HACA Bhavan, Hyderabad, AP - 500 004, India. In June, 2014, the Telangana State (TS) was formed out of Andhra Pradesh, with Hyderabad as the State Capital. In November 2021, the Institute of Health Systems shifted to its present location in Sivananda Rehabilitation Home Campus, Kukatpally, TS 500072. This reprint incorporates the new address of the Institute. The original title “Andhra Pradesh Civil Registration System” has been revised as “A Study of the Andhra Pradesh Civil Registration System, 2010”. No other change in content of the report originally published in 2013.

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Mpl: Municipal;

GP: Gram Panchayat;

MP: Mandal Praja Parishad / Mandal Development Office

A Study of the Andhra Pradesh Civil Registration System, 2010.

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A Study of the Andhra Pradesh Civil Registration System, 2010.

I. Introduction

Good public-health decision making is dependent on reliable and timely statistics on births and deaths (including the medical causes of death). Civil Registration, Vital Statistics, and data for Cause of Death are essential public goods. They are of crucial importance to the health sector and beyond. The civil registration of births and deaths - which are prime concern - conveys human rights to individuals and helps with economic development. Vital statistics on births and deaths, together with reliable data for cause of death, provide crucial information for policy, planning and evaluation in all sectors of development. The health sector has a responsibility to work closely with registration authorities, national statistical offices, and other agencies to promote and support the establishment and maintenance of civil registration. All high-income countries, without exception, have national civil registration systems that record these events and generate regular, frequent, and timely vital statistics. By contrast, these statistics are not available in many low-income and lower-middle-income countries, even though it is in such settings that premature mortality is most severe and the need for robust evidence to back decision making most critical. Several UN and WHO reports and publications have summarised the poor state of the birth and death registration in poor countries. The table below shows the estimated proportion and number of births in each WHO region that go unregistered every year. The inequalities in registration rates are large: developing countries account for 99% of the estimated 48 million unregistered births, with South Asia and Sub - Saharan Africa together accounting for 79% of all unregistered births. According to WHO (data not shown), these inequalities extend to the capacity to obtain cause - specific mortality statistics with only a third of all countries having complete data for cause of death. In Africa only the small island states of Maritius and the Seychelles have complete registration of births, deaths and cause of death. South Africa is the only other African country in which registration of births and deaths is high, but its cause of death data at the national level, although they have improved in recent years, still have large proportions of deaths attributed to undetermined causes. Of the remaining 43 countries in WHO's Africa region, only Madagaskar and Zimbabwe are able to obtain some data for causes of death. In Southeast Asia, Sri Lanka, and Thailand have high registration coverage, but only five other countries obtain even fragmented data for cause-specific mortality. In the America's by contrast, 24 countries have adequate data for mortality, although not all of these have high registration coverage, and eight countries have poor data for cause of death or none at all (Carla AbouZahr et al, 2007).

	Births (in thousands)	Proportion of unregistered children	# unregistered children (in thousands)
South Asia	37,099	63%	23,395
Sub-Saharan Africa	26,879	55%	14,751
Middle east and north Africa	9,790	16%	1,543
Commonwealth of Independent States and Baltic States	5,250	23%	1,218
East Asia and Pacific	31,616	19%	5,901
Latin America and Caribbean	11,567	15%	1,787
Industrialised countries	10,827	2%	218
Developing countries	119,973	40%	48,147
Least Developed countries	27,819	71%	19,682
World	133,028	36%	48,276

Table: Estimated annual number and proportion of unregistered births by region, 2003

Sustainable civil registration systems that yield reliable information about the state of a population's health should be a key development goal for the country and the statistical analysis derived from registration are public goods that Governments of developing countries

and developing partners need, which are key component of building the evidence base for health policies and improvement. (Mahapatra et al 2007).

The primary function of civil registration systems is to create and maintain legal documents proving the identity of individuals. Since these systems also provide official records of births and deaths, the statistics they produce are essential for understanding public-health status in countries and how it is changing.

Vital statistics can be used in several ways to guide public-health policy and practice. William Farr, the first Superintendent of Statistics in Britain's Office of the Registrar General, computed innovative national and sub national measures of vital statistics and mortality, which affected public-health officials, local government representatives, and public opinion. As early as the 1850s, he devised so-called league tables of unhealthy cities and compared them with healthy districts to generate increased public debate. General vital statistics from small areas are still used to identify mortality differentials within developed countries that have low mortality. Studies on occupational mortality that are based on vital statistics in Great Britain, Canada, and the USA have identified occupational carcinogens, as well as physical, social, and environmental factors linking some occupations with specific causes of death. Routine data from civil registration which showed a substantial increase in deaths from lung cancer in men, led Doll and Hill to identify the causal association between smoking and lung cancer, and subsequently tobacco, as a principal cause of several other diseases of public-health importance. Successful public-health campaigns which led to legislation on use of seatbelts and drink driving to curtail deaths from road traffic accidents, have been based on evidence generated from vital statistics. These examples show how vital statistics derived from civil registration systems have been instrumental in guiding policies and priorities for health development. Vital statistics support a variety of epidemiological research, ranging from ecological studies and methods used in descriptive epidemiology, to analytical investigations based on registration records such as the National Death Index (Mahapatra et al, 2007).

Civil registration is defined by the United Nations as: "The continuous, permanent, compulsory, and universal recording of the occurrence and characteristics of vital events (live births, deaths, foetal deaths, marriages, and divorces) and other civil status events pertaining to the population as provided by decree, law or regulation, in accordance with the legal requirements in each country" (United Nations, 2001). India being the member of the United Nations adopted similar definition considering the nature of data it is collecting depending on the local conditions. In India the CRS covers events of births and deaths only. The CRS in the country may be defined as " continuous, permanent, and compulsory recording of the occurrence and characteristics of vital events as defined in and as provided through a decree or regulation in accordance with the legal requirements of the country.

The registration records are primarily useful for their value as legal documents and secondarily as a source of vital statistics. Civil registration as a source of vital statistics is relatively inexpensive, as the statistics generated from the registration records are the by products of an essential administrative process. The registration records can also generate current and continuous statistics, which can be more accurate than any other method of data collection. However, the reliability of the statistics obtained through the registration system depends much on the completeness and promptness with which events are registered and the accuracy of the information in the registration records. The improvement in the system of registration of births and deaths is critically dependent on how much importance is attached

to the data on births and deaths by the respective State and District Administration, besides the level of awareness among the public about the utility of birth/death certificate also plays a crucial role.

Provision for registration of births and deaths and the mechanism thereof had been in existence in India for more than a century. The work of registration was carried out under various laws and byelaws existing at that time in different parts of the country. The need for the improvement in the vital statistics system was felt for long time, and therefore, on recommendations of various committees and conferences, the Registration of Births & Deaths Act, 1969 providing for compulsory registration of births and deaths was enacted in 1969. Since then the act has been enforced uniformly in all states and union territories. The act provides for registration of births and deaths and publication of statistical reports annually based on the civil registration data. The enactment of the Registration of Births and Deaths Act, 1969 has provided a strong framework for a sound registration system in the country.

In order to simplify and speed up the process of registration as also to bring in uniformity in birth and death registration formats, the registration system was revamped in the year 2000. Under the revamped system, the procedure for registration of births and deaths was also modified to some extent and the forms re designed. Most of the tables to be part of the Annual Report of the Chief Registrars based on registration of births and deaths data under revamped system would be based on the information of place of usual residence of the mother in case of births and place of usual residence of the deceased in case of deaths. Since 2000, the revamped system became operational in states in different phases. (Vital Statistics of India based on the civil registration system, Special report 1996-2001 released by the registrar General of India)

Though the Registration of Births and death Act, 1969 came into force, the level of registration of births and deaths has continued to be far from satisfactory in several States/UTs. The level of registration of births varies considerably across the states and Andhra Pradesh falls into the range of 40 to 60 percent. In respect of districts in Andhra Pradesh, Nalgonda records as low as 9.5% compared to the state average of 46.8% (George,Alex and Jaymon, K C .2005). Due to lack of accurate data from civil registration of Vital Statistics, the Sample Registration System was introduced to project the expected births and deaths and on comparison and analysis, there is huge gap in the registration as stated above.

The National Rural Health Mission (NRHM) was launched in April 2005, has set goals and objectives. Of the several, relevant objectives for deriving vital statistics on mortality rates and morbidity patterns, include., a) accurate recording and reporting of Vital statistics including births and deaths, particularly of mothers and infants and b) Maintenance of all the relevant records concerning services provided in PHC . Civil registration system and vital statistics play an important role in giving the accurate registered number of these variables which are core to understand the impact of the program. Evaluation Study (Gill,K, May 2009) conducted on NRHM in Andhra Pradesh focused on measuring the quality and quantity of service delivery in rural public health facilities, but little or scanty effort is made in evaluating the recording of Vital Statistics.

In an era of increased accountability, the empirical basis for monitoring progress and assessment of public-health programmes is becoming increasingly important in global health debates. Vital statistics generated through civil registration systems are the only source of data for continuous and comprehensive monitoring of public-health programs over time. Yet,

despite their central role in health development, insufficient priority by governments, donors, and health agencies is given to their development, strengthening, and assessment. Moreover, there is insufficient knowledge about the quality of vital statistics which impedes their use.

Most countries have introduced civil registration systems which generate some vital statistics, but their usefulness has been restricted because of many systemic difficulties. Good statistical systems should meet the information needs of their users in an efficient, credible, and objective manner. Previous assessments of the quality of general vital statistics have been done with few criteria, such as the completeness of registration. Moreover, comprehensive assessment criteria to evaluate the quality of cause-of-death statistics reported to WHO have been proposed, and expanded to assess data quality in India. These criteria have been organised into a framework of four quality concepts — namely, generalisability, reliability, validity, and policy relevance.

The Health Metrics Network (HMN) of the World Health Organisation has developed a method for assessment of country health information systems. The HMN method has been designed to give a broad overview of all components of a health information system. Several of the HMN criteria are based on the processes, rather than the output, and the core dimensions are not consistent with the key elements of the previous quality frameworks for official statistics—namely, accuracy, reference, timeliness, comparability and accessibility.

Table 1 presents an assessment framework for vital statistics derived from civil registration systems that is consistent with quality dimensions for official statistics. Panel 1 provides a glossary of the ideas and terms used in the table (Mahapatra, et al ,2007). The present study is designed to assess the vital statistics situation in Andhra Pradesh (AP) based

Panel 1: Glossary

Coverage of civil registration systems refers to the extent to which geographical or political units of the country have established these systems. For cause of death, coverage refers to the population living in areas where medical certification of cause of death has been legally mandated

Completeness is measured by the percentage of vital events actually recorded in the vital statistics and is estimated by comparison with an independent estimate for the population under consideration, with either direct or indirect methods. For cause-of-death statistics, completeness is the number of cause-of-death reports as a percentage of estimated deaths in the population

Cross-tabulation is recording of the event of interest by various characteristics associated with the event—eg, tabulation of births by age of mother and birth weight, etc.

Relevance is the degree to which cross-tabulation for priority characteristics—from a demographic and public-health perspective—are provided by the data source. The UN principles list relevant characteristics of vital events and discuss their importance. Cross tabulation of vital events, at least by priority characteristic, would show important relations

Small areas denote the smallest population groups or units for which tabulation of vital events are available

Timeliness means that statistics are made available to their users on a prompt and regular basis—eg, yearly

Comparability means the extent to which a statistic estimates the same thing in the same way over time and across areas

Accessibility refers to the ease with which users can access and make sense of the data

Media refers to dissemination of data in several formats—ie, print, electronic, internet, etc

Metadata refers to information about the data, such as documentation of data elements, their definition, method of collection, manner of presentation, potential for errors, etc. Its purpose is to enhance usability of data for public-health analysis

User service refers to dedicated institutional mechanism for distribution of data products, clarification of user queries, and productive engagement with data producers, and also data accessibility.

Table 1: Assessment Framework for Vital Statistics from Civil Registration System

	General Vital Statistics	Cause of Death Statistics
Accuracy		
Coverage	% of Population living in areas where CRS is functional	% of population covered by medical certification of cause of Death
Completeness	% of events contributing to fertility/mortality statistics	% of deaths with medically-certified cause of death
Missing data	% of key variables with response not stated	% of cause-of-death reports for which age/sex data are missing
Use of ill-defined categories		% of deaths classified under various miscellaneous and ill-defined
Improbable classifications		Number of deaths assigned to improbable age or sex categories per 100 000 coded deaths
Consistency between cause of death and general mortality		% of cause-of-death data points deviating more than 2 (or 3) SDs from general mortality based predictions
Relevance		
Routine tabulations	By sex and 5-year age groups, based on place of usual residence. Deaths in children under 5 years tabulated by 0 and 1-4 year age-group	By sex, and at least by eight broad age groups-namely, 0, 1-4,5-14, 15-29, 30-44, 45-59, 60-69, and 70+ years
Small area statistics	Number of general vital statistics tabulation areas per million population	Number of cause-of-death tabulation areas per million population
Comparability		
Over time	Stability of key definitions over time	Consistency of cause specific mortality proportions over consecutive years
Across space	Uniformity of definitions across areas	ICD to certify and code deaths; revision used and code level to which tabulations are published
Timeliness		
Production time	Mean time from end of reference period to publication	Mean time from end of reference period to publication
Regularity	SD of production time	SD of production time
Accessibility		
Media	Number of formats in which data are released	Number of formats in which data are released
Metadata	Availability and quality of documentation	Availability and quality of documentation
User service	Availability and responsiveness of user service	Availability and responsiveness of user service

CRS=civil registration systems. SD= standard deviation. Source: Prasanta Mahapatra, Kenji Shibuya et al. Civil Registration System and Vital Statistics: Successes and missed opportunities; Published on line Oct 29, 2007 DOI 10.1016/S0140-6736(07)61308-7

on the above recommended assessment framework and also its contribution towards monitoring and evaluation of National Rural Health Mission (NRHM) goals.

II. Objectives:

1. To document the development of the vital statistics system in Andhra Pradesh untill date
2. To evaluate the vital statistics system using WHO assessment framework for Vital Statistics developed by the Monitoring of Vital Events (MoVE) writing group of the Health Metrics Network (HMN)
3. Recommend policy options for comprehensive development of the vital statistics system in Andhra Pradesh.

III. Materials and Methods:

Andhra Pradesh consists of 23 districts, 7 municipal corporations, 126 municipalities (Gr I, II & III), 1125 revenue mandals and 21692 Gram Panchayats. The civil registration is being carried out in the above areas. The Public Health staff in Municipalities and Panchyat Secretaries in Gram Panchayats who are designated as Birth and Death Registrars are responsible and accountable for registration and its improvement. Six municipalities were selected, two from each region i.e. Andhra, Rayalaseema and Telengana from the total municipalities by simple random sampling which represents urban areas. Six mandals were selected two from each region by simple random sampling. Six gram panchayats were selected from each of the selected mandal by simple random sampling which represents rural areas. The list of selected municipalities, mandals and panchayats for the study are as shown in the following tables 2 & 3.

Sl	Municipality	District
1	Wanaparthy	Mahaboobnagar
2	Mangalagiri	Guntur
3	Madanapalle	Chittoor
4	Jammalamadugu	Kadapa
5	Nirmal	Adilabad
6	Venkatagiri	Nellore

Sl	District	Mandal Offices (MPDO and MRO)	Panchayat
1	Guntur	Rentachintala	Paluvoigate
2	Krishna	Gudiwada	Serivelpur
3	Ananthapur	Vajrakaroor	Chabala
4	Kadapa	Obullavaripalli	Y.Kota
5	Nizamabad	Bodhan	Kopparthy Camp
6	Khammam	Mudigonda	Kattakur

8 schedules were developed to gather data from the municipalities (urban area) and 12 schedules were developed for rural areas. Thus totally 20 data collection schedules were developed for the study and are summarised in Table 4. These include a “ Civil Registration Functionary Questionnaire” (Schedule 3 & 17) to be filled in by each of the staff involved in the civil registration and reporting. All other data collection schedules were to be filled in by the investigators on the basis of the registers/records, observations and interviews. All of the 20 schedules are reproduced in Annex-S.

Table 4: Overview of the data collection schedules for the APCRS study

Id	Schedule Title	Description
Urban area - Municipalities		

Table 4: Overview of the data collection schedules for the APCRS study

Id	Schedule Title	Description
Sch-1	Registration and Tabulation of Birth events for the year	Study Birth Registers, Form 1, Form 11, Files containing periodical reports and then fill the schedule
Sch-2	Registration and Tabulation of Death events for the year	Study Death Registers, Form 2, Form 12, Files containing periodical reports and then fill the schedule
Sch-3	Civil Registration Functionary Questionnaire	Form for gathering the information on role in registration of births and deaths, factors affecting the civil registration, adequacy of physical facilities, supervision of civil registration etc.,
Sch-4	Observations about Civil Regn & Vital Statistics Work in the Municipality	This form is used at the end of the visit to assess each aspect of the Civil registration and Vital Statistics work in the Municipality by the team members.
Sch-5	Surveyor scrutiny of Birth report- Legal part in the Municipality	This schedule is used to scrutinise the 25 most recent birth report- Legal parts (F1LP) in the Municipality and to record the findings.
Sch-6	Surveyor scrutiny of Birth report- Statistical part in the Municipality	This schedule is used to scrutinise the 25 most recent birth report- Statistical (F1SP) parts in the Municipality and to record the findings.
Sch-7	Surveyor scrutiny of Death report- Legal part in the Municipality	This schedule is used to scrutinise the 25 most recent death report- Legal parts (F2LP) in the Municipality and to record the findings.
Sch-8	Surveyor scrutiny of Death report- Statistical part in the Municipality	This schedule is used to scrutinise the 25 most recent death report- Statistical (F2SP) parts in the Municipality and to record the findings.

Rural Areas - Mandals and Panchayats

Sch-09	Surveyor scrutiny of Birth report-Legal part in the Grampanchayat	This schedule is used to scrutinise the 25 most recent birth reports- Legal parts (F1LP) in the Grampanchayat and to record the findings.
Sch-10	Surveyor scrutiny of Birth report-Statistical part in the Grampanchayat	This schedule is used to scrutinise the 25 most recent birth reports- Statistical parts (F1SP) in the Grampanchayat and to record the findings.
Sch-11	Surveyor scrutiny of Death report- Legal part in the Grampanchayat	This schedule is used to scrutinise the 25 most recent death report- Legal parts (F2LP) in the Grampanchayat and to record the findings.
Sch-12	Surveyor scrutiny of Death report- Statistical part in the Grampanchayat	This schedule is used to scrutinise the 25 most recent death report- Statistical parts (F2SP) in the Grampanchayat and to record the findings.
Sch-12A	Registration and tabulation of Birth events for the year in the Gram Panchayat.	Study Birth Registers, Form 1, Form 11, Files containing periodical reports being maintained in the Gram Panchayat and then fill the schedule
Sch-12B	Registration and tabulation of Death events for the year in the Gram Panchayat.	Study Death Registers, Form 2, Form 12, Files containing periodical reports being maintained in the Gram Panchayat and then fill the schedule

Table 4: Overview of the data collection schedules for the APCRS study

Id	Schedule Title	Description
Sch-13	Registration and Tabulation of Birth events for the year in the mandal	Study Birth Registers, Form 1, Form 11, Files containing periodical reports being maintained in the mandal for all Gram Panchayats and then fill the schedule
Sch-14	Registration and Tabulation of Birth events for the year in the selected Gram Panchayat in the mandal	Study Birth Registers, Form 1, Form 11, Files containing periodical reports and then fill the schedule for the selected Gram Panchayat
Sch-15	Registration and Tabulation of Death events for the year in the mandal	Study Death Registers, Form 2, Form 12, Files containing periodical reports being maintained in the mandal for all Gram Panchayats and then fill the schedule
Sch-16	Registration and Tabulation of Death events for the year in the selected Gram Panchayat in the mandal	Study Death Registers, Form 2, Form 12, Files containing periodical reports and then fill the schedule for the selected Gram Panchayat
Sch-17	Civil Registration Functionary Questionnaire	Form for gathering the information on role in registration of births and deaths, factors affecting the civil registration, adequacy of physical facilities, supervision of civil registration etc. (This Questionnaire has to be collected from the Panchayat secretary, ASO (o/o MRO) EOPRD (o/o MPDO) others involved with the registration process).
Sch-18	Observations about Civil Regn & Vital Statistics Work in the Mandal	This form is used at the end of the visit to assess each aspect of the Civil registration and Vital Statistics work in the MRO/MPDO offices by the team members.

A draft field investigator’s guide was prepared, containing the data collection schedules, instructions regarding gathering of the information from the selected municipalities, mandals and panchayats. Administrative support letters from the Commissioner & Director of Municipal Administration, Commissioner Panchayatraj, Chief Commissioner of Land Administration, Director of Health were obtained, authorising IHS team to gather data from the sample municipalities and panchayats and to interview the staff as needed. Four investigators mostly masters in social sciences, with prior experience of personnel interviewing and survey work initially recruited for the field work.

A. Pilot Study and development of schedules:

Purposively, we identified the following municipalities to observe and understanding the civil registration system to develop the schedules.

- 1) Thandur Municipality in Mahaboobnagar district
- 2) Vikarabad Municipality in Rangareddy district

We then developed schedules for municipalities. The field investigators were trained to familiarise with the data collection schedules. The investigators were then sent to the following municipalities purposively selected for pilot testing of the data collection schedules and practical training of the investigators.

- 1) Gadwal municipality in Mahaboobnagar District
- 2) Mahabboobnagar municipality

- 3) Sangareddy municipality in Medak district
- 4) Nalgonda Municipality.

Similarly, we developed the schedules to canvass in panchayats after conducting pilot study in the following panchayats

- 1) Arutla panchayat in Manchal mandal in Rangareddy district
- 2) Khanapur panchayat in Manchal mandal in Rangareddy district
- 3) Ibrahimpatnam panchayat in Rangareddy district

The above municipalities and panchayats are outside of the study sample municipalities / panchayats. Each round of pilot testing included structured debriefing of the investigators, to clarify their doubts, reconcile discrepancies and where required to revise the schedules. The schedules, developed after two such rounds, were then shared with the officers of the Planning department for their comments. The schedules were finalised, taking into consideration the comments of the study sponsors, and feedback from the pilot phase.

The four investigators were organised into two teams, each consisting of two members. These two field investigator teams started the data collection work from sample municipalities and panchayats. A team of at least two field investigators visited each of the sample municipality / panchayats for a seven to ten days period to gather information from and about the civil registration and reporting. Follow up visits were undertaken as required to complete the data collection schedules.

Typically, the field investigators would first greet the municipal commissioner / Mandal Revenue Officer / Secretary Panchayats, introduce themselves and explain the purpose of the study. The investigators would explain that the particular municipality / panchayat was one among the six randomly selected municipalities/ Panchayats from their district. The Municipal commissioners / Mandal revenue officers and staff in each study area were assured that their identification will be kept confidential and data gathered in course of the study will be held in confidence, tabulated and used for statistical purpose only. If, however, the staff is not comfortable to answer a particular question, they can skip and answer other questions.

After the initial introductions and familiarisation, investigators would hand over a copy of the Civil Registration Functionary Questionnaire to each of the staff involved in the registration of births and deaths and reporting. Explain to them that they can fill in the form at their leisure and ask when they can collect the filled in questionnaires. The investigators would also clarify any doubts about the questionnaire. The investigators will request the head of the office to provide access to the registers / records and seek cooperation of the concerned staff. The schedules 1 & 2 to be filled for urban areas i.e. municipalities after studying the birth and death registers, Forms 1, 2, 11 & 12. The schedule 4 to be filled by the investigators based on their observations at the end of the visit to assess each aspect of the civil registration and vital statistics work in the municipality. The schedules 5 to 8 are to be filled after scrutinising the 25 most recent birth and death reports (both legal and statistical parts) to record the findings. Similarly, the schedules for rural areas need to be filled. Schedules 9 to 12 need to be filled after scrutinising the 25 most recent birth and death reports (both legal and statistical parts), Schedules 12A & 12B to be filled after studying the birth and death registers, Forms 1, 2, 11 & 12. The schedules 13 & 15 are to be filled after studying the birth and death registers in the mandal revenue offices, schedules 14 & 16 are to be filled for

selected gram panchayat in that mandal. The schedule 18 to be filled by the investigators based on their observations at the end of the visit to assess each aspect of the civil registration and vital statistics work in the Mandal revenue offices.

B. Assessment Framework:

The assessment framework for vital statistics (as given in the table1) developed by the Monitoring of Vital Events (MoVE) writing group of the Health Metrics Network (HMN) in the World Health Organisation (WHO), that is consistent with quality dimensions for official statistics is used for evaluating the vital statistics system derived from civil registration system in Andhra Pradesh.

IV. Development of Vital Statistics System in Andhra Pradesh:

The Civil Registration System of a country envisages recording each and every incidence of vital event for legal purposes and in the process captures a lot of information on various characteristics of these events, which help in the compilation of a continuous series of vital events. Complete, timely and accurate registration of births and deaths is very crucial for the understanding of population dynamics at the local level and planning of effective health and development programmes. The extent of completeness and accuracy of birth and death registration is by itself an indicator of the modernization of society as vital statistics belong to the Core Statistics of any National Statistical System.

There were several attempts to gather vital statistics in the 19th century in Middle East and Asia. In Egypt, the Sultan, who was concerned about cholera epidemics, started civil registration in 1839, which became compulsory after 1912, and in Indonesia, a civil Registration System was put in place in 1849 and restructured in 1933. India began its civil registration in 1850 and modernized it first after independence in 1950 and then again in 1969. Mauritius was the first African country to pass a law pertaining to civil registration with several other countries (Central African Republic, Care Verde, Congo and Mauritius) starting civil registration in the 19th century. The remainder (Benin, Burkina Faso, Cameroon, Niger, Rwanda, Senegal, Chad, Togo) established civil registration in the 20th century with South Africa finally passing its Registration of Births and Deaths Act in 1992 (Rohina Joshi, 2006 - Cause of death in Rural Andhra Pradesh, India,). See the table 5 for history of civil registration systems initiated for different countries in the world.

The history of civil registration in India dates back to the middle of the nineteenth century. It started with the registration of deaths with a view to introducing sanitary reforms for control of pestilence and disease and not so much for studying population trends. The Provincial Sanitary Commissioners obtained statistics on deaths from the local health officers and passed them on to the Sanitary Commissioner of the Government of India. The quality of statistics thus collected was highly deficient and incomplete. The Sanitary Commissioner in his report for the year 1867 observed that, “..... *from the examination to which the returns have been subjected and a comparison of them with those of other countries, it is unquestionable that the mortality in these Provinces has been greatly understated; this is the case in an especial manner in the mortality of women*”. Very little was said however, with regard to births. The erstwhile Central Province of Berar was the solitary example, which introduced a system of registration as early as 1866. Punjab and United Provinces followed a little later. In 1873, the Bengal Births and Deaths Registration Act was passed and was later adopted by the neighboring states of Bihar and Orissa.

Year	Country	Type of Registration
443 BC	Room	Birth and death recorded
1 BC	Room	Births, deaths, marriages and divorces recorded in front of 7 witnesses
4 AD	Room	Birth registration became compulsory
6 AD	Room	Churches attempted to registers births and deaths
12th Century	England and Sweden	Ecclesiastical registers
1406	France	Births were recorded systematically by the church
1532	England and Ireland	Bills of mortality were recorded to monitor the plague epidemic
1539	France	Compulsory registration of births, deaths and marriages
1608	Sweden	Civil registration system initiated
1628	Finland	Civil registration system initiated
1639	Denmark	Civil registration system initiated
1639	Massachusetts	Civil registration system initiated
1646	Denmark	Compulsory registration of births and deaths
1685	Norway	Civil registration system initiated
1686	Sweden	Compulsory registration of births and deaths
1808	Poland	Civil registration initiated
1837	England & Ireland	Civil registration became independent of the church
1839	Egypt	Civil registration system initiated
1850	India	Civil registration system initiated
1889	Philippines	Civil registration system initiated
1900	New Zealand	Civil registration system initiated
1901	Australia	Civil registration system initiated
1909	Massachusetts	Compulsory registration of births and deaths
1919	Canada	Civil registration system initiated
1919	Latvia	Civil registration system initiated
1933	United States of America	Civil registration became complete
1953	Lithuania	Vital events became freely available
1969	India	Registration of Births and Deaths Act
1987	China	Vital registration system established
1992	South Africa	Registration of Births and Death Act

In the years that followed significant advance was made in the notification of vital events. The Sanitary Commissioner observed in his report that the people had started adducing entries in the registers of births and deaths as evidence in law courts. It was perhaps the beginning of the realisation of legal as against statistical needs of registration of births and deaths. A note worthy development in the registration of births and deaths took place in the

year 1878 when a directive was given to some of the local authorities to make on the spot enquiry in areas where the registered vital rates were too high or too low.

The important land-mark in the development of vital statistics was the stress laid by the Indian Famine Commission (1880) on the importance of these statistics. The Commission inter-alia pointed out that the registration of births and deaths should be made legally obligatory in villages as well as in towns and the regular monthly publication of the main vital statistics should be enforced. The Commission also fixed the responsibility on the Sanitary Commissioner to warn the Government of any unusual rise in the death rate in order that the cause of such a rise might be enquired into by the Government.

It was, however, only in 1886 that a Central Act- the Births Deaths and Marriages Registration Act- was placed on the Statute Book to provide for voluntary registration throughout British India. This Act was not to affect any law on the subject already in force or which might be passed subsequently for any particular local area and therefore had only limited force. Advantage was taken of the Act by the foreigners, particularly Europeans and Britishers residing in the country. It was virtually inoperative as far as the general population was concerned. Registration was carried on under various legal provisions in different parts of the country. In the urban areas the registration was carried on under municipal bylaws and in the rural areas according to administrative orders issued from time to time to village officials under the revenue codes and police manuals.

A few states like the erstwhile composite Madras and Bengal had their own specific Act (Madras registration of Births and Deaths Act 1899 and Bengal Births and Deaths Registration Act 1873) which had been adopted by a few other states also while others had only enabling Provisions in this behalf in the Municipal Act, Panchayat Act, Chowkidar Manual or Land Revenue Manual and registration was governed by executive orders or bylaws setting out local registration procedures. (Handbook on Civil Registration - Registrar General of India, March 7, 1981). The Madras Births and Deaths Registration Act, 1899 was in force in Madras state and Andhra region in Andhra Pradesh. Consequent upon the reorganisation of the states in 1957, the compulsory registration of births and deaths was extended to the urban areas of Telengana in Andhra Pradesh during 1959, but there was still no registration in Visakhapatnam and Srikakulam agency areas. During the year 1970, (i.e after the enactment of the Registration of Births and Deaths act, 1969), all the areas in the state including Visakhapatnam and Srikakulam agency areas were included under compulsory registration of births and deaths.

The initiatives of civil registration systems in India is as given in the following table

Table 6: History of the Civil Registration System in India

Year	Registration System
1869	Introduction of Civil Registration System
1886	The Births, Deaths and Marriages Registration Act throughout British India
1951	Creation of the registrar General of India's office
1969	Registration Births and Deaths Act
1970	Registration of Births and Deaths Act became a law
Early 1970	Introduction of Medical Certification of Cause of Death in some hospital in Urban India

Various Commissions and Committees have reviewed the civil registration based vital statistics system in the past. The enactment of the 'Registration of Births and Deaths (RBD) Act, 1969' replacing all diverse laws that existed on the subject, and the Model Rules framed under the Act introduced a uniform piece of legislation to overcome the problems of multiplicity of Acts and Rules that existed in the country. Thus, the Act aimed to have a uniform system of registration and data collection on vital statistics. The Act provides for compulsory registration of births and deaths in the country. The RBD Act has provided for a hierarchical setup for the registration machinery in the country, headed by the Registrar General of India at the Center. He is responsible for the consolidation and tabulation of the registered data at all India level. He is also entrusted with the task of evaluating and promoting the registration system in the various states and union territories. The Chief Registrar of Births and Deaths is the chief executive authority in the State for implementing the provisions of the Act. There are District Registrars in the districts and Registrars and Sub-registrars for registering births and deaths occurring in the area allotted to them within a district. Every year, the Registrar General publishes a volume 'Vital statistics in India based on civil registration system', in which registered data for the states and union territories are presented. These include data on the number of births and deaths, birth rates, death rates, the age distribution of the deceased, infant mortality rates, cause of death etc., The Director of Health in Andhra Pradesh is designated as Chief Registrar of Births and Deaths. The States with the approval of the Central Government have made Rules to implement various provisions of the Registration of Births and Deaths Act, 1969. Govt. of Andhra Pradesh made such rules in 1977 and latest in 1999. The organisation in Andhra Pradesh is given in Fig -1.

A. Legal Framework for Civil Registration and Vital Statistics:

Civil registration system was covered for whole state of Andhra Pradesh with the Registration of Births and Death act, 1969. Initially, Andhra Pradesh Registration of Birth and Death Rules 1977 was issued which came into force from 3rd Sept 1977 . Subsequently, Andhra Pradesh Registration of Birth and Death Rules 1999 was issued on 29th Dec 1999 to come into force with effect from 01/01/2000 covering revision of forms for giving information on births and deaths, furnishing periodical returns along with statistical parts, preparation of statistical report, maintenance of registers, inspection of registers etc.,

The Chief Registrar has prepared the following documents to facilitate the CRS staff for proper implementation of the act and impart training to the concerned registrars on civil registration and vital statistics and doctors on certifying the cause of death.

1. Compendium of registration rules, Government Orders, RBD Act, 1969 with clarifications and instructions (English version).
2. Birth and Death Registrar's training handbook (Telugu version).
3. Birth and Death Registration - Duties and Responsibilities (Telugu version).

The civil registration system is useful for the individuals to obtain the birth and death certificates as an evidence of identity, age and for purposes of establishing origin and nationality when dealing with government or private business. It is also useful for getting admission in the schools, to enroll as voter, to obtain driving license, to obtain insurance policies, to get passports etc. The death certificate is also useful for getting hereditary certificate, to claim insurance amounts, settling property and business related issues and for other legal issues.

The vital statistics derived from CRS is useful for state and central governments for different purposes like

1. Calculating the number of citizens each year for administrative areas by age and sex.
2. Make population projections for future planning.
3. To plan immunisation programmes and other health programmes.
4. To cover the mother and child under the programmes of govt.
5. Helping to guide efficient resource allocation, policy making at local level for planning health and education services, housing etc.,
6. Addressing health inequities from communicable disease, chronic disease and injuries.
7. Generating life tables and life expectancies for many health planning programmes.
8. Measuring progress on the NRHM, MDGs and other international health goals, etc.,

The civil registration service to citizens is provided by respective local bodies, i.e. Municipalities and Corporations in urban areas and Gram Panchayats in Rural areas. In addition, the Mandal Revenue Offices (MROs) in rural areas provide birth and death certification services. In urban areas, intermediate tabulation of vital statistics is done by Municipalities and Corporations. In rural areas, intermediate tabulation is done by MROs and Vital Statistics units of the District Medical and Health Office. State level tabulation, compilation and official release of vital statistics is done by the Vital Statistics Division in the Directorate of Health.

The registration of births and deaths is done free of cost within the due date as notified, but there is provision in Act for delayed registration of vital events with penalty. The amount of penalty is as mentioned in the Table 8 and the penalty is routinely applied. The definitions for the vital events like Live birth, still birth and death as defined in the act are given in the glossary and they are aligned with the international standards. Vital Statistics data comes from the reports of birth, death and still birth. The forms for these reports are designed by the Registrar General for all the states to maintain uniformity. The printing and supply of forms is the responsibility of Director of Health who is also the Chief Registrar of Andhra Pradesh State. The state has also made rules and regulations that specify what information to collect, by whom, from whom by when and who is responsible for compiling the information and transforming it into statistics and who is tasked with management and dissemination of data. For example, the responsibility for reporting the births and deaths to the registrar for registration lies with the head of the house hold, nearest relative, medical institutions (both public and private), maternity homes (both public & private), local ayas, police, attendant doctor etc., as given in the table 7.

Table 7: Description of Forms and reporting responsibility

Report	Form	Reporting responsibility by	Report to	
			Urban areas	Rural areas
Birth Report	Form 1	Head of the household (HoH) or nearest relative of the HoH. Hospitals / Maternity Homes / Local Ayas and other institutions where such event occurs.	Municipal Commissioner	Panchayat Secretary
Death Report	Form 2	Head of the household or nearest relative of the HoH. Hospitals / Police and other institutions where such event occurs.	Municipal Commissioner	Panchayat Secretary
Still Birth Report	Form 3	Head of the household or nearest relative of the HoH. Hospitals / Maternity Homes / Local	Municipal Commissioner	Panchayat Secretary

Ayas. and other institutions where such event occurs.

Medical Certificate of cause of Death	Form 4	Medical Attendant for institutional deaths	Municipal Commissioner	Panchayat Secretary
Medical Certificate of cause of Death	Form 4A	Medical Attendant for non institutional deaths	Municipal Commissioner	Panchayat Secretary

The Act and the Rules clearly defined functions, duties and responsibilities of each government departments involved in the civil registration system. CRS function is being attended by the Public Health Section in the municipalities i.e urban areas and by the Panchayat Secretaries in the rural areas. The Act and the Rules also governs the registration and reporting of vital statistics requires births, still births and deaths to be reported in a timely fashion. Birth and death reports are designed to gather information in a manner consistent with the Registrar General reporting requirements of the national vital statistics. The timelines for reporting vital statistics is shown in table 8:

Table 8: Timelines for registration of vital events and penalty for delayed registration

Vital event	Form	Due Date	Penalty
Birth report	Form 1	Within 21 days of occurrence	1. Within 30 days of occurrence - Rs 2/-
Death Report	Form 2	Within 21 days of occurrence	2. Within one year of occurrence - Rs.5/-
Still Birth	Form 3	Within 21 days of occurrence	3. After one year of occurrence - Rs 10/-
MCCD for institutional death (MCCD)	Form 4	10th of the month for the death occurred in the previous month	No mention of penalty in the rules
MCCD for non institutional death (MCCD)	Form 5	10th of the month for the death occurred in the previous month	No mention of penalty in the rules

The law states that, the births and deaths should be registered according to place of occurrence but not according to the place of usual residence. But, the details of the usual residence of the parents of child for births and usual residence of the diseased for death are captured while registering the vital event for analysis and policy formulation. However, the statistical tables generated for analysis in Andhra Pradesh is based on the place of occurrence only. The details of events occurred according to usual residence are not being shared with the concerned registrars or health authorities for analysis. The number of births by place of residence is also useful for program planning, evaluation and research in many fields of application, such as health, education, housing, population estimation and projection and social and economic policy. Similarly, the number of deaths by place of usual residence is useful for administrative purposes for interpreting patterns of mortality and the distribution of medical facilities. It is also necessary for construction of life tables.

The law states that the medical attendant should certify the death and cause of death(CoD) for both the institutional and non institutional deaths. However, it is observed in Andhra Pradesh that, the certification of CoD is limited to urban areas only and not in rural areas may be due to various reasons including distribution of health care institutions in urban areas itself.

There are timelines for transmission of reports from the registrars to the next officer concerned and ultimately to the Chief Registrar for compilation and release of annual report as detailed below in table 9. Thus, we can say that, Andhra Pradesh state has adequate and enforced legislation on civil registration, stating that registration of births and deaths is compulsory.

Table 9: Due dates for furnishing the monthly reports, compilation of annual reports and publication.

Nature of Report	Due to (from Municipalities)		Due to (from Panchayats)		Due to (from Chief Registrar)
	Chief Registrar	MRO	DM&HO	Chief Registrar	Registrar General
Statistical part of Birth report in Form 11	10th of every month	5th of every month	10th of every month	15th of every month	
Statistical Part of Death Report in Form 12	10th of every month	5th of every month	10th of every month	15th of every month	
Statistical part of Still Birth in Form 13	10th of every month	5th of every month	10th of every month	15th of every month	
Compilation of State Annual Report					31st July of every year
Publication of State Report	Within 5 months from the date of compilation				

The United Nations recommends inclusion of certain characteristics in birth and death registration information which have been selected for their potential use in supporting national policy and program development and in building and maintaining of regional and global comparability. The characteristics recommended by the united nations and covered by Andhra Pradesh is given in the following table 10. We can say that, all the important characteristics are being covered by Andhra Pradesh.

Table 10: Coverage of characteristics to include in birth and death registration information.

Liv Births			
Characteristic of the event as recommended by UN	Covered by AP	Characteristics of the parents as recommended by UN	Covered by AP
Date of occurrence	yes	Date of birth and age (derived) of the mother and father	Yes for mother only
Date of registration	yes	Marital status of both parents	No
Place of registration	yes	Educational attainment of both parents	Yes
Locality of occurrence (derived)	yes	Place of usual residence of both parents	Yes
Urban/rural occurrence (derived)	yes	Locality of residence (derived)	Yes
Type of birth (i.e single, twin, triple etc)	No	Urban/rural residence (derived)	yes
		Children born alive to mother during her entire life	Yes
		Children born to mother and still living	No

Foetal deaths to mother	No
Date of last previous birth	No
Date of marriage and duration (derived)	Yes

Characteristic of the child				
Sex	yes			
Birth weight	yes			
Deaths				
Characteristics of the event as recommended by UN	Covered by AP	Characteristics of the deceased as recommended by UN	Covered by AP	
Date of occurrence	yes	Date of birth, age(derived)	yes	
Date of registration	yes	Sex	yes	
Place of registration	yes	Marital status	No	
Locality of occurrence (derived)	yes	Place of usual residence (for deaths less than 1 year residence of the mother)	yes	
Urban/rural occurrence (derived)	yes	Locality of residence (derived)	yes	
Cause (s) of death	yes	Urban/rural residence (derived)	Yes	
Certifier and type of certification (derived)	yes			

On interaction with the registrars, the feedback on the forms is that, the lay out of the form and characteristics being covered are user-friendly to collect the information and is available in local language also i.e Telugu in addition to English. The MCCD form certifying the cause of death comes from the medical attendant.

The data is being compiled according to the date of registration and according to place of occurrence. The births data is being disaggregated according to age, sex of the mother and order of birth. The deaths and CoD are being disaggregated by age and sex. The age groups are being followed as per the WHO standard to tabulate mortality and cause of death. The tabulation is being done maximum for district level and certain indicators for the urban areas with more than a lakh population. It is observed that, there is no provision for the category ill defined causes of death in the annual report. If there is any mis classification or ill defined, it is being corrected at the state level MCCD Division head who is also a medical doctor and expert in coding.

It is observed that, though lot of information is collected, the tabulation is being done only on few characteristics by the state VSD as follows.

Table 11: Characteristics of birth and death events used for generation of tables

Live Birth	Death	Still Birth
Sex	Sex	sex
Usual residence of the mother	Usual residence of the deceased	Usual residence of the deceased
Locality (derived)	Locality (derived)	Locality (derived)
Age of the mother	Age	
Number of children born alive including current child born	Cause of death	

At state level, the VSD is generating both district and state level statistics both for urban and rural areas separately and an Annual Report is being released every year. The annual reports released by the Vital Statistics Division of the Chief Registrar of Births and Deaths and made available for a ten year period, from the year 1998 are as shown in the Table-12.

Table 12: Release dates of Annual Reports

Year	Vital Statistics	Medical Certification of Cause of Death
1997	Not available	18/02/2000
1998	31/03/2000	Released but date not available
1999	06/07/2001	26/06/2002
2000	Released but date not available	Report not available
2001	03/02/2003	26/06/2002
2002	08/01/2004	25/01/2005
2003	01/01/2005	25/01/2005
2004	17/01/2007	27/04/2006
2005	05/02/2007	24/04/2007
2006	09/04/2008	08/01/2009
2007	05/10/2009	27/10/2009
2008	20/07/2010	15/07/2010
2009	25/02/2011	07/04/2011

It is observed that, no such annual reports are being released at sub district level and partially at district and municipality levels. The annual report is being prepared by VSD covering about seven tables though the Registrar General has prescribed about 53 tables.

Though the inter departmental coordination committee exists at the state level, it hardly meets and resolves any problem. For example, in the last three years, it has not met even once to discuss the civil registration status and resolved the problem. It is understood that, the last meeting was held in the year 2007.

Though the registration functionary in urban areas i.e. at the municipality level is in tact, but it is very disturbing in rural areas i.e at panchayat level. For example, till 2002, the village administrative officers (VAOs) used to look after the birth and death registration and they were under the control of Mandal Revenue Officer who is the mandal registrar. From 2002 onwards, VAOs posts were dispensed with and entrusted to village functionary called Panchayat Secretary who also looks after births and deaths registration, but he was under the control of Mandal Parishad Development Officer and was attending to both panchayat raj and revenue items of work at the village. Again in 2007 to strengthen the revenue functionary, Govt has created the posts of Village Revenue Officers(VROs) and transferred the erstwhile VAOs to Revenue dept. At this juncture, there was confusion who should look after the birth and death registration as the birth and death registration was not included in the job chart of

VRO. However, few VROs have attended civil registration for three months at their discretion and convenience. Subsequently Panchayat Raj Dept has issued orders by including the birth and death registration function for panchayat secretaries. Since 2007, Panchayat secretary is looking after the birth and death registration at village level. However, the Mandal Revenue Officer is continue to be the Mandal Registrar till today. But he is not monitoring civil registration subject as the panchayat secretaries are working under the administrative control of Mandal Parishad Development Officer. As a result the birth and death records upto 2007 are with the mandal revenue officer and after 2007, most of the registers are with the panchayat secretaries. Mandal Revenue Officer who is mandal registrar is not taking any responsibility to pursue on the civil registration and not conducting any coordination meetings. Mandal Parishad development officer in his routine monthly meetings may review the CRS subject and it depends on the interest of the officer as he is not responsible for civil registration by a mandate. During the transition in the year 2007, certain records were not handed over to the successors as they couldn't trace out any documents in support of reporting vital statistics.

The public health staff was made responsible for civil registration in urban areas and panchayat secretaries in rural areas. Civil registration job is either primary or secondary for them and the administration cost is borne by the respective controlling departments. As a result, the budget provision covering administration cost on civil registration functionary is almost zero. However, for collection, compilation, preparation of reports, there is a separate statistics department under the control of Director of Health (Chief Registrar). Vital Statistics Division (VSD) headed by the Deputy Director is the state level statistical agency functioning under the control of Director of Health. The head of the Statistics department was also designated as the Deputy Chief Registrar of births and deaths. The statistical staff are functioning at state level, regional director level, district level and municipality level to collect, compile and process the data on vital events. Hence, there is budget provision annually in the health department under the head "surveys and statistics" for meeting the salaries, wages, TA & DA and other establishment cost under non plan for statistical staff. There is no budget provision for plan schemes for vital statistics.

The budget provided for the last seven years is shown in the following table:

Table 13: Budget Provision for Compilation of Vital Statistics - Non Plan(In 000s) INR

Expenditure Head	2011-12 (BE)	2010-11 (RE)	2009-10 (AC)	2008-09 (AC)	2007-08 (AC)	2006-07 (AC)	2005-06 (AC)
Salaries	49728	42720	31422	28474	29965	24940	23413
Office Expenses	1052	854	732	611	4803	870	875
Traveling Allowance	385	308	91	104	227	171	143
Petrol, Oil and Lubricants	25	17	16	20	5	13	12
Advertisements, Sales and Publicity Exp.	4000	3200	3000	2591	0	0	0
Grants-in-aid	2	2	5	0	0	-190	4
Total	55192	47101	35266	31800	35000	25804	24447

Note: BE=Budget Estimates, RE=Revised Estimates, AC=Actuals

As seen from the above table, the amount provisioned for all heads except salaries, may not be sufficient and it may impact the supervision on the civil registration resulting in under reporting of vital events and poor quality. Another observation is that, there is no training component in the above expenditure head which also directly impacts the quality of registration and reporting. However, it appears that the Registrar General of India is supplying IEC material for creating awareness among the public and registration staff and also releasing some amount for training to cover maximum three to four districts per annum depending on the availability of funds.

V. Results:

The functioning of civil registration system and vital statistics has been assessed based on assessment framework as recommended in Table 1 and the results are as follows.

A. Accuracy:

Coverage, completeness and incidence of missing data are three key contributors to accuracy of estimates produced by any statistical system.

1. Coverage:

The Corporations and municipalities in urban areas and the panchayats in rural areas are the registration units where the citizens can approach to register births and deaths occurred. There are 125 registration units in the urban areas covering the population of 2,05,17,921 and 21670 registration units in rural areas covering the population of 6,28,06,885 as per the Annual Report on Vital Statistics, 2009. As seen in the fig 2, the registration units in urban areas were suddenly fallen to 117 from 232 in the year 2000. There is no suitable explanation from the VSD. The reason may be that, there may be more than one registration point in a single unit but counted the points as units by oversight. Subsequently, the VSD started to monitor the vital statistics by registration unit only. From the year 2000 onwards, almost it is steady & stable till 2005. Subsequently the registration units have been increased due to addition of municipalities by converting the nagar panchayats into Grade III municipalities. Again in 2008, the registration units were reduced to 125 from 132. This was due to merger of adjacent municipalities into Greater Hyderabad Municipal Corporation. Similarly, in rural areas, till 2002 all the villages were designated as registration units and there were 26,613 such registration units. Subsequently, the registration job was transferred to panchayats (21,670) which covers one or more villages. Now the panchayat is the unit of registration in rural areas. That is the reason, the registration units were reduced to 21,670 from 26,613. Since 2002, the registration units are almost stable (see fig 3). There are no subsidiary registration units in the hospitals either public or private. But 11 industrial / project townships in the state were designated as registration units that are included either in urban or rural depending on the location.

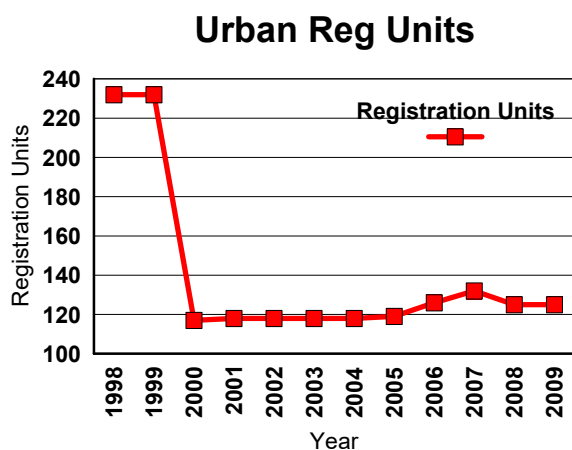


Fig 2

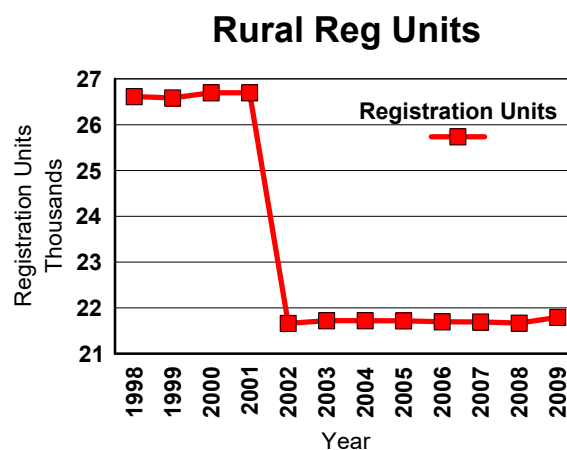


Fig 3

Overall, the registration units are adequate in the state both in urban and rural areas. All the registration units are accessible for citizens in urban areas during the office hours and on all working days of the state government. The registration is more or less stabilised in urban areas. However, it is not the same in the rural areas. There are several problems in rural areas for registration inspite of issuing many instructions from the Chief Registrar and District Registrars. Chief Registrar also made an arrangement of local coordination by involving ANM, ASHA and Anganwadi worker for improvement of registration, but it hardly had any impact due to many reasons. Some of the observations made during the study are as follows.

- i. The panchayat secretaries are less in number compared to the number of panchayats. Each secretary is incharge for about 3 to 4 panchayats, hence he is not able to concentrate on the job of civil registration in addition to his regular panchayat work. For example, there are 21,809 panchayats in the rural areas of the state. To manage these panchayats, the cadre strength is 12, 395. But, only 8,891 panchayat secretaries are working as on Oct, 2011, thereby there is shortage of 3504 panchayat secretaries in rural areas of the state. In some of the mandals, only one secretary is working for all the panchayats in that mandal. For example, in Rentachinthala Mnadal which is a sample unit, though there are 11 panchayats in the mandal, only one secretary was working at the time of field investigator's visit. As a result, he is maintaining the registers at his residence. The people who wants to register any event need to go to the panchayat secretary's residence. It was also observed that, most of the panchayat secretaries are maintaining the birth and death registers at their residences as a practice.
- ii. The meetings of panchayat secretaries and ANMs are not taking place in a timely manner due to the problem mentioned above and hence information sharing and reconciliation is not taking place..
- iii. As there is pressure from the District Registrar who is also the DM & HO, some of the PHC medical officers are collecting the details from ANMs and sending the reports on births and deaths without confirming whether they are registered with the panchayats or not.
- iv. The LD Computers, ANMs and statistical personnel from DM&HO offices, whenever visits Panchayat offices, collects the available reports without leaving any evidence of acknowledgment, and hence proper accounting was not maintained for forms, reports sent

and no supporting files were available resulting in poor documentation on the vital statistics system.

- v. The formats of birth report details available with ANM and the format prescribed for registration differs. Due to this, the number of events occurred may not change, but capturing the statistical part of the events suffers which impacts the estimation of vital characteristics of the events for policy formulations and evaluation. Further, the ANM used to send the available details for the events in a slip or piece of paper to the panchayat secretary for information and registration. There are no evidence of follow up on these slips whether they got registered or not, or calling/issuing notices to the head of the household to furnish required particulars for registration both in legal and statistical parts.
- vi. Date of birth for a particular birth event recorded in the registers maintained with the ANM, ASHA, Anganwadi worker and panchayat secretary were not tallied for few of the events chosen randomly. For example in Chabala and Paluvaigate panchayats, the date of birth differs for 9 events between the registers being maintained by them. Similarly, the date of death differs for 14 events in 3 panchayats i.e Chabala, Paluvaigate and Kattakur. The details are given in the Annex 1 & 2.
- vii. Some of the panchayat secretaries are registering births and deaths which occurred outside their jurisdiction, thereby duplication of registration may happen. For example, about 41 births were registered in Chabala, Gullapalem and Y.Kota panchayats which occurred out side the panchayats in the years 2008 to 2010. Similarly about 10 deaths were registered which occurred out side the jurisdiction of the panchayats, The details are given in Annex 3 & 4. Mostly, this may happen out of ignorance or due to pressure from local leaders/elders as informed by the panchayat secretaries. The people also puts pressure on the panchayat secretary to register the event as it is time consuming for them to go to the place where the event occurred and obtain a certificate.
- viii. Some of the doctors in urban hospitals where the events occurred are also advising the people to go the panchayat secretary to register and obtain certificate may be out of ignorance of the act and rules.
- ix. Most of the panchayat secretaries are attending the office once or twice a week, and hence people are forced to wait for getting the vital events registered till they come to office or otherwise go to their residences.
- x. Most of the panchayat secretaries are not at all aware of the MCCD forms Form 4 (Institutional death) and Form 4A (non institutional death).

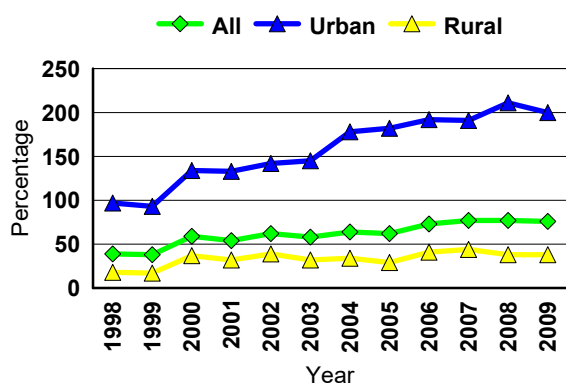
2 Completeness of births and deaths registration:

Systems for checking data for errors or inconsistencies should be in place at all levels of vital statistics system, beginning at the data collection point. Ideally, a set of standard data checking procedures should be determined for use at every data collection office. These procedures include checks on the logic and completeness of the raw data as well as arithmetical and logical checks of the vital statistics once compiled at whatever level this is done. In Andhra Pradesh, in practice, the checks and completeness is being attended only at state VSD office and the tables are generated for district and state level including estimation of birth, death and infant mortality rates. This is not happening either at registration office level, mandal level or municipality level or even at district level. All these functionaries

simply consolidate the registration data and transmits to the state level. Even these checks are being attended only on annually basis at state VSD and not routinely like monthly or quarterly basis. VSD, at the end of the year, estimates for the state and district level, the expected number of births and deaths that should occur each year and compare this to the actual number of registered events. The birth and death rates derived from the sample registration system in India is being used for estimation of the expected number of births and deaths at state and district level.

The completeness of births and deaths has been estimated based on the birth and death rates resulted from Sample Registration System (SRS) and the mid year estimated population. The completeness for births has been estimated for a twelve year period from the years from the year 1998 to 2009. As seen from the Fig 4 the completeness for birth registration is estimated at 76% for the year 2009. It was 39% in 1998 and gradually increased to 76% which indicates a positive sign of improvement. However, completeness appears to be worsened during the year 2009 compared to 2008. Urban and rural area differences in completeness have widened as the completeness in urban is 200% whereas it is 38% in rural. The observation in the rural areas for very low completeness is that, most of the pregnant mothers are preferred to go to nearby urban hospitals for safe delivery which shows the impact of maternity care taken by the health department. As a result, the completeness in urban areas is very high as the registration is being done based on the place of occurrence of birth event. In respect of deaths registration, it was estimated at 68% for the year 2009. It was also 39% in 1998 and gradually improved to 68%. Urban and rural differences in completeness of death registration have also widened. When compared to urban areas, the completeness in rural was far below i.e 48% for deaths in the year 2009 which should be a concern for the registration authorities and health department to look into the system for its improvement. Though the access to registration units in rural areas is more or less satisfactory i.e one registration units per 3000 population, the registration is low because of the access to the registration staff as one panchayat secretary is incharge for two or three panchayats and he is also attending the office once or twice in a week.i.e we can say, there is short of the registration staff in rural areas. Further lot of awareness campaign need to be conducted in rural areas for the people to understand the importance and benefits of the civil registration system. Moreover, certain legislation like insisting date of birth certificate in the schools for admission or for any other beneficiary oriented programmes may improve registration. In addition to above, registration campaign may be conducted or set up mobile registration at the remote areas wherever it is found low.

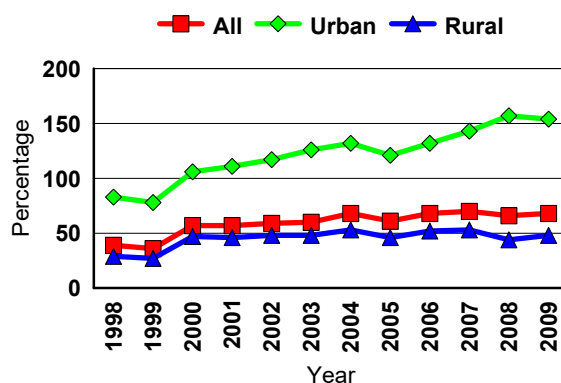
Completeness of Birth Regn



$YB = (RB / CBR * P) * 100$
 YB = Estimated births registration completeness (%)
 RB = Actual number of registered births
 CBR = Crude birth rates as estimated by Registrar General of India through SRS (per 1000)
 P = Total population size

Fig 4

Completeness of Death Regn



$YD = (RD / CDR * P) * 100$
 YD = Estimated death registration completeness (%)
 RD = Actual number of registered deaths
 CDR = Crude death rates as estimated by Registrar General of India through SRS (per 1000)
 P = Total population size

Fig 5

In respect of cause of death certification against the expected deaths, it has increased from 2.6% in 1998 to 10.75 in 2009 as shown in the Fig 6. This needs to be improved a lot as most of the health programmes are dependent on the CoD which should be accurate and available timely. The MCCD section at VSD office is maintaining the list of about 4,222 health care institutions both public and private, where the CoD need to be received and further improve the system by way of continuous trainings. The details of the health care institutions are given in Annex 5. The details of deaths occurred and MCCD received health care institutions wise are not available for further analysis.

Completeness of COD

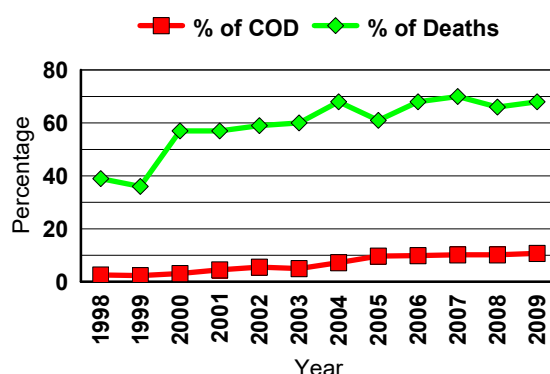


Fig 6

After registration of a vital event, an integral step in the production of vital statistics involves the transfer or statistical reporting of information from the registrar to the statistical service i.e VSD, which is accomplished by reproducing the registration form; by transcription onto a statistical report. Problem arising in this step may result in inaccurate or incomplete statistical reporting. Errors introduced at this stage affects the completeness of national vital

statistics in a way similar to under registration or incomplete reporting of data items. During the study at the urban and rural areas, the data was collected on the monthly reports sent either in Form 11 (for births) & Form 12 (for deaths) or with covering letter for a 11 year period from the year 2000 to 2010 for all the sample units. See the table 14 on the status of monthly reports sent. In urban areas, only about 30% of the monthly reports (both in Form 11 and covering letter) for births were sent to VSD where as it is about 27% for death reports. In respect of mandal offices, it is about 27% for births and about 28% for death reports. Similarly in panchayats, only 16.67% of the birth and death reports were sent.

Table 14: Status of furnishing monthly reports and unsent forms by the registration units.

Urban/Rural	Births			Deaths		
	% of birth reports sent with Form 11	% of birth reports sent with covering letter	% of unsent birth reports available in the registration office	% of death reports sent with Form 12	% of death reports sent with covering letter	% of unsent death reports available in the registration office
Urban areas						
Municipalities	23.61	6.06	20.8	23.48	3.03	18.7
Rural areas						
Mandals	0.76	26.89	11.15	0	27.78	6.09
Panchayats	16.67	5.56	0	16.67	5.6	8.24

Further, it was found at the registration offices that, there were some statistical parts of Form 1 & Form 2 are lying without sending to the next higher authorities or VSD. In urban areas, 20.8% of the statistical parts of the birth events were not sent to the VSD where as it is 18.7% for deaths. In rural areas, 11.15% of the statistical parts of birth reports were not sent to DM&HO by the mandals and it is 6.09% for deaths. Similarly, 8.24% of the statistical parts of death reports were not sent by the panchayats. In rural areas, the birth registration is more or less zero due to the preference given by the pregnant mothers to go for institutional births at the nearby urban hospitals. This trend shows the impact of the health initiatives taken up at primary level and continuous monitoring of the pregnant women by the field workers like ANM and ASHA workers to use health care institutions for maternity care. We can draw conclusion from the above that, certain data though the registration offices have received from the informants couldn't be sent to the VSD, hence missed for counting and compilation. This almost clearly visible in the completeness of the birth and death registration as discussed in the previous paras. The supporting data tables with year wise, area wise and event category wise are given separately in the Annexes from 6 to 11.

Though, the delayed registration is being done as per the act and rules, it is not being tabulated to know the extent of increase or decrease. Similarly, the information being captured for the events occurred in the health care institutions both public or private, but it is not being tabulated and analysed as at what percentage the events happening at the public and private health care institutions separately. The data on health care institution wise gives an idea to establish the registration points either full or part time at health care institutions for speedy registration thereby improving the system.

3 Missing Data:

Correctness or accuracy of registration means that data items for each vital event on the vital record have been accurately and completely filled in, i.e., there are no response errors and there are no missing items. The measurement of any deviation from correctness is called “content error”. During the study and on the day of visit to the sample municipalities and panchayats, the data for the 25 most recent birth and death reports (both legal and statistical parts) were collected to scrutinise and arrive at the data missing for the key variables which are useful for estimation and analysis of various factors. Each birth / death report was scrutinised and recorded the availability if the data item is adequate and recorded missing if the concerned field is blank or the entry is not useful. In urban areas we could collect the data for 150 events and in rural areas we could collect partly based on the registers and forms currently available with the panchayat secretary. The details of sampled events for which the data is available is given in the Annex 12.

The data on the sex of the child was missing for 2 events(0.96%) out of 150 and the usual residence of the parents is missed for 29% of the events in legal parts of the birth reports as seen from Fig 7. The data on usual residence is useful to assess the infant and maternal mortality related issues, nutritional sufficiency for a particular area like village, ward, town etc.in order to focus on effective health care. This also helps to estimate the small area statistics in true sense provided the registrars communicate the details of birth events to the registrar where the parents of the child usually resides. In statistical parts of the birth reports (Fig 8), the data for the key variables like mother’s residence (9.73%), mother’s age at the time of marriage (34.59%), mother’s age at the time of delivery (47%), type of attention at delivery (2.16%), method of delivery (16.76%), birth weight (18.38%) and the duration of pregnancy (28.65%) were missed. The missing data for the variables is more in rural areas when compared to urban areas. These data helps to estimate the fertility rates, assessment of health care given by the health workers and the institutions, tracking the pregnant mothers, and impact of primary health care and nutritional requirements. The data is on education and occupation are useful indices of socio economic status and also required for international comparison. The classification of vital events by socio economic groups will be useful to study the relationship between the socio economic status of individuals and selected vital statistics i.e birth rates, infant mortality rates, cause specific death rates etc. Missing of such huge data leads to erroneous estimations and undermine the analysis of important indicators.

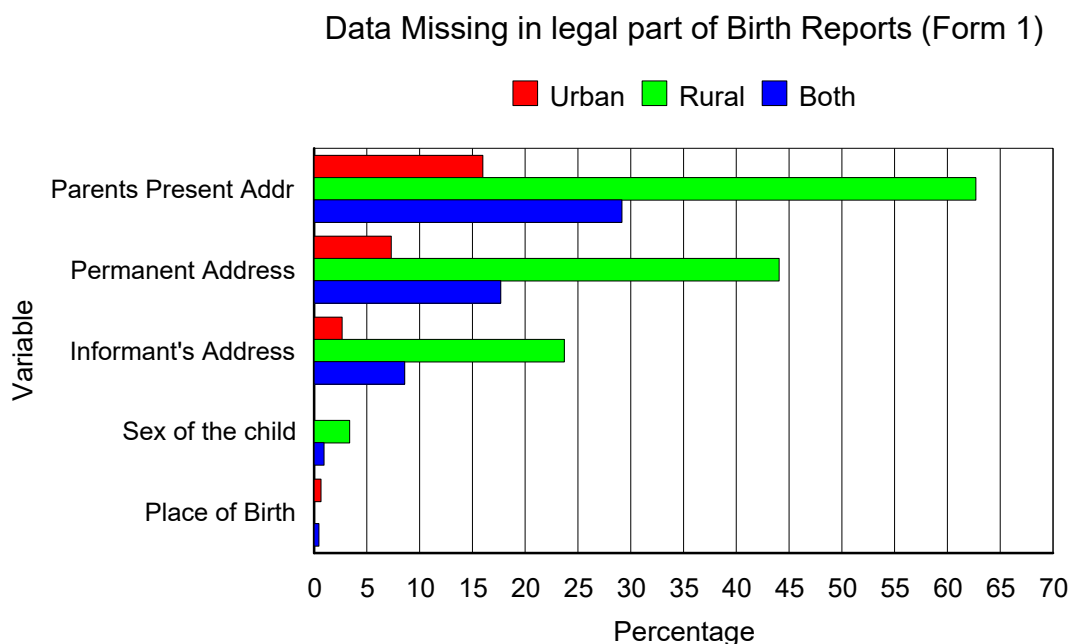


Fig 7

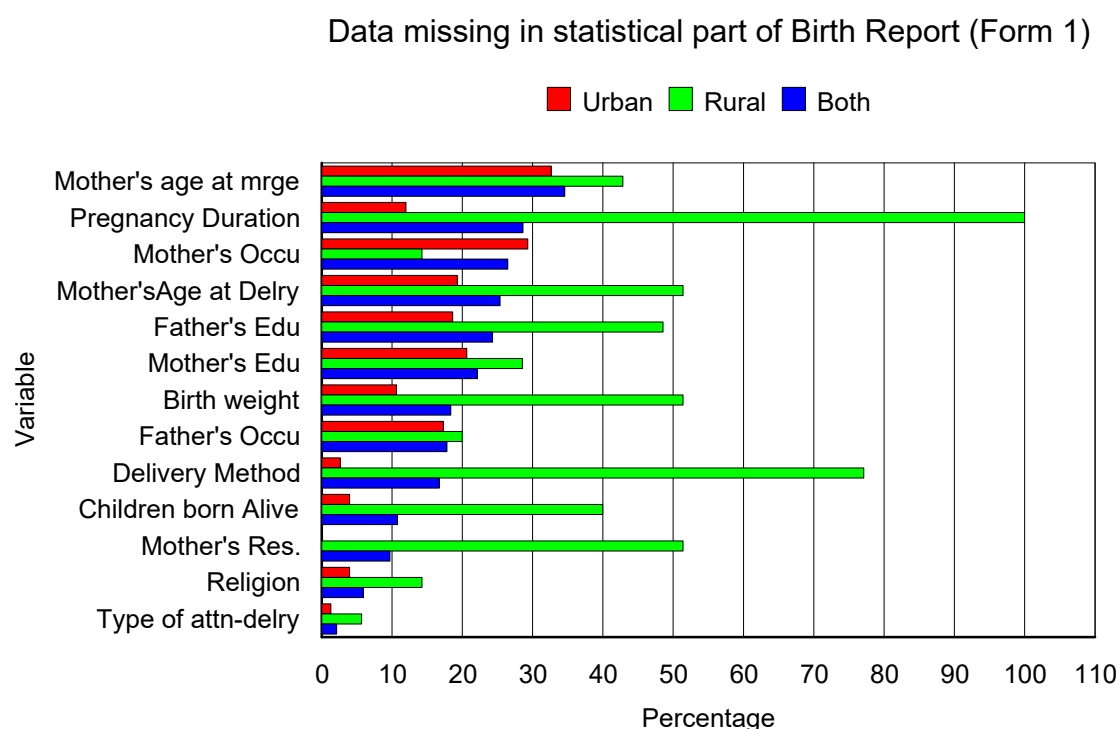


Fig 8

Similarly, the data for key variables for the death events like date of death (1.15%), Sex of the deceased (0.38%), place of death (2.68%), address at the time of death (12.26%) are missed in legal part (See fig 9). In respect of statistical parts of the death events, the data for most of the key variables is missed as seen in fig 10. The data is missing for the variables like, type of medical attention at the time of death (40%) and cause of death (15.9). The data is also missed for the habits like smoking (60), chew tobacco (62.05%), chew including pan

masala (63.08%) and drink alcohol (65.13%) which are required to estimate their impact on the cause of death. In respect of the variables in death registration also, the missing data is more in rural areas then in urban areas. The supporting tables for the missing data for all the above four categories are given in Annex 13 to 16.

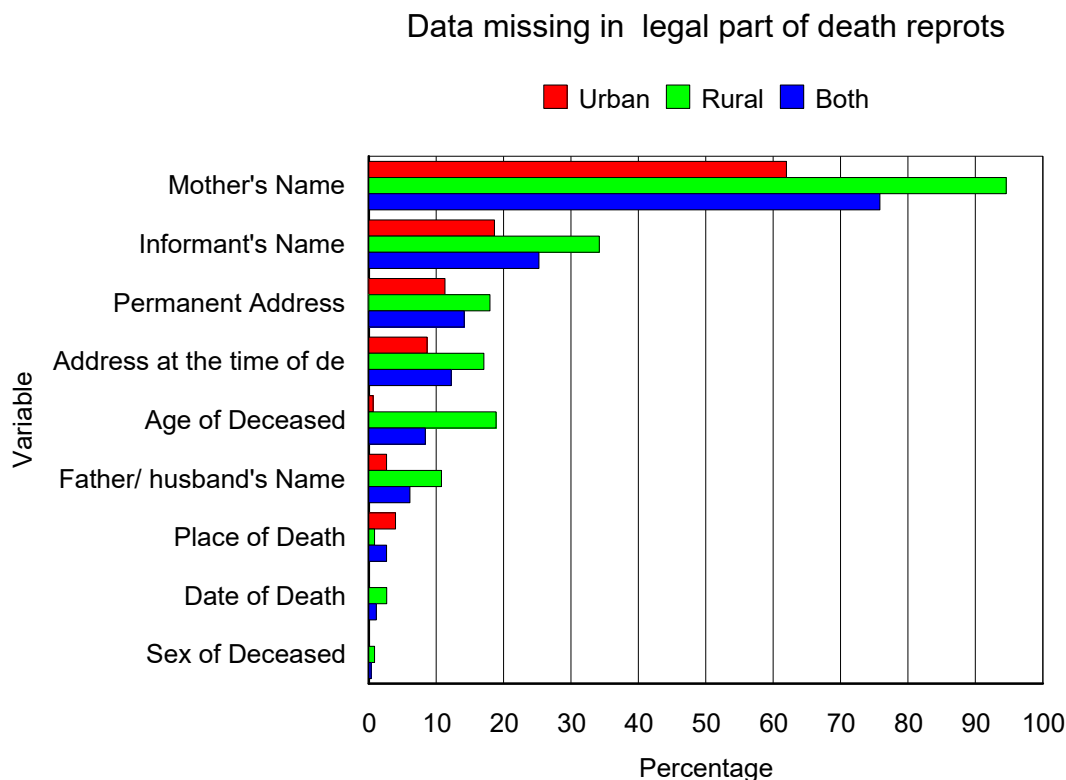


Fig 9

Data missing in statistical part of death report (Form 2)

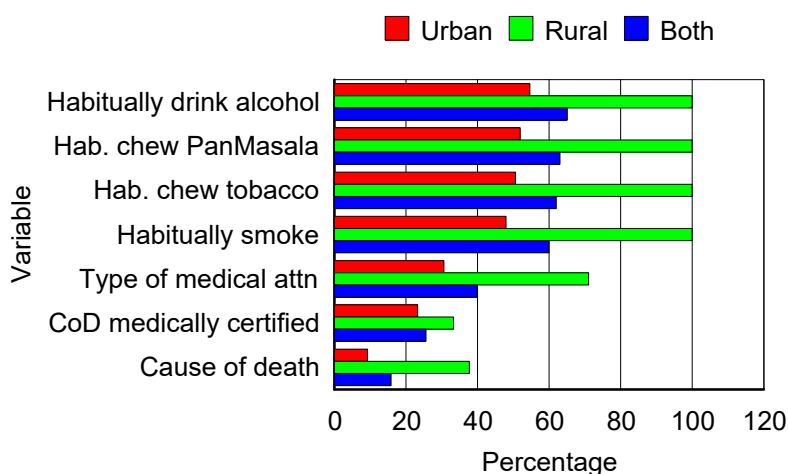


Fig 10

Ill defined categories:

On scrutiny of the annual reports for the years from 1998 to 2009 on cause of death, there is no provision made for the ill defined categories. On interaction with the MCCD authorities, the feedback was that, if at all there is any ill defined cause of death received from the health care institutions, it is being corrected by the head of the MCCD who is also the medical doctor and expert in defining and coding the cause of death. This might be carried out on interaction with the certifier of CoD. However, there is no documentation on this practice.

B Relevance:

1. Routine Tabulations:

VSD is generating the tables on live births by place of occurrence and sex of the child both for urban and rural areas for the administrative divisions like state, district and the cities with more than one lakh population as recommended by the United Nations. VSD is also attending on the tabulation by age of the mother and birth order as per the recommendation of UN by place of occurrence but not by residence of the mother. But VSD is not generating the tables that are recommended by UN like the live births by month of occurrence, place of usual residence of the mother, occupation and educational attainment, type of attention at birth etc. The knowledge about the month of occurrence of live births provides information required to establish time series and seasonal patterns important for short term forecasting, for vaccination and immunisation programmes. The tabulation of live births by age of the mother with birth order, occupation and educational attainment provides information on the socio - economic status of the family necessary for social policy purposes and family planning in particular and it allows for the study of differentials in age fertility rates by education at both the national and sub national levels.

The UN has recommended to generate the table on deaths by 5 year age groups and also to collect the age precisely at the time of death other than infants in such way to permit classification into age groups as recommended in the table for calculation of complete life tables. UN also recommends to generate the tables both by place of occurrence and place of residence for each sex which is useful for administrative purposes and for interpreting patterns of mortality and the distribution of medical facilities. But VSD is generating with 10 year age group as per the place of occurrence. The comparison with UN recommendations is given in table 15. Though the data on usual residence is being collected, it is not being used for generation of tables.

Table 15: Tabulation plan by age groups for deaths as recommended by UN and as followed by VSD of Andhra Pradesh.

As recommended by United Nations as per the place of usual residence		As tabulated by VSD as per the place of occurrence from 1998 to 2008
Under 1 yr	5-9	Below 1 yr
1	10-14	1-4
2	15-19	5-14
3	20-24	15-24
4	25-29	25-34

As recommended by United Nations as per the place of usual residence		As tabulated by VSD as per the place of occurrence from 1998 to 2008
1-4	30-34	35-44
5	35-39	45-54
6	55-64
7	95-99	65-69
8	100 and over	70 yrs and above
9	Not stated	Age not stated.

1. United Nations recommended to generate this table by place of usual residence of the deceased and also place of occurrence for male, female, urban and rural.
2. VSD is generating the table as per the place of occurrence for male, female, urban and rural separately as recommended by UN.

United Nations has recommended to generate the tables for Infant deaths by age and sex both for urban and rural areas. VSD tabulated the infant death for the year 1998 only . After 1998, they stopped tabulating the infant deaths by age group as shown in the table-16. This table gives data used to estimate the level and patterns of infant deaths by sex, that is deaths occurring before one year of age, and to calculate infant mortality rates. The infant mortality rate is an important indicator of the health of infants and is closely related to such factors as maternal health, quality and access to medical care, socio - economic conditions and public health practices. Statistics on infant deaths, classified by the place of occurrence, allow the study of geographical distribution of infant deaths, while information on the place of residence of the mother reflects social or environmental factors that could explain some disparities in infant deaths. The tabulation of infant deaths by month of occurrence is useful for analytic purposes, such as finding seasonal patterns in the distribution of infant deaths, as well as for monitoring purposes. These statistics are also useful for planning medical and public health facilities and child health services. However, VSD is collecting the data sex wise and age with below one year for urban and rural and calculating the infant mortality rates. But it is not being tabulated by specific age in accordance with WHO recommendations. The impact of biological versus environmental factors can be seen in the proportion of infants who die shortly after birth say less than a week or less than a month compared with those who survive the first month of life but die before attaining one year of age. The data are essential for the calculation of such key public health measures as the perinatal mortality rate, the neonatal mortality rate and infant mortality rate.

Table 16: Tabulation plan by age groups for Infant Deaths as recommended by UN and as followed by VSD of Andhra Pradesh.

As recommended by United Nations	Age group	
	1998	As tabulated by VSD 1999 to 2008
Under 7 days	Under one week	Not tabulated
7 to 27 days	1week to 1 month	Not tabulated
28 days to under 1 year	1 month but below 3 months	Not tabulated
Not stated	3 months but below 6 months	Not tabulated
	6 months but below 12 months	Not tabulated

United Nations recommended to generate this table by month of occurrence, by usual

residence and place of occurrence and for males, females, urban and rural separately.

United Nations has recommended to generate the tables on maternal deaths by age, cause of death and place of usual residence. VSD tabulated the details of maternal deaths by five year age groups for 1998 and 1999 only for urban areas and not as per cause of death. Afterwards they stopped tabulating age group wise. However while preparing the annual report on MCCD, it is being tabulated for the 10 year age groups for the following causes of deaths in accordance with the international classification of diseases related to pregnancy or aggravated by the pregnancy or its management except for accidental or incidental causes as follows. The annual reports on general vital statistics and Cause of death (MCCD) does not provide the estimation of maternal mortality rate. It simply provides the maternal deaths.

1. Pregnancy with obstructive out come
 - a. Spontaneous abortion
 - b. Medical abortion
 - c. Other pregnancies with abortive outcome
2. Other direct obstetric deaths
 - a. Odema, proteinuria and hypertensive disorders in pregnancy, child birth and the puerperium
 - b. Infections of genitourinary tract in pregnancy
 - c. Obstructed labor
 - d. Complications predominantly related to the puerperium
 - e. Other complications of pregnancy and delivery
- 3 Other obstetric conditions, not elsewhere classified
 - a. Indirect obstetric deaths
 - b. All other obstetric conditions, not elsewhere classified.

2 Small area statistics:

The tabulation covering general vital statistics is being done at the state level, which is disaggregated upto distinct level and for one of the indicator it is for the towns having more than one lakh population. The details are given in the table-17. In respect of cause of death, it is being tabulated sex wise and 10 year age group that too only for the state level with ICD 10th version. This is not being disaggregated to district level.

Table 17: Tabulation as per the Annual Report on Vital Statistics

Table#	Administrative divisions	Tabulation plans
1	District and State level both for urban and rural	Receipt position of monthly returns from the registration offices.
2	District and State level both for urban and rural	Sex wise number of live births, deaths, infant deaths, maternal deaths and still births
3	District and State level both for urban and rural	Estimates of birth rates, death rates and infant mortality rates
4	District and State level	Live births by 5 year age group of the mother and birth order
5	District and State level	Deaths by 5 year age groups and sex

6	Cities with population of one lakh and above	Sex wise number of live births, deaths, infant deaths, maternal deaths and still births. (For still births sex is not available).
7	District and State level	Number of births, deaths and infant deaths by place of usual residence. Here the usual residence is categorized as within the state and other states.

C. Comparability:

Checks on overall levels of fertility and mortality derived from the vital statistics data are to be undertaken by calculating rates and comparing these to earlier time series mostly at state level and annual reports should be released to that effect. The VSD is estimating the fertility and mortality rates and sends the annual report to the Registrar general. See Annex 17, where in the details were given comparing fertility and mortality rates as per CRS and SRS since 1953 to 2009 (the SRS data is available from the year 1970). The Birth rates as per CRS was around 25 to 29 during 1953 to 1956. From 1957 to 1970, the birth rates were steady around 16 to 19. From 1971 to 1980, again it was increased from 20 to 24. Then suddenly dropped to around 13 in 1981 -1982. From 1984 to 1999, the birth rates are steady as it was around 8 to 9. From 2000 to 2009, the birth rates are around 11 to 17. In respect of birth rates as per SRS, it was 35.4 in 1970 and marginally decreased year by year and at 2009, it was 18.3. The birth rates as per CRS and SRS are plotted in a scatter diagram (Fig 11) to know the relationship and also constructed the Karl Pearson’s Correlation Coefficient as 0.47. It is found that the relationship is very weak and we can say there is no correlation.

Similarly, the death rates as per CRS was analysed. From 1953 to 1958, the birth rates were around 10 to 16. But from 1959 to 1980, the birth rates were reduced and steady around 6 to 9. Then it was almost stable around 4 from the year 1981 to 1983. From 1984, it was dropped further i.e around 2 to 2.9 upto 1997. From 2000 on wards, the birth rates are around 5 to 6.63. In respect of death rates as per SRS, it was around 16 in 1970 and marginally reduced year by year and it was 7.6 by the year 2009. Here also the death rates as per CRS and SRS were plotted in a scatter diagram (Fig 12) and it also shows that, there is no relationship between the two estimates as the calculated Karl Pearson’s Correlation Coefficient is 0.36 which is very weak.

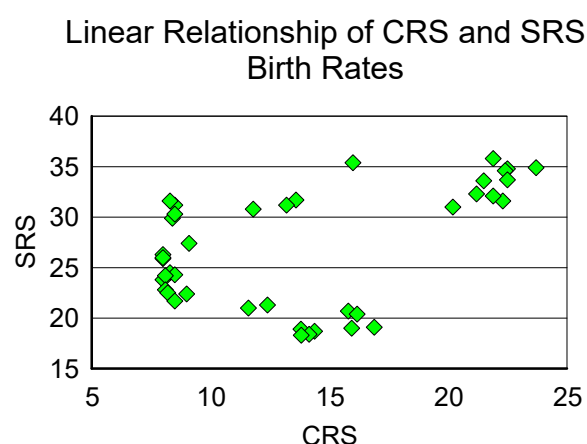


Fig 11

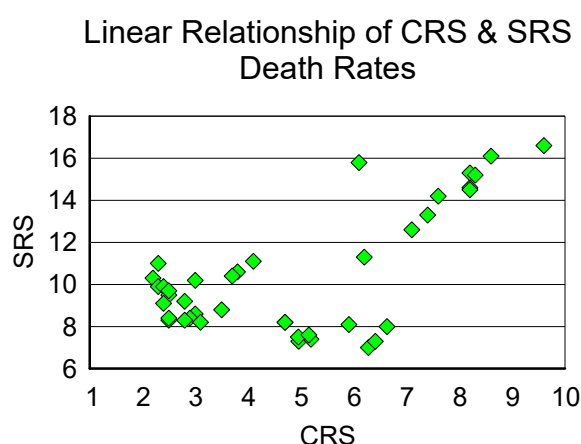


Fig 12

The Infant Mortality Rate was also analysed which were estimated from the data of CRS and SRS. The IMR as per CRS was 129 in 1953. Then marginally, the rates were decreased and it was 5.7 in 2005. Then dropped to 3.5 in 2006 and again increased and it is

8.8 in 2009. In respect of SRS, it was 113 in 1970 and increased to 117 in the year 1978. Then year by year it was decreased and it is 49 in 2009. These values were also plotted in a scatter diagram (Fig 13) and it shows that there is strong relationship between the two estimates and the Karl Pearson's Correlation Coefficient is 0.95.

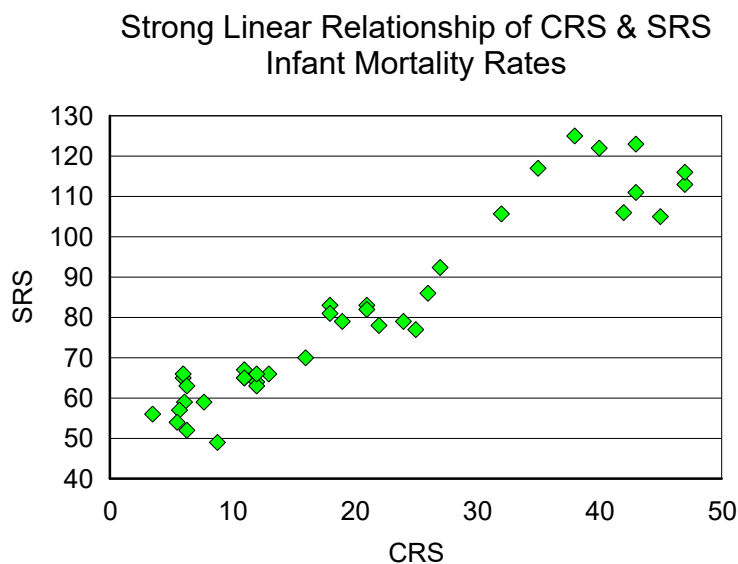


Fig 13

There is no report/document on trend analysis available at VSD or on variations. Further, while releasing the annual reports, it is not being compared with the rates estimated from other sources like Sample Registration System (SRS). However, the Registrar General consolidates all the reports received from the states and union territories, compares with Sample Registration System (SRS) and then releases annual reports. When compared to SRS rates, the CRS rates are low in respect of birth and death rates, and very very low in respect of infant mortality rates. This scenario causes concern and leads to conclusion of under reporting of events in the civil registration system which may happen either due to non reporting of the events for registration or due to non transmission of statistical parts of the vital events to the VSD or both which need to be looked into seriously. However, there is relationship between the CRS and SRS estimates for infant mortality as the CRS increases, the SRS also found to be increased and hence, the CRS estimate can be used for trend analysis for planning various programmes.

The cause of death statistics is being compiled by cause, age, sex, as per the ICD 10th version. The development of this report is more or less stabilised in VSD and being released every year. The tabulation format is also aligned with UN recommended classification.

Table 18 has been prepared for the leading causes of death. It is observed that, the pulmonary circulation and other forms of heart disease is the leading cause of death as per the annual report for the year 2009. There is large variations year by year and it is alarming in 2009 as it reached around 44% both in males and females. Next leading disease is Ischaemic heart diseases, however, it is also in decreasing trend year by year. Next leading cause of death is due to certain conditions originating in the perinatal period. However, Tuberculosis and hypertensive cases are also in decreasing trend. Cerebrovascular disease is in control as there is no much variation year to year. We couldn't find any analysis report on the causes of

death in VSD which throws light on the trends of certain diseases which are leading in the state. The MCCD division in VSD needs to be strengthened with the skills on various techniques for analysing the causes of death data.

Table 18: Trends on leading causes of death

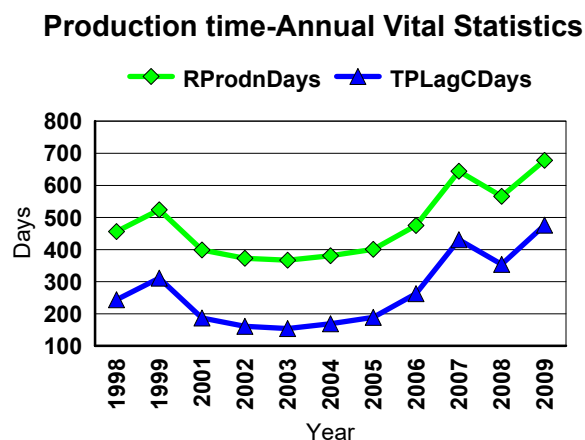
Cause of Death	Sex	2005		2006		2007		2008		2009	
		#	%	#	%	#	%	#	%	#	%
Diseases of the pulmonary circulation and other forms of heart disease	M	7617	22.09	5218	13.95	3220	8.21	4418	10.92	19324	44.45
	F	4048	18.56	2862	13.45	1747	7.59	2463	10.59	11302	44.49
Ischaemic heart diseases (I20 - I25)	M	3040	8.82	4034	10.78	2962	7.55	2385	5.90	1770	4.07
	F	1289	5.91	1758	8.26	1370	5.95	1109	4.77	960	3.78
Certain conditions originating in the perinatal period (P00 - P96)	M	1352	3.92	1714	4.58	2213	5.64	1846	4.56	1513	3.48
	F	880	4.03	1324	6.22	1564	6.80	1371	5.89	1067	4.20
Cerebrovascular diseases (I60 -I69)	M	769	2.23	1767	4.72	1805	4.60	1446	3.58	1540	3.54
	F	406	1.86	877	4.12	908	3.95	777	3.34	790	3.11
Tuberculosis (A15-A19)	M	1952	5.66	1695	4.53	1427	3.64	1359	3.36	1071	2.46
	F	809	3.71	606	2.85	557	2.42	468	2.01	411	1.62
Hypertensive diseases (I10 - I15)	M	2467	7.15	3473	9.28	1743	4.44	1831	4.53	982	2.26
	F	1490	6.83	1805	8.48	1033	4.49	993	4.27	551	2.17
Total for all the above diseases	M	34482	49.87	37416	47.84	39230	34.08	40447	32.85	43477	60.26
	F	21816	40.90	21279	43.39	23009	31.20	23267	30.86	25402	59.37

D Timeliness:

Timeliness is one of the quality criteria that users rate most highly. The lower the geographical level, the more critical it is to have data that are up-to-date. Data release dates are important both for producers and users. Keeping to release dates allows users to plan their work around availability of vital statistics.

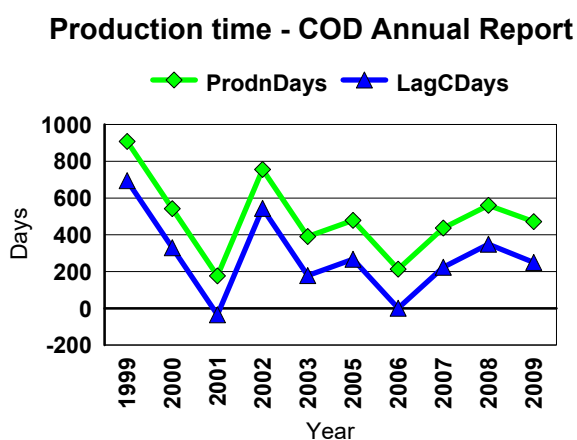
The production time for preparation of the Annual report on vital statistics is defined as the days elapsed from the last date of the period covered by the statistical report. In this case, the last date is 31st December of the reporting period. The production time was estimated for the years from 1998 to 2009. See the Fig 14. For the year 1998, it took 456 days to prepare the annual report. For 1999, it has increased to 524 days. For the years from 2001 to 2005, it took around 400 days. Again it increased to 475 in 2006, 644 in 2007 and 678 in 2009. The mean time for production of annual vital statistics from the end of reporting period is 479 days and Standard Deviation is 106 days. Similarly, the lag time is defined as the days elapsed from the administratively specified cutoff date for the production of annual report. In this case the cutoff date is 31st July of the next year to the reporting period. The trend in report preparation is similar as explained above. For the year 1998, it took 244 days and for 1999 it took 311 days. From 2001 to 2005 the lag days for report preparation is in between 154 to 169 days. For the year 2006 onwards, again it has increased year by year and

in 2009 it is 476 days. The mean lag days for preparation of annual report is 267 days and the standard deviation is 107 days.



Production Time = Days elapsed from the last date of the period covered by the statistical report.
Lag Time = Days elapsed from the administratively specified cutoff date for the production of statistical report

Fig 14



Production Time = Days elapsed from the last date of the period covered by the statistical report.
Lag Time = Days elapsed from the administratively specified cutoff date for the production of statistical report

Fig 15

In respect of Cause of Death (CoD) report, it took 908 days for the year 1999 to prepare the annual report from the end of the reporting period (Fig 15). Then it decreased to 542 days for the year 2000 and further decreased to 177 days for the year 2001. Afterwards, again it was increased to 756 days for the year 2002. Then it took between 213 to 561 days for the rest of the years. The mean production time from the end of the reporting period for report preparation is 494 days and the standard deviation is 210 days. Similarly the lag period is estimated for preparation of the annual report on CoD. The report was prepared within the cutoff date for the years 2001 and 2006. For the rest of the years, it took in between 178 to 695 days. The mean time for production of CoD Annual Report from the end of the cut off date is 280 days and the standard deviation is 210 days.

The monthly reports need to be sent by 5th of the next month for the events occurred in the previous month by the registration offices. The lag time in days have been estimated for sending the monthly reports in all the sampled in municipalities and mandals for the months where data is available for the period from 2000 to 2010. The table-19 gives the clear picture about the lag time in each municipality and madal. The mean lag days is ranging from 45 days in Madanapalle to 558 days in Wanaparthy municipalities. For all municipalities in urban, the mean lag days is 238 and standard deviation is 233. In rural areas, the mean lag days in sending the monthly report is 405 and the standard deviation is 327. This picture of delay in furnishing the monthly reports is impacting the compilation at VSD. Lot of persuasion is required from all the supervising officers to ensure timely furnishing of the monthly reports. The regular defaulting registration offices need to pulled up by the district registrar and continuously monitored till they are regular in furnishing the monthly reports along with the statistical parts. The detailed tables municipality wise and mandal wise are given in Annex from 18 to 29.

Table 19: Mean lag days in furnishing monthly statistical returns and standard deviation

Urban / Rural	Number of months data available (n)	Lag days	
		Mean	SD
Urban - Municipalities			
Jammalamadugu	50	110	76
Madanapalle	43	45	55
Mangalagiri	51	158	155
Nirmal	12	422	105
Venkatagiri	26	269	207
Wanaparthy	36	558	255
Total Urban	218	238	233
Rural - Mandals			
Vjakoaroor	24	391	211
Gudivada	56	543	354
Bhodan	27	66	40
Mudigonda	59	435	303
Total - Rural	166	405	327

E Accessibility:

Data access, dissemination and use:

To be useful for public health and population - planning needs, data at the individual level need to be aggregated in a way that maximises their public health relevance. In countries with compulsory and universal recording of vital events, the national vital statistics system should be able to provide annual data showing frequency distributions for births and deaths and cause of death, geographical differentials for the most important characteristics, and time series showing the major trends, at least over the past decade or two. However, the full utility of vital statistics will only become clear to government planners if they are compiled and presented in ways that are understandable to non - statisticians. Policy makers are constantly searching for evidence that can be incorporated into decision making processes about population health priorities.

Media:

Though the Registrar General prescribed 53 tables, state VSD is releasing only 7 tables in the shape of annual report (See Table-17). The cause of death is being tabulated with ICD 10th version and released annually separately. Except the above two annual reports, there are no other formats for data releasing.

Metadata:

Official vital statistics should be published annually by a trustworthy government source. The correct use and understanding of the data is dependent upon supplying

information about the data (meta data) along with the data themselves. These meta data ensure that the data are interpreted appropriately by the end users. The annual report being released every year by the Chief Registrar doesn't contain any concepts, definitions, glossary and other details on the variables being covered. On interaction with VSD and MCCD staff, there is no proper documentation available on the data entry, tabulation and estimation procedures. It is being done in a routine way. The staff couldn't produce any such supporting document for meta data. Overall, we can say the quality of documentation is not that satisfactory.

User service:

There is no dedicated or nominated person for extending the user service. We need to approach the Director of Health and then the Dy Director VSD initially. On their acceptance, the other staff will give access to discuss for any requirement. In general the response will be good if the requirement is readily available. Otherwise, it takes long time to collect the data. Mostly, VSD got only the annual reports which they can immediately respond and furnish. For others, it is not that responsive.

The main users of the vital statistics within Govt are, health department, health program implementation authorities. The reports will be sent to Registrar General of India who consolidates and publishes. The users of non govt. are mostly researchers and health program implementing agencies. The data is available with VSD both in printed form and also electronic form. However, they are keeping many versions of the electronic form and unless compares with the print form, we cannot take it as an official copy. VSD is not publishing or making available to the public, the annual report on vital statistics. They are preparing the annual report and simply sending to the Registrar General. While sending to Registrar General, copies are being marked to the Special Chief Secretary, HM&FW Dept, GoAP, Director of Census Operations, Hyderabad, and Director, Directorate of Economics and statistics. They are not keeping additional copies for distribution to users. We verified at the Directorate of Economics and Statistics for the copy, but not able to trace for any year that received from the Director of Health. In respect of MCCD, the copy is being marked to Directorate of Census Operations located in Hyderabad.

The above reports are not being sent to the Universities and health program implementing agencies. Almost there is no data user group. The current data user group is restricted only to above four departments. No efforts to expand the data user groups. It is important to try and get feedback from users about their perceptions of the utility and the quality of vital statistics. The principal data users also should be involved in determining the most appropriate cross tabulations and regional breakup of the vital statistics data which are relevant to their needs. Further, the data and annual report may be made available in print, Pdf format, CD/DVDs and website. Every effort should be made to ensure that, the data is available to users at a minimal cost.

The Registrar General periodically publishes the data for the nation which includes the details of Andhra Pradesh. Recently in Jan 2009, they released the book "Vital statistics of India based on the civil registration system - special report 1996-2001". They also mentioned that another consolidated report for the period 2002-2005 was released. This report covers the information received from the states and the data covers both state and district level. However the definitions and concepts were not explained in the above publication like in SRS bulletins. There is a need to build analytical capacity among the staff

of VSD who collects, compiles and process the data to perform basic analysis of the data to help them better understand the value and purpose of the data which they collect

The feedback from the VSD staff is that, they are not getting any requests from non govt agencies for the data. It is also observed that, mostly the users including health department are dependent on the results of SRS for comparison, evaluation and policy formulation. They feel that the Vital Statistics derived from Civil Registration System is not reliable and not routinely used for policy and programme purposes

VI. Systemic Issues:

1 Status of human resources & training in the sample units:

In the selected municipalities, mandals and panchayats for the study, 12 are working in municipalities and the rest 12 are working in mandals and panchayats for civil registration and vital statistics system. Thus totally 24 persons were canvassed with civil registration functionary schedule. Among this, 21 are males and 3 are females. 23 are married. 3 are in the age group of below 30 years, 8 are in 31-40 years, another 8 are in 41-50 years and 5 are above 50 years. Among these persons, 13 are graduates, 8 are with intermediate qualification and rest 3 are qualified less than intermediate. 20 are working on regular appointment and 4 are on contract basis. 3 personnel are having experience of one year in civil registration, 2 are having 2 years and the rest 19 are having 3 years and above experience in civil registration. The personnel working with the designations are as follows.

Table 20 :Personnel working in the sampled registration units

Sl	Designation	Urban		Rural	Total
		Municipalities	Mandals	Panchayats	
1	Assistant Statistical Officer	0	4	0	4
2	Sanitary Inspector	3	0	0	3
3	Panchayat Secretary	0	0	5	5
4	Jr&Senior Assistant	0	1	0	1
5	EO(PRD)	0	1	0	1
6	Health Assistant	3	0	0	3
7	Birth and Death Assistant	1	0	0	1
8	Sr. Assistant (to Sanitary Inspector)	1	0	0	1
9	Public Health Worker	1	0	0	1
10	Asst in Birth and death section	1	0	0	1
11	Asst to Panchayat Secretary	0	0	1	1
12	Bill Collector	2	0	0	2
Total		12	6	6	24

Among 24, only 7 were received training and the rest 17 are not trained. The training was attended by these 7 persons in different spells. 5 persons received the training only once. 1 person received twice and one received the training more than 4 times. Generally, the

training venues will be the offices of DMHO, MRO, MPDO, Zilla Parishad, Sub-Collector, EPTRI, Regional Center for Urban and Environment studies in Osmania University.

The un trained staff are more in number and attending the duties of civil registration and statistical part of the system. The skills and knowledge on CRS are largely acquired on the job by the untrained staff. Particularly in smaller offices, most of the registrars have acquired knowledge only on-the job training. The practice being followed by VSD is that, they will send the training requirement to the representative of Registrar General located in Hyderabad i.e Director of Census Operations (DCO). Depending on the budget, DCO will release some amount which will be just sufficient to impart training for the staff working in three to five districts per annum. Similar is the case with the training on MCCD. In this way, to impart training for all the staff in the state, it may take four to five years. The number trained and sources of funding for the last five years is given in the Table-21. The details of training imparted by VSD in the year 2010-11 is given in the Annex 30 to 32 both for Vital Statistics and MCCD.

Table 21: Training and source of funding

Year	# Registration functionaries attended on CRS	Funding source	# Doctors attended on MCCD	Funding source
2006-07	4,387	UNICEF	1,347	RGI
2007-08	984	RGI	1,424	RGI
2008-09	1,781	RGI	1,513	RGI
2009-10	1,320	RGI	711	RGI
2010-11	1,782	RGI	1,699	RGI

Further, the observations of the investigators and feedback from the CRS staff on training is as follows.

- 1 The staff needs training on civil registration system atleast yearly once.
- 2 Compulsory training should be given whenever there is change in the birth and death registration process, formats, instructions, rules, regulations etc.,.
- 3 One day training is not sufficient and generally the training on CRS is not that effective.

a. Job function in sample units and supervision

Of the 24, only 10 responded that civil registration is a primary job for them and for rest 14, the ivil registration is not a primary job for them (Table-22).

Table 22: Number of staff for whom the Civil Registration as primary / secondary job and priority being given by them

Primary / Secondary Job with priority	Urban	Rural	Both	
			#	%
Primary / Secondary Job				
Primary	8	2	10	41.67
Secondary	4	10	14	58.33
Priority for civil registration by primary job holders				
High	7	2	9	90.00

Table 22: Number of staff for whom the Civil Registration as primary / secondary job and priority being given by them

Primary / Secondary Job with priority	Urban	Rural	Both	
			#	%
Medium	1	0	1	10.00
Low	0	0	0	0.00
Priority for civil registration by secondary job holders				
High	2	5	7	50.00
Medium	2	4	6	42.86
Low	0	1	1	7.14

9 out of 10 whose primary function is CRS have given high priority for civil registration. But in case of personnel whose primary job is not the civil registration, 7 out of 14 felt high priority, 6 felt medium priority and one has given low priority.

Table-23 shows the details of additional responsibilities being attended by the primary job holders and the original responsibilities of the secondary job holders of CRS. The responsibilities, the CRS staff are attending other than civil registration are many and it impacts the timely registration and reporting, thereby quality may suffer. The duties and roles of CRS staff for registration of births and deaths is given in Annex 33. All the persons whose primary job is CRS are attending daily, where as only 5 persons out of 14 whose primary job is not CRS are attending daily, one person is working one day in a week and another person is working for two days in a week. All others are attending CRS job not even once a week. 7 persons expressed that, the time is adequate for civil registration whose primary job is CRS. 7 persons in rural areas have told that the time they are spending on CRS is adequate, though they are working once in a week for civil registration. 3 persons in urban areas whose primary job is CRS and 6 in rural areas have told that they are keeping aside the CRS work to manage other responsibilities. The details are given in Annex 34.

Table 23: Duties and responsibilities of Primary and secondary job holders of CRS

Additional duties being attended by the primary job holders	Primary responsibilities being attended by the secondary job holders.	
Sanitation Work	Sanitation Work	Individual Survey
Property Tax Collection	Property Tax Collection	Crop cutting Experiments
Water Bill collection	Water Tax Collection	Issue of Cast Income certificates
Public Health Worker	Public Health	Preparation of seasonal conditions report
Dealing with Pension	Distribution Of pension	National Agricultural Insurance Statistics
Area Development	Voter List Preparation	Timely Reporting of Agricultural Statistics
All panchayat aspects	Maintenance Muster Rolls	All bills preparation
Maintenance of accounts and Audits	All other statistical Data	Water Supply
Pulse polio program	Agriculture Statistics	Office Maintenance

Table 23: Duties and responsibilities of Primary and secondary job holders of CRS

Additional duties being attended by the primary job holders	Primary responsibilities being attended by the secondary job holders.	
Danger and Offense Trades list maintenance	Rainfall Statistics	Maintenance of Village Infrastructure
Rachabanda Programme	Census	Govt. Development Programmes
Issue of Demand Notice	Demand Fixation	Attending to Protected Water Supply Schemes
	Individual Survey	Socio - Economic Survey

The feedback from the CRS staff and the observations of the field investigators are as follows.

1. Full time birth and death registration staff should be placed to avoid delay in birth and death registration and periodical reporting. The sub - registrars of births and deaths should not be given other responsibilities.
2. Provision should be made for one subordinate to panchayat secretary to assist in birth and death registration and reporting and to be available continuously in the panchayat office.
3. Coordination in rural areas becoming very difficult. The panchayat secretary who is the registrar for births and deaths is under administrative control of MPDO and whereas he has to report technically to MRO who is the mandal registrar. But practically, the panchayat Secretary is not reporting to MRO and MRO also not bothered to review the CRS system in the present circumstances. Ultimately the District Registrar who is also DM&HO is depending on the PHC staff for getting reports from the panchayat Secretary. The feedback from the PHC staff like Medical Officer, ANM, LD Computer and the statistical staff at DM&HO staff and the state level VSD is that, PHC MO is an appropriate authority to be appointed as Mandal Registrar and ANM as the registrar for birth and deaths, so that the coordination and ensuring the periodical reports will be made easy as it will come under single line of command with in the health department.

The staff in the sample units gave responses about the authorities being reviewed which are as given in Annex 35 for urban and rural areas which shows that, there is more focus in urban areas i.e in municipalities then the rural areas. Further, the CRS staff gave the feedback that, 74% of the supervisors and higher authorities are giving high priority for the civil registration work during their inspection and about 22% of them are giving medium priority (Table-24).

Table 24: Priority given by the Supervisory and higher authorities on CRS

Kind of priority with the supervisors	No of responses			%
	Urban	Rural	Both	
High	9	8	17	73.91
Medium	3	2	5	21.74
Low	0	1	1	4.35

However, as seen from the Table-25, the visits by the higher authorities, inspections, calls and communications happened mostly in urban areas. The focus on rural areas is far below which is a concern as this associates with poor registration and reporting. This issue need to be reviewed in detail and a strategic plan need to be prepared to improve the civil registration system.

Table 25: Details of Last reviews, inspections, calls and communications made by the higher authorities at the sampled units.

Sample unit	Visit		Inspection		Telephone call		Communication	
	Date	Authority	Date	Authority	Date	Authority	Date	Authority
Municipalities								
Wanaparthy	Not visited		01/06/2009 01/01/2010	VSD DM&HO	No call		01/09/2009	VSD
Mangalagiri	04/02/2011	Reg.Dir.	25/11/2010 14/02/2011	DM&HO RD	No call		No com.	
Madanapalle	Not visited		01/02/2010	DySO	21/02/2011	DSO		
Jammalamadugu	Dec 2010	Mpl. Commr.	01/09/2010	ASO from DM&HO	01/08/2010	RDO	No com.	
Nirmal	2008		13/05/2008	DM&HO	No call		Jan 2010	DM&HO
Venkatagiri	Jan 2011		01/01/2011	From DH	01/12/2010	From DH		
Mandals								
Rentachintala	Not visited		No inspection		No call		No com.	
Gudiwada	Not visited		No inspection		No call		1996	
Vajrakaroor	Dec 2010	Tahsildar	No inspection		No call		No com.	
Obullavaripalli	14/03/2011		No inspection		14/03/2011	LD Com. from DM&HO	14/03/2011	DM&HO
Bodhan	Not visited		No inspection		No call		No com.	
Mudigonda	2011		No inspection		No call		No com.	
Panchayats								
Paluvoigate	March 2011		No inspection		No call		No com.	
Serivelpur	Nov 2010	MRO	No inspection		No call		No com.	
Chabala	29/12/2010		No inspection		No call		No com.	
Y.Kota	Not visited		10/02/2011	EO(PRD)	No call		10/02/2011	Commr PR
Kopparthy Camp	18/05/2005	MPDO	No inspection		No call		No com.	
Kattakur	13/02/2011	MRO & MPDO	No inspection		No call		No com.	

Wherever it is mentioned as 'not visited', 'no inspection', 'no call', 'no communication', it is as per the information given by the CRS staff during his tenure in that particular office.

Reg.Dir=Regional Director, Mpl.Commr.=Municipal Commissioner, com.=Communication

2. Registration Infrastructure and resources

The status of technical equipment in the sample registration units are given in the Table-26. The municipalities and MRO offices were provided with the telephones, computers and internet. The MPDOs don't have any type of equipment other than the telephone. There is not even a single equipment at panchayats which they can use to improve the civil registration.

Table 26: Status of technical equipment

Equipment	Urban areas - Municipalities	Rural Areas		
		MRO Office	MPDO office	Panchayat
Telephones	Available	Available	Available	Not available
Photocopiers	Not available	Not available	Not available	Not available
Scanners	Not available	Not available	Not available	Not available
Computers	Available	Available	Not available	Not available
Internet	Available	Available	Not available	Not available

Sufficient computing facilities were created at the mandal offices, district offices and municipalities. All information is exchanged both by paper based and electronically. Andhra Pradesh State Wide Area Network (APSWAN) was created to communicate the information electronically from the district to state and vice versa. VISMIS software developed by NIC and made available at VSD, all the municipalities and district offices which enables for entry of vital statistics data into the system, processing, generating the required reports and communicating. The Director of Municipal Administration has facilitated all the municipalities with the E-Suvidha software which enables birth and death registration also. But the above facilities are hardly used by the CRS system. The CRS staff in municipalities are using E-suvidha mostly to search the data for issuing birth and death certificates. Wherever the statistical staff are available at the district or at the municipality, few are entering the data in spread sheet and sends to the VSD by e-mail. Wherever the statistical staff are not available, still the paper based system is followed. However, the state VSD is using VIMIS software to generate few tables with a focus to prepare annual reports.

i. Maintenance of registers in sample units:

The investigators have observed the maintenance of birth and death registers in the selected municipalities from the year 2000 to 2010. About 66 registers were verified for assessing the status of maintenance in respect of availability of registers, following the prescribed format, serial numbering for the events registered, incidence of blank entries, repeated serial numbers etc. All the birth and death registers are available in all the municipalities except one death register in Wanaparthy municipality for the year 2005. In some of the offices, the registrars are maintaining the legal parts of the birth and death reports in the form of binders instead of writing and maintaining in a register. However, for all practical purposes, they are using binders as registers. When verified, 22 are in the form of birth register and 44 are in the form of binders for birth reports. 45 birth registers are with continuous serial number and 21 are with the discontinuous serial number. Further it is observed that there are 295 blank entries in the birth registers and 282 serial numbers are repeated. Similarly, 27 registers are in the form of death register and 38 are in the form of

binders. 52 registers are with continuous serial number and 13 are with discontinuous serial number. Further the registers are having 25 blank entries and 89 serial numbers are repeated.

Randomly, we chosen 190 legal parts of the birth reports to check with the birth registers whether they found entry or not. It is found that 184 were fully matched with the entries in the birth registers and six events were not available in the registers. Similarly, 240 legal parts of death reports were chosen and found that 238 were fully matched, one entry is partly matched and one entry didn't find place in the death registers.

The statistical parts of birth and death reports were checked on the status of transmission to next higher authorities based on the monthly reports. In respect of births, 61% of the reports were transmitted through the monthly reports and 39% of the reports were put on hold. Further, 1828 legal parts were not available for which the statistical parts are available. On the contrary, 3137 statistical parts are missed for which the legal parts are available. Similarly, in case of deaths, 60% of the statistical parts were sent to next higher authorities and 40% of the reports kept on hold. 420 legal parts were missed for which the statistical parts are available. Contrary, 432 statistical parts were missed for which the legal parts are available.

The details about the maintenance of birth and death registers are shown in Annex 36 to 41. The above lapses can be avoided if regular supervision, inspections are conducted including minimum scrutiny of the registers are made.

ii Storage and retrieval of the birth and death registers.

The feedback from the CRS staff in the sample units both in urban and rural areas revealed that, the storage facilities are adequate in 62.5% of the registration units and not adequate in 37.5% of the registration offices. In about 47% of the cases, the timeliness and quality of registration work is affecting due to the lack of almirahs/racks for storage. The forms and stationary is not available in 13.3% of the cases (rural area) , there is no separate section in 13.3% of the cases (urban area) and there is no office facility in for two panchayats which is in rural area. (Table-27)

Table 27: Physical facilities affecting the timeliness and quality of civil registration work

Physical facility	No of responses			
	Urban	Rural	Both	%
Lack of almirahs or racks for storage	3	4	7	46.67
Almirah not in condition	0	1	1	6.67
Stationary and Forms not available	0	2	2	13.33
Need separate section for Birth and death registration	2	0	2	13.33
No office facility and panchayat office is in dilapidated condition	0	2	2	13.33
Office space is not sufficient	0	1	1	6.67
Total	5	10	15	100

All the medical establishments located in the registration area are mandated to report the vital events in the prescribed forms to the registrars in a timely manner. There is shortage of certain forms and due to this the reporting of births and deaths in a timely manner suffers. The status of availability of forms in the study municipalities and panchayats is as in

Table-28. In more than 50% of the cases the forms for reporting cause of death and preparation of summary monthly reports for births, deaths and still births are not available which forms most part of statistical system, thereby the delay occurs in reporting. As a result, the quality of the data suffers which impacts the analysis of important characteristics and evaluation of the health programmes.

Table 28: Availability status of forms in Urban and Rural (Responses in percentage)

Forms	Plenty	Enough	Usually Available	Scarce	Not Available
Birth Report (F1)	18.18	13.64	27.27	22.73	18.18
Death Report (F2)	18.18	18.18	27.27	18.18	18.18
Still Birth Reports (F3)	9.09	13.64	9.09	9.09	59.09
Cause of death (Institutions)(F4)	9.09	13.64	9.09	9.09	59.09
Cause of Death (Non Institutional) (F4A)	0.00	4.55	9.09	0.00	86.36
Birth certificate (F5)	22.73	18.18	31.82	13.64	13.64
Death Certificate (F6)	22.73	18.18	31.82	13.64	13.64
Birth Register (F7)	22.73	18.18	31.82	9.09	18.18
Death Register (F8)	22.73	18.18	31.82	9.09	18.18
Still Birth Register (F9)	18.18	13.64	27.27	9.09	31.82
Non Availability Certificate (F10)	13.64	9.09	22.73	13.64	40.91
Sum.monthly rpt of birth (F11)	4.55	9.09	13.64	18.18	54.55
Sum.monthly rpt of death (F12)	4.55	9.09	13.64	18.18	54.55
Sum.monthly rpt of still birth (F13)	4.55	9.09	13.64	13.64	59.09

F=Form

The field investigators gave the feedback after studying the sample units on the storage and retrieval system of the registers. The registers were systematically arranged in 50% of the municipalities in dedicated location, it was haphazardly in 16% of the municipalities but in dedicated location and in 33% , it was haphazardly stored with other stores (Table-29).

Table 29: Storage Facility for the registers in Municipalities

Sl	Birth Register Storage Facility	Urban		Rural			
		#MPL	%MPL	#Mdls	%Mdls	#Pts	%Pts
1	Systematically arranged in dedicated location	3	50	1	16.67	1	16.67
2	Haphazardly but in dedicated location	1	16.67	2	33.33	1	16.67
3	Systematically arranged along with other stores	0	0	1	16.67	3	50
4	Haphazardly kept with other stores	2	33.33	2	33.33	1	16.67
5	Haphazardly distributed over many places	0	0	0	0	0	0

Total	6	100	6	100	6	100
MPL=Municipalities, Mdls=Mandals, Pts=Panchayats						

In case of mandals, in 50% offices, the records were kept in dedicated locations and 50% with other stores. In panchayats, the registers were kept in dedicated location in 33% of the cases and in 67% of the cases it was kept with other stores. It is easy to retrieval the registers in 67% of the municipalities, in mandals it is 50% and in panchyats it is only 33%. In pacnhayats, it is difficult to retrieve the records as most of them are keeping at their residence and the panchayat secretaries are not regular to the office (Table-30).

Table 30: Status of Retrieval System of registers and related records in sampled units.

SI	Retrieval system	Urban		Rural			
		#MPL	%MPL	#Mandals	%Mandals	#Panchayats	%Panchayats
1	Easy	4	66.67	3	50	2	33.33
2	Not easy	1	16.67	2	33.33	3	50
3	Difficult	1	16.67	1	16.67	1	16.67
4	Most difficult	0	0	0	0	0	0
5	Not retrievable	0	0	0	0	0	0
Total		6	100	6	100	6	100

MPL=Municipalities.

The observations of the investigators and feedback from the CRS staff is as follows.

1. Stationary for births and deaths registration is not being provided in time, hence the registration is not happening at the right time. The staff are forced to go for photocopies of Form-1 (Birth reports) and Form-2 (Death Reports).
2. Need storage facility separately for birth and death registers and binders.
3. Need separate computing facility for birth and death registration
4. Postal stamps need to be supplied for sending reports.

VII.APCRS contribution towards monitoring and evaluation of NRHM goals:

To see a concomitant reduction in IMR / MMR / TFR and to prevent and control communicable and non-communicable diseases are the two major objectives of NRHM. The expected outcomes of the major health indicators under NRHM for Andhra Pradesh by 2012 are:

Infant Mortality Rate (per 1,000 live births)	- <30
Maternal Mortality Rate (per 1,00,000 live births)	- <100
Total Fertility Rate (children per women)	- 2.1
Achieve a cure rate (TB - DOTS) of	- 85%
Reduce Malaria Mortality Rate to	- 60%

Reduce Filaria / Micro Filaria to	- 80%
Promote institutional deliveries to	- 90%

In addition to the above, the following variables are being analysed under NRHM as part of the strategies to improve the health of children, pregnant mothers and adolescent age group.

1. Low Birth Weight
2. Notification of Maternal deaths (through Telegrams and incentive to AWW)
3. Social Audit and Verbal Autopsy of Maternal deaths (Audit cost and workshop)
4. Diarrhoea and Acute Respiratory Infections (ARI) for infant deaths.
5. Adolescent Health: The average Age-at-marriage and the average Age at first-child birth is the contributing factor to high maternal mortality and high infant mortality.

(National Rural Health Mission Andhra Pradesh State Project Implementation Plan Part-A in respect of Reproductive & Child Health – II Project (2005-2010) (September 2005) - Commissioner of Family Welfare Department of Health, Medical & Family Welfare, Government of Andhra Pradesh, Hyderabad,)

Civil Registration System provides the data for most of the above indicators to regularly monitor NRHM programme. The following table gives the data source from the civil registration system for each of the variable and its tabulation status.

Table 31: Data source for NRHM key indicators in civil registration data

Variable	Data Collection form	Source for the variable with description	Tabulation status by VSD, Andhra Pradesh
Infant Mortality Rate	Form 2 - Death report	Age and Cause of Death	Tabulated and estimated.
Maternal Mortality Rate	Form 2 - Death report	Age and Cause of Death	Not tabulated, but the number of maternal deaths is given.
Total Fertility rate	Form 1 - Birth report	Number of Children born alive to the mother so far including this child	Not tabulated, but data is given by the age of the mother and the birth order
Achieve a cure rate of TB - DOTS	Form 2 - Death report	Cause of Death	Tabulated in MCCD Annual Report
Reduce Malaria Mortality rate	Form 2 - Death report	Cause of Death	Tabulated in MCCD Annual Report
Reduce Filaria / Micro Filaria	Form 2 - Death report	Cause of Death	Tabulated in MCCD Annual Report
Promote Institutional deliveries	Form 1 - Birth report	Place of birth - Hospital / Institution Name	Not tabulated
Low Birth Weight	Form 1 - Birth report	Birth Weight in KGs	Not tabulated
Diarrhoea and acute	Form 2 - Death report	Cause of Death	Tabulated in MCCD Annual Report

Respiratory Infections
for Infant deaths

Adolescent Health	Form 1 - Birth report	Age of the mother at the time of marriage, Age of the mother at the time of birth	Not tabulated the age of the mother at the time of marriage.
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The Infant Mortality rate is being estimated and published as part of the Annual Report. Though the number of maternal deaths is being tabulated, the rate has not been estimated and released. Similarly, the total fertility rate was also not estimated and released, but the data on the age of the mother, birth order was given in the annual report. The tabulation is not being done for the variables like birth weight, institutional deliveries and adolescent health, even though the data is being collected in birth report. Age and sex wise data is being collected for the diseases like TB, Malaria, Filariasis and diarrhoea & respiratory infections for infant deaths for which cause of death data was available in about 10.75% of the deaths registered (as per the Annual Report 2009).

But, while developing project implementation plans for NRHM and conducting monitoring & evaluation studies, the health authorities both at state and central level and the users have used the data published from various sources as detailed below:

1. Sample Registration Systems
2. Annual Health Surveys
3. National Family Health Surveys
4. District Level Household Surveys
5. Decennial Census
6. Facility Surveys by IIPHFW
7. Eligible Couple Survey by IIPHFW
8. Monthly Progress Reports from health institutions
9. Center for Population and Development Studies (CPDS)
10. Annual Progress Reports from health institutions
11. Data from Women Development and Child Welfare

As seen from the above, the data source “vital statistics derived from civil registration” does not find place among the users and most probably, the reasons may be the data dissemination, reliability and timely availability though it is continuous recording of vital events. Most of the users are using the SRS estimates for their research, comparison, plan preparation, monitoring and evaluations. Therefore, in the present scenario, we can say that, practically the civil registration system is not contributing much for evaluating the NRHM goals from the perspective of users.

However, when the Karl Pearson’s Coefficient is calculated, it is found that, there is strong correlation between the estimates of CRS and SRS for IMR, hence, it is recommended to use the trends of CRS estimates for all the purposes. Further, if we need the district and sub district level estimates, the only source which can provide data is CRS as the sample size for all the other sources may not be representative to estimate the rates and due to other constraints specific to each source. Hence, it is concluded that, the data for all the key

indicators which are required to measure and evaluate the NRHM goals can be estimated from the vital statistics derived from the civil registration system which is on a continuous basis, including small area statistics like district and sub district level, provided the completeness of registration of vital events is upto the acceptable levels and the estimated rates for the key indicators are made available to the users in a timely manner.

From Project Implementation Plans (PIP) for NRHM, it is found that, there is budgetary provision for the following schemes which can be utilised to improve the civil registration system.

1. Notification of maternal deaths by the Angan Wadi Worker (AWW): Some amount is provisioned for issuing telegram and incentives to notify the maternal deaths. This opportunity may be utilised by the Chief Registrar to motivate the field staff like Angan Wadi worker (AWW) to notify all the deaths in the village for registration which helps to achieve close to 100% completeness of the death registration to get reliable estimates. Similarly for births.
2. Social audit and verbal autopsy of maternal deaths: There is budgetary provision for conducting workshops or training programmes on social audit and verbal autopsy of maternal deaths. It may be worth while to include all other deaths in the agenda, so as to get 100% reports on cause of death reports.
3. Role of panchayat raj institutions (PRIs) in RCH project: While preparing the program implementation plans (PIPs), the role of panchayat raj institutions (PRIs) may be broadened to include civil registration and create awareness of the importance of registration of vital events along with RCH - II project.

VIII.Suggestions:

The following suggestions were received from the CRS staff almost at all levels for improvement of the system.

Table 32: Suggestions by the CRS staff .

Municipal staff	Mandal staff	Panchayat Secretaries	VSD staff
Need separate online system for birth and death registration and issue the certificate.	Coordination between medical staff and panchayat secretary is essential and training also need to be imparted regularly.	Need compulsory training whenever there are changes in the birth and death registration process. Separate storage facilities are required	Vacant posts need to be filled up. Latest technical equipment is required for speedy process of the data.
Need training on civil registration system yearly once.	Birth and death registration is should be transferred to VROs to keep the registration system upto date.	Awareness programmes on CRS need to be conducted in at the village level. Birth and death stationary should be provided in time to register the events in time. We are depended on photocopies for Form 1 and form 2 reports.	Due to lack of man power in the office, the statistical parts are not being entered in time. Need one unique software in the country for birth and death registration system. Collectors are not taking interest in sending communication to MPDOs for submission of monthly returns.

Municipal staff	Mandal staff	Panchayat Secretaries	VSD staff
Need rack for storing records, reports and birth & death registers systematically	Birth certificate forms and death certificate forms and Non Available certificate forms and birth and death stationary should be provided in time.	At Panchayat level one subordinate should be provided to the panchayat secretary. Further, ANM, AWW should compulsorily attend the gram panchayat for furnishing information on birth and death registration Need training programs twice in a year.	
From the hospital birth and death reports should come in time to the municipality for the entering data, but some times they sent reports very lately.	Separate storage facilities should be available	Awareness programs through videos, documentary films to be provided about the importance of the civil registration.	
The person filling the birth and death reports in the hospital should have maximum intermediate qualification to reduce the mistakes and they need to be trained.	Need postal stamps and speed post facility for sending birth and death returns.		
Need dedicated staff for continuous registration of birth and death registration work.	Need minimum contingency amount to incur expenditure on collection of forms, transportation etc.,		
People suggested to mention age and cause of death in the death certificate.	To Conduct a meetings on registration of birth and death at least quarterly once to clarify the doubts		
Need separate computer for birth and death registration.	If it is possible, the registration responsibility may be transferred to Anganwadi teachers for improvement as they are available at the villages itself.		
The sub register in the municipality should not be entrusted with other responsibilities.			

IX. Summary & Conclusions:

A. State of Vital Statistics in Andhra Pradesh:

1. The civil registration service to citizens is provided by respective local bodies, i.e. Municipalities and Corporations in urban areas and Gram Panchayats in Rural areas. In addition, the Mandal Revenue Offices (MROs) in rural areas provide birth and death certification services. In urban areas, intermediate tabulation of vital statistics is done by Municipalities and Corporations. In rural areas, intermediate tabulation is done by MROs and Vital Statistics units of the District Medical and Health Office. State level tabulation, compilation and official release of vital statistics is done by the Vital Statistics Division in the Directorate of Health.
2. All the important characteristics of birth and death events recommended by the United Nations are being covered by Andhra Pradesh which are useful for supporting national policy and program development
3. All of Andhra Pradesh is being covered by Civil Registration System since April 1, 1970 with enactment of Registration of Births and Deaths (RBD) Act 1969. All the registration offices are accessible for citizens both in urban and rural areas. However, it is observed that, in rural areas, some of the registrars i.e. Panchayat Secretaries are keeping the registers at their residences as most of them are handling more than two panchayats, hence the people need to go to their residences for getting the vital events registered.
4. However, the registration of births and deaths is less than complete. (a) Estimated birth registration is 76%. It was 39% in 1998 and gradually improved to 76% in 2009. (b) Estimated death registration is 68%. It was 39% in 1998 and gradually increased to 68% in 2009. Certification of cause of death is being covered only in urban areas to the extent of 10.75 %, but not in rural areas. It is also found that, 21% of the statistical part of birth reports and 19% of the statistical part of death reports were not sent to VSD from the municipalities. Similarly, 11% of the statistical part of birth reports and 14% of the statistical part of death reports were not sent from rural areas to VSD. These unsent reports were missed in tabulation at state level which may result in under registration of births and deaths.
5. In statistical parts of the birth reports, the data for the key variables like mother's residence (9.73%), mother's age at the time of marriage (34.59%), mother's age at the time of delivery (47%), type of attention at delivery (2.16%), method of delivery (16.76%), birth weight (18.38%) and the duration of pregnancy (28.65%) are missing. Similarly, the data for key variables for the death events like date of death (1.15%), sex of the deceased (0.38%), place of death (2.68%), address at the time of death (12.26%) are missing in legal part. In respect of statistical part of the death events, the data for most of the key variables is missing like type of medical attention at the time of death (40%) and cause of death (15.9). The data is also missing for the habits like smoking (60), chewing of tobacco (62.05%), chewing including pan masala (63.08%) and drinking of alcohol (65.13%) which are required to estimate their impact on the cause of death. The missing data is more in rural areas than in urban areas.. The missing data impairs the analysis of the data for key variables of interest.
6. There is no focus on small area statistics. Every district needs to prepare the annual report which is disaggregated upto mandal level and division level. Similarly, the municipalities need to release one annual report covering the tables recommended by the Registrar General.

7. The birth, death and infant mortality rates estimated as per CRS appears to be far below the estimates of SRS. It is just not comparable in case of infant mortality which is very low and is a major concern. This gives the impression that, the CRS estimates may not be reliable and most of the users are using SRS estimates only. When we made a scatter plot and calculated the Karl Pearson's Correlation Coefficient, it is found that, there is no correlation between the estimates of CRS and SRS for birth and death rates. In respect of Infant Mortality Rates, there is perfect and strong correlation between CRS and SRS estimates. As there is positive relationship, whenever CRS estimates increases/decreases, the SRS estimates also increases/decreases in respect of IMR. Hence, we are of the opinion that, the trends of CRS estimates for IMR can be used for planning and evaluation purposes.
8. It is found that, the mean lag days for sending monthly returns from the urban areas is 238 and the mean lag days in rural areas is 405. This is impacting the production of annual report by VSD. For example, the mean time for production of annual vital statistics from the end of reference period is 267 days and the meantime for production of CoD annual report is 280 days. Focus should be on training, visits, inspections, reviews, communication to improve the receipt of monthly reports and reducing the meantime of production of annual reports.
9. The documentation available on CRS is not that qualitative. The concepts, definitions, glossary and other details are not available in the annual reports including the estimation procedures i.e the meta data information is not available. The comparison with national and international estimates are not available. The standard data quality and plausibility checks appear to be not being done.
10. The annual reports are being sent to the Registrar General with copy marked to Special Chief Secretary, HM&FW Dept, Director of Census Operations and Director, Directorate of Economics and Statistics. It is not being sent to the Universities and health program implementing agencies. Almost there is no data user group. The current data user group is restricted only to above four departments. No efforts to expand the data user groups. It is important to try and get feedback from users about their perceptions of the utility and the quality of vital statistics. The principal data users also should be involved in determining the most appropriate cross tabulations and regional breakup of the vital statistics data which are relevant to their needs. Further, the data and annual report may be made available in print, Pdf format, CD/DVDs and website. Every effort should be made to ensure that, the data is available to users at a minimal cost.
11. Very few characteristics like age, sex, locality, birth order, cause of death are being covered for generation of tables to include in the annual reports. In other words, only 7 tables are being generated out of the 53 tables recommended by the Registrar General of India.
12. Practically, the vital statistics derived from the civil registration system is not contributing much for evaluation of NRHM goals and the reason may be the lack of registration completeness, data dissemination, reliability, timely availability etc., in the perspective of users.

A. Systemic Issues & Recommendations:

1. The data on birth registration in rural areas shows that, the pregnant women are preferring to go to nearby urban hospitals to avail the best maternity care. This trend shows the impact of the field/para medical staff on motivating the pregnant women for institutional deliveries as part of maternity and child health care
2. The tables generation and analysis is not being done as per the usual residence of the mother in case of birth and usual residence of the deceased in case of death. This is useful for program planning, evaluation and research in many fields of application such as health education etc. Similarly, the number of deaths as per place of residence is useful for administrative purposes for interpreting the patterns of mortality and distribution of medical facilities.
3. The inter departmental coordination meetings are not being conducted regularly at state level. As a result, there is no forum to solve the critical issues related to civil registration. The coordination meetings at panchayat level are not happening and are not effective in sorting out the discrepancies in birth and death registration events and characteristics.
4. At rural level, there is shortage of panchayat secretaries who are the registrars of births and deaths, hence, they are not regular to the office. At present 3,504 posts are vacant. There is immediate need to fill the vacant posts of Panchayat Secretary.
5. Practically, the panchayat secretary is not reporting to the MRO who is the Mandal Registrar and not submitting the monthly returns. The MPDO who is the controlling authority of the panchayat secretary is not the Mandal Registrar. Hence, there is lot of confusion in rural areas. The District Registrar and his staff need to coordinate with both MRO and MPDO to pursue the civil registration. As a result the completeness of registration of births in rural areas is 38% and deaths is 48% which is a matter of concern. In the present circumstances there are three options to solve this problem
 - i. CRS subject should be transferred to Village Revenue Officers
 - ii. Mandal Parishad Development Officer should be made Mandal Registrar
 - iii. MPHA(M/F) at Sub Center level should be made Sub Registrar and the Medical Officer of PHC should be made Mandal Registrar.
6. The budget for TA/DA, POL, Publicity under the head “Surveys and Statistics” appears to be very low and this impairs the mobility of the statistical staff to conduct inspections , reviews and training. This needs to be increased may be two or three fold. There should be budget exclusively for training to the registrars on registration and reporting and doctors on MCCD. The budget should be sufficient to cover all the staff in all the districts once in a year.
7. Mostly in rural areas, the events occurred outside the panchayat jurisdiction are being registered which causes double registration as it will also be registered at the place of occurrence. i.e the events are counted twice and the estimates for fertility and mortality rates may not be reliable for users.
8. The training being imparted at present is just not sufficient in view of the full coverage of CRS in the state. The Registrars and CRS staff are expecting the training to be imparted atleast yearly once. As per the VSD schedule, the staff in each district will be covered

once in four or five years. For example, most of the rural registrars are not aware of the MCCD forms for both institutional and non institutional deaths.

9. About 43% of the registration staff whose primary job is not civil registration are giving medium priority to the civil registration. They are keeping aside the civil registration work more frequently to attend their primary responsibilities.
10. Most of the supervision authorities are visiting and inspecting only the urban areas i.e municipalities. The inspections in the rural areas are very less.
11. The CRS staff are not using the available technology like Andhra Pradesh State Wide Area Net Work (APSWN) for communication and the software facilitated by the NIC like "VISMIS" for data entry of the vital events and generation of tables.
12. The maintenance of registers at the municipalities need to be inspected by the supervision authorities regularly atleast yearly once, as it was found that there are considerable blank entries in the registers, the serial numbers are discontinuous and some serial numbers are repeated. Further, about 40% of the statistical parts of the birth and death reports were kept on hold without transmitting to the next higher authorities. This type of maintenance gives scope for manipulations and wrong reporting of the number of events.
13. 47% of the staff gave feedback that lack of almirahs / racks for storage of records, registers, forms are affecting the timelines and quality of civil registration work. Similarly, about 36 to 40% of the staff have responded that the Form 1 (birth report), Form 2 (death report) are either not available or scarce, hence they are dependent on photocopying.

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XI. Glossary:

Birth:	Birth means live-birth or still-birth
Death:	Death means the permanent disappearance of all evidence of life at any time after live-birth taken place
Foetal death:	Foetal death means absence of all evidence of life prior to the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of pregnancy
Live-birth:	Live birth means the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such expulsion or extraction, breathes or shows any other evidence of life, and each product of such birth is considered live-born.
Still-birth:	Still-birth means foetal death where a product of conception has attained at least the prescribed period of gestation
Delayed registration:	Any birth or death of which information is given to the registrar after expiry of period specified in existing laws, rules and regulations.

XII. Annexes:

Annex 1: Differences in Birth Dates between the registers maintained by the Panchayat Secretary, ANM and Anganwadi Worker.

Parents of the child	Birth Register with Panchayat Secretary	Register with ANM	Register with Anganwadi Worker
Chabala Panchayat in Vajrakarur Mandal			
Malik & Gugunu	01-10-2010	04-09-2010	26-09-2010
Srinivas & Lakshmi	22-10-2010	30-10-2010	30-10-2010
Hanumanthu & Tulasi	22-10-2010	29-11-2010	NA
Gangamma & Mahalakshmi	15-11-2010	19-11-2010	19-11-2010
Bhimesh & Latha	10-09-2009	07-09-2010	07-09-2009
Paluvaigate Panchayat Rentachintala mandal Guntur District			
Nageswarao Madavi	24-06-2009	17-06-2009	17-06-2009
Bramaiah & Meri	01-08-2009	31-07-2009	01-08-2009
Mariyadasu & Sagamma	28-09-2009	28-09-2009	27-08-2009
Raju & Mariamma	08-04-2008	08-04-2008	09-04-2009

Annex 2: Differences in Death Dates between the registers maintained by the Panchayat Secretary, ANM and Anganwadi Worker.

Name of deceased	Death Register with Panchayat Secretary	Register with ANM	Register with Anganwadi Worker
Chabala Panchayat Vajrakaroor Mandal in Anantapur District			
Nagamma w/o Linganna	20-08-2010	19-08-2010	NA
Lakshamma w/o Obulesu	03-10-2009	19-09-2009	NA
Tirupalu	04-05-2009	05-05-2009	NA
Lallamma w/o Hanumaiah	30-12-2009	15-12-2009	NA
Varnurappa s/o Hanumanthappa	14-04-2009	14-04-2004	12-04-2009
Madikerappa s/o Madanna	19-06-2010	19-06-2010	16-06-2010
Pullaiah s/o Chinnalinganna	11-10-2010	NA	09-10-2010
Daraganna s/o Varnurappa	05-07-2008	NA	14-07-2008
Narayanamma w/o Durgappa	11-07-2010	01-06-2010	NA
Kattakur Gram Panchayat in Mudigonda Mandal Khammam District			
Binde Lakshmiah	09-11-2010	28-09-2010	
Veeraiah	09-11-2010	08-11-2010	NA
Ch.Susila	Kept blank Date	05-02-2011	NA
Paluvaigate Panchayat Rentachintala mandal Guntur District			
Perum Babu s/o Sivareddy	31-01-2011	01-02-2011	NA
Balakotamma	16-02-2011	16-02-2011	15-02-2011

Annex 3: Births registered which occurred out side the jurisdiction of registration units.

Date of Birth	Place of Birth	Date of Birth	Place of Birth
Chabala Panchayat in Vajrakaroor Mandal		Y.Kota Panchayat in Obullavaripalle mandal	
01-10-2010	CHC Kalyana Durgam	06-01-2010	Govt Hospital Rajampeta
22-10-2010	CHC Uravakonda	25-01-2010	Tirupati Govt Hospital
22-10-2010	CHC Guntakallu	09-02-2010	Padmavijaya Hospital Kodur
22-10-2010	Padmavathi Nursing Home Gunthakallu	21-02-2010	Kadapa Rims
02-11-2010	CHC Uravakonda	24-02-2010	Tirupati Meternity Hospital
02-11-2010	CHC Gunthakallu	16-03-2010	Tirupati Meternity Hospital
29-11-2010	PHC Gadehathunur	19-03-2010	Ramachandra Hospital Tirupati
15-11-2010	Kumuda Pali Clinic Uravakonda	22-04-2010	Sowjanya Hospital Kodur
25-11-2010	CHC Uravakonda	24-09-2010	Tirupati Meternity Hospital
18-11-2010	SPSN Home Gunthakal	23-05-2010	Shasikala Hospital Kodur
26-11-2010	CHC Pamili	28-05-2010	Sugunamma Hospital Tirupati
07-12-2010	CHC Gunthakallu	29-05-2010	Jayagowri Hospital Rajampeta
18-12-2010	Gadehathunur	01-02-2010	Indira Clinic Tirupati
06-09-2009	Govt Hospital Gunthakal	03-07-2010	Kameswari Hospital Rajampeta
Gullapalem Panchayat in Vajrakaroor Mandal		17-09-2010	Sainik Hospital Hyderabad
01-07-2008	Govt Hospital	12-11-2010	Rims Kadapa
05-07-2008	Private Nursing Home Gunthakal	27-12-2010	Madar Hospital Tirupati
18-07-2008	Govt Hospital Gunthakal	17-01-2010	Narasimha Hospital Ananthapuram
11-08-2008	Govt Hospital Gunthakal		
25-08-2008	Private Nursing Home Gunthakal		
08-09-2008	Govt Hospital Gunthakal		
07-10-2008	Govt Hospital Uravakonda		
07-12-2008	Private Nursing Home Gunthakal		
23-12-2008	Govt Hospital Gunthakal		

Annex 4: Deaths registered which occurred outside the jurisdiction of registration units

Date of Death	Place of Death	Date of Death	Place of Death
Chabala panchayat in vajrakaroor mandal		Kattakur Panchayat - Mudigonda mandal	
12-11-2008	Kurnool Hospital	11-04-2009	Khammam Hospital
30-01-2010	Sami Nursing Home	03-05-2009	Khammam
04-05-2010	Hospital (Hospital name not mentioned & there is no Hospital)	Chirumarri Panchayat - Mudigonda Mandal Khammam District	
Gullapalem Panchayat in Vajrakaroor Mandal		19-09-2000	PHC Mudigonda
23-09-2008	Govt Hospital Ananthapuram	Mutharam Panchayat - Mudigonda Mandal Khammam District	
04-11-2008	Govt Hospital Gunthakal	03-12-2004	Khammam Govt Hospital
08-11-2008	Govt Hospital Kurnool		

Annex 5: Number of Hospitals existing in the state, covered under MCCD

Type of Hospital	Existing	Covered under MCCD
Teaching Hospitals	14	14
Specialized Hospitals	39	39
General Hospitals (Area DT)	78	78
Primary Health Centers	1570	1570
Community Health Centers	188	188
Other Govt (ESI, Railway) Hospitals	17	17
Private Hospitals (Nursing Homes, Clinics)	2316	2316
Total	4222	4222

Source: MCCD section in VSD.

Annex 6: Status of monthly reports sent on births registered and unsend forms by the municipalities

SI	Year	Births registered	Months - F11 or CL sent				Unsent forms of Municipality		
			Total Months sent Form 11	Births reports sent Form 11	% of Births reports sent Form 11	Birth reports sent with CL	% of Birth reports sent with CL	Number of Unsent Birth reports and available in the municipality	% of Unsent Birth reports available in the municipality
1	2000	8339	72	12	16.67	0	0.00	0	0.00
2	2001	7626	72	5	6.94	0	0.00	1	0.01
3	2002	8314	72	0	0.00	12	16.67	0	0.00
4	2003	9061	72	0	0.00	0	0.00	20	0.22
5	2004	9640	72	0	0.00	0	0.00	0	0.00
6	2005	8975	72	12	16.67	12	16.67	1	0.01
7	2006	9824	72	21	29.17	0	0.00	0	0.00
8	2007	12389	72	33	45.83	12	16.67	2131	17.20
9	2008	13815	72	36	50.00	12	16.67	4446	32.18
10	2009	15306	72	36	50.00	0	0.00	6797	44.41
11	2010	18617	72	32	44.44	0	0.00	11956	64.22
Total		121906	792	187	23.61	48	6.06	25352	20.80

Note: F11=Form 11, CL=Covering Letter

Annex 7: Status of monthly reports sent on deaths registered and unsent forms by the municipalities

SI	Year	Deaths registered	Months - F12 or CL sent				Unsent forms of Municipality		
			Total Months	Deaths reports sent Form 12	% of Deaths reports sent Form 12	Death reports sent with CL	% of Death reports sent with CL	Number of Unsent Death reports and available in the municipality	% of Unsent Death reports available in the municipality
1	2000	1423	72	12	16.67	0	0.00	0	0.00
2	2001	1511	72	5	6.94	0	0.00	0	0.00
3	2002	1577	72	0	0.00	12	16.67	0	0.00
4	2003	1607	72	0	0.00	0	0.00	0	0.00
5	2004	1562	72	0	0.00	0	0.00	0	0.00
6	2005	1613	72	12	16.67	12	16.67	0	0.00
7	2006	1496	72	20	27.78	0	0.00	1	0.07
8	2007	1857	72	33	45.83	0	0.00	229	12.33
9	2008	2107	72	36	50.00	0	0.00	823	39.06
10	2009	2103	72	36	50.00	0	0.00	1109	52.73
11	2010	2248	72	32	44.44	0	0.00	1410	62.72
Total		19104	792	186	23.48	24	3.03	3572	18.70

Note: F12=Form 12, CL=Covering Letter

Annex 8: Status of monthly reports sent on births registered and unsent forms by the mandals

Year	Births registered	Months - F11 or CL sent					Unsent forms of Mandals	
		Total Months	Births reports sent Form 11	% of Births reports sent Form 11	Birth reports sent with CL	% of Birth reports sent with CL	Number of Unsent Birth reports and available in the Mandals	% of Unsent Birth reports available in the Mandals
2000	1,549	72	0	0.00	12	16.67	62	4.00
2001	1,308	72	0	0.00	12	16.67	176	13.46
2002	1,277	72	1	1.39	23	31.94	91	7.13
2003	1,495	72	0	0.00	24	33.33	141	9.43
2004	1,633	72	3	4.17	25	34.72	5	0.31
2005	1,351	72	1	1.39	35	48.61	4	0.30
2006	1,132	72	1	1.39	31	43.06	229	20.23
2007	821	72	0	0.00	15	20.83	2	0.24
2008	722	72	0	0.00	12	16.67	436	60.39
2009	364	72	0	0.00	12	16.67	17	4.67
2010	3	72	0	0.00	12	16.67	136	4533.33
Total	11,655	792	6	0.76	213	26.89	1,299	11.15

Note: F11=Form 11, CL=Covering Letter

Annex 9: Status of monthly reports sent on deaths registered and unsend forms by the mandals

Sl	Year	Deaths registered	Months - F12 or CL sent				Unsent forms of Mandals		
			Total Months	Deaths reports sent Form 12	% of Deaths reports sent Form 12	Death reports sent with CL	% of Death reports sent with CL	Number of Unsent Death reports and available in the Mandals	% of Unsent Death reports available in the Mandals
1	2000	996	72	0	0.00	12	16.67	23	2.31
2	2001	874	72	0	0.00	12	16.67	13	1.49
3	2002	997	72	0	0.00	24	33.33	29	2.91
4	2003	1003	72	0	0.00	24	33.33	103	10.27
5	2004	1206	72	0	0.00	28	38.89	7	0.58
6	2005	1004	72	0	0.00	36	50.00	2	0.20
7	2006	1102	72	0	0.00	32	44.44	149	13.52
8	2007	1025	72	0	0.00	16	22.22	35	3.41
9	2008	870	72	0	0.00	12	16.67	141	16.21
10	2009	127	72	0	0.00	12	16.67	23	18.11
11	2010	19	72	0	0.00	12	16.67	37	194.74
Total		9223	792	0	0.00	220	27.78	562	6.09

Note: F12=Form 12, CL=Covering Letter

Annex 10: Status of monthly reports sent on births registered and unsend forms by the panchayats

Year	Births registered	Months - F11 or CL sent				Unsent forms of Gram panchayats		
		Total Months	Births reports sent Form 11	% of Births reports sent Form 11	Births reports sent with CL	% of Births reports sent with CL	Number of Unsent Births reports and available in the Gram Panchayats	% of Unsent Births reports available in the Gram Panchayats
2008	46	72	12	16.67	0	0.00	0	0.00
2009	155	72	12	16.67	0	0.00	0	0.00
2010	191	72	12	16.67	12	16.67	0	0.00
Total	392	216	36	16.67	12	5.56	0	0.00

1) F11=Form 11, CL=Covering Letter.

2) The registers available with the panchayat secretaries are for the years from 2008.

Annex 11: Status of monthly reports sent on deaths registered and unsent forms by the panchayats

Year	Deaths registered	Months - F12 or CL sent					Unsent forms of Gram panchayats	
		Total Months	Deaths reports sent Form 12	% of Deaths reports sent Form 12	Death reports sent with CL	% of Death reports sent with CL	Number of Unsent Death reports and available in the Gram Panchayats	% of Unsent Death reports available in the Gram Panchayats
2,008	90	72	12	16.67	0	0.00	0	0.00
2009	90	72	12	16.67	0	0.00	13	14.44
2010	87	72	12	16.67	12	16.67	9	10.34
Total	267	216	36	16.67	12	5.56	22	8.24

1) F12=Form 12, CL=Covering Letter

2) The registers available with the panchayat secretaries are for the years from 2008.

Annex 12 : Data availability for 25 most recent Birth and Death Reports for scrutiny

Area	# Samples	Data Availability corresponding to			
		BLP	BSP	DLP	DSP
Municipalities					
Wanaparthy	25	25	25	25	25
Mangalagiri	25	25	25	25	25
Madanapalle	25	25	25	25	25
Jammalamadugu	25	25	25	25	25
Nirmal	25	25	25	25	25
Venkatagiri	25	25	25	25	25
Total	150	150	150	150	150
Panchayats					
Paluvoitgate	25	14	0	25	0
Serivelpur	25	0	0	17	2
Cabhala	25	25	17	25	0
Y.Kota	25	2	0	1	0
Kopparthycamp	25	18	18	18	18
Kattakur	25	0	0	25	25
Total	150	59	35	111	45

Note:BLP=Birth legal part, BSP=Birth statistical part, DLP=Death legal part, DSP=Death statistical part

Annex 13: Data missing in legal part of birth reports (Form-1) based on scrutiny of a sample of most recent birth reports

Variable	Urban (N=150)		Rural (N=59)		Both (N=209)	
	#	%	#	%	#	%
Sex of the child	0	0.00	2	3.39	2	0.96
Place of Birth	1	0.67	0	0.00	1	0.48
Parents address at the time of Birth	24	16.00	37	62.71	61	29.19
Permanent Address of the parents	11	7.33	26	44.07	37	17.70
Informant's Name and Address	4	2.67	14	23.73	18	8.61

Annex 14: Data missing in statistical part of birth reports (Form-1) based on scrutiny of a sample of most recent birth reports

Variable	Urban (N=150)		Rural (N=35)		Both (N=185)	
	#	%	#	%	#	%
Mother's Residence	0	0.00	18	51.43	18	9.73
Religion of the Family	6	4.00	5	14.29	11	5.95
Father's Education	28	18.67	17	48.57	45	24.32
Mother's Education	31	20.67	10	28.57	41	22.16
Father's Occupation	26	17.33	7	20.00	33	17.84
Mother's Occupation	44	29.33	5	14.29	49	26.49
Mother's age at the marriage	49	32.67	15	42.86	64	34.59
Mother's age at the time of Delivery	29	19.33	18	51.43	47	25.41
Duration of Pregnancy	18	12.00	35	100.00	53	28.65
Type of attention at delivery	2	1.33	2	5.71	4	2.16
Method of Delivery	4	2.67	27	77.14	31	16.76
No. of children Born a live incl. This child	6	4.00	14	40.00	20	10.81
Birth weight in Kgs	16	10.67	18	51.43	34	18.38

Annex 15: Data missing in legal part of death reports (Form-2) based on scrutiny of a sample of most recent birth reports

Variable	Urban (N=150)		Rural (N=111)		Both (N=261)	
	Missing	%	Missing	%	Missing	%
Date of Death	0	0	3	2.7	3	1.15
Name of Deceased	0	0	0	0	0	0
Father/ husband's Name	4	2.67	12	10.81	16	6.13
Mother's Name	93	62	105	94.59	198	75.86
Sex of Deceased	0	0	1	0.9	1	0.38
Age of Deceased	1	0.67	21	18.92	22	8.43
Place of Death	6	4	1	0.9	7	2.68
Address at the time of death	13	8.67	19	17.12	32	12.26
Permanent Address	17	11.33	20	18.02	37	14.18
Informant's Name	28	18.67	38	34.23	66	25.29

Annex 16: Data missing in statistical part of death reports (Form-2), based on scrutiny of a sample of most recent death reports.

Variable	Urban (N=150)		Rural (N=45)		Both (N=195)	
	#	%	#	%	#	%
Type of medical attention before death	46	30.67	32	71.11	78	40.00
Medical Certification of Cause.	35	23.33	15	33.33	50	25.64
Name of disease or cause of death	14	9.33	17	37.78	31	15.90
Habitually smoke how many years?	72	48.00	45	100.00	117	60.00
Habitually chew tobacco in any firm how many years?	76	50.67	45	100.00	121	62.05
Habitually chew (including pan masala) how many years?	78	52.00	45	100.00	123	63.08
Habitually drink alcohol how many years	82	54.67	45	100.00	127	65.13

¹ The number of cases can be arrived at by multiplying the sample size (N) with the proportion, rounded to the nearest integer.

Annex 17: Fertility / Mortality rates

Year	Birth rate		Death rate		IMR		Year	Birth rate		Death rate		IMR	
	CRS	SRS	CRS	SRS	CRS	SRS		CRS	SRS	CRS	SRS	CRS	SRS
1953	26.0		16.2		129.0		1981	13.6	31.7	4.1	11.1	26.0	86.0
1954	25.7		13.8		123.0		1982	13.2	31.2	3.8	10.6	24.0	79.0
1955	29.6		14.6		123.0		1983	11.8	30.8	3.7	10.4	25.0	77.0
1956	27.0		13.4		123.6		1984	8.5	31.2	2.3	11.0	22.0	78.0
1957	19.8		10.8		92.7		1985	8.4	29.9	2.2	10.3	21.0	83.0
1958	19.3		10.7		85.9		1986	8.3	31.6	2.3	9.9	21.0	82.0
1959	17.9		8.0		83.1		1987	8.5	30.3	2.4	9.9	19.0	79.0
1960	17.9		7.9		79.5		1988	9.1	27.4	3.0	10.2	18.0	83.0
1961	18.4		7.6		75.0		1989	8.0	25.9	2.5	9.5	18.0	81.0
1962	18.3		7.9		73.0		1990	8.0	26.3	2.4	9.1	16.0	70.0
1963	17.8		8.1		73.0		1991	8.0	26.0	2.5	9.7	NA	73.0
1964	16.5		7.7		64.0		1992	8.3	24.5	2.8	9.2	NA	71.0
1965	17.9		7.3		55.0		1993	8.5	24.3	3.0	8.6	12.0	64.0
1966	18.7		8.3		NA		1994	8.0	23.8	2.5	8.3	11.0	65.0
1967	17.7		6.9		53.0		1995	8.1	24.2	2.5	8.4	11.0	67.0
1968	18.6		6.6		50.0		1996	8.1	22.8	2.9	8.4	11.0	65.0
1969	16.9		6.4		49.0		1997	8.2	22.5	2.8	8.3	12.0	63.0
1970	16.0	35.4	6.1	15.8	47.0	113.0	1998	9.0	22.4	3.5	8.8	13.0	66.0
1971	22.5	34.8	8.2	14.6	42.0	106.0	1999	8.5	21.7	3.1	8.2	12.0	66.0
1972	21.9	35.8	8.6	16.1	47.0	116.0	2000	12.4	21.3	4.7	8.2	6.0	65.0
1973	22.3	31.6	9.6	16.6	45.0	105.0	2001	11.6	21.0	4.7	8.2	6.0	66.0
1974	22.4	34.6	8.2	15.3	43.0	111.0	2002	15.8	20.7	5.9	8.1	6.3	63.0
1975	23.7	34.9	8.3	15.2	43.0	123.0	2003	16.2	20.4	6.6	8.0	7.7	59.0
1976	22.5	33.7	8.2	14.5	40.0	122.0	2004	15.9	19.0	6.3	7.0	6.1	59.0
1977	21.2	32.3	7.6	14.2	38.0	125.0	2005	16.9	19.1	6.4	7.3	5.7	57.0
1978	21.5	33.6	7.4	13.3	35.0	117.0	2006	13.8	18.9	5.0	7.3	3.5	56.0
1979	21.9	32.1	7.1	12.6	32.0	105.7	2007	14.4	18.7	5.2	7.4	5.5	54.0
1980	20.2	31.0	6.2	11.3	27.0	92.4	2008	14.2	18.4	5.0	7.5	6.3	52.0
							2009	13.8	18.3	5.2	7.6	8.8	49.0

Note: ¹For the years from 1953 to 2001, the figures were taken from the reports of “Vital Statistics of India based on the CRS” released by RGI.

²For the years from 2002 - 2009, the CRS figures were taken from Annual reports published by VSD, AP.

³All the SRS figures are taken from the SRS bulletins which are available from 1970

⁴NA=Not Available

Annex 18: Lag days in sending the monthly reports from Jammalamadugu Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	182	153	122	92	61	31	151	120	90	59	29	-2
2001	120	92	61	31	0	NA	NA	NA	NA	NA	NA	NA
2002	266	238	207	177	146	116	85	54	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	243	215	184	154	123	93	62	31	1	74	44	13
2006	194	166	135	105	74	44	13	160	130	99	69	38
2007	7	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 19:Lag days in sending the monthly reports from Madanapalle Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	NA	NA	NA	NA	207	177	146	115	85	54	24	194
2008	163	134	103	73	42	12	8	3	16	27	15	74
2009	43	23	27	34	3	8	NA	18	15	15	4	13
2010	41	10	10	5	4	7	8	8	8	10	10	13

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 20: Lag days in sending the monthly reports from Mangalagiri Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	5	96	65	35	14	28	21	13	NA	43
2007	9	9	8	153	44	14	NA	30	24	1	7	5
2008	23	9	31	1	350	320	289	258	228	NA	538	507
2009	476	448	417	387	356	326	295	264	234	203	173	142
2010	245	217	186	156	125	95	64	33	NS	NS	NS	NS

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality.

Annex 21: Lag days in sending the monthly reports from Nirmal Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	588	560	529	499	468	438	407	376	346	315	285	254
2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 22:Lag days in sending the monthly reports from Venkatagiri Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	34	6	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2009	629	601	570	540	509	479	448	417	387	356	326	295
2010	264	236	205	175	144	114	83	52	22	58	28	27

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality.

Annex 23:Lag days in sending the monthly reports from Wanaparthy Municipality

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	492	464	433	403	372	342	311	280	250	219	189	158
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	1023	995	964	934	903	873	842	811	781	750	720	689
2008	658	629	598	568	537	507	476	445	415	384	354	323
2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS
2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 24: Lag days in sending the monthly reports from Vajrakaroor Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2009	739	711	680	650	619	589	558	527	497	466	436	405
2010	374	346	315	285	254	224	193	162	132	101	71	40

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available

Annex 25: Lag days in sending the monthly reports from Gudivada Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	1247	1219	1188	1158	1127	1097	1066	1035	1005	974	944	913
2003	882	854	823	793	762	732	701	670	640	609	579	548
2004	517	488	457	427	396	366	335	304	274	243	213	182
2005	151	123	92	496	465	435	404	373	343	312	282	251
2006	220	192	161	131	100	70	39	8	NA	NA	NA	NA
2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available

Annex 26: Lag days in sending the monthly reports from Rentachintal Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NS	NS	NS	NS
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available

Annex 27: Lag days in sending the monthly reports from Bodhan Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
2004	NS	NA	NA	NA	NA	NA	NA	NA	76	45	24	-7
2005	151	123	92	62	31	73	42	38	8	24	36	5
2006	50	22	125	95	64	105	74	43	79	48	18	166
2007	135	107	76	46	NA	NA	NA	NA	NA	NA	NA	NA
2008	NA	NA	NA	NA	NA	NA	NA	NS	NS	NA	NA	NA
2009	NS	NA	NA	NA	NA	NA	NA	NS	NA	NA	NA	NA
2010	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 28: Lag days sending the Birth monthly reports of Mudigonda Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	1043	1015	984	954	923	893	862	831	801	770	740	709
2003	678	650	619	589	558	528	497	466	436	405	375	344
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	728	700	669	639	608	578	547	516	486	455	425	394
2006	159	131	100	70	182	152	121	90	60	150	120	89
2007	149	121	90	60	29	249	218	187	157	126	96	65
2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 29: Lag days in sending the monthly reports from Obullavaripalle Mandal

Year	Month - lag days											
	JanLag	FebLag	MarLag	AprLag	MayLag	JunLag	JulLag	AugLag	SepLag	OctLag	NovLag	DecLag
2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Note: NA=The status of monthly reports sent were not available. NS= The reports were not sent and the statistical parts are available in the municipality

Annex 30: # of Registrars and Functionaries Trained on CRS for the Year 2010 - 2011

Date	Place of Training	# of Participants	Date	Place of Training	# of Participants
13-12-2010	Shanshabad	60	18-01-2011	Jammalamadugu	136
21-12-2010	Mahaboobnagar	107	19-01-2011	Kadapa	97
22-02-2010	Mahaboobnagar	120	19-01-2011	LR Pally	62
22-12-2010	Chevella	71	05-02-2011	Sangareddy	174
23-12-2010	Narayanpet	125	05-02-2011	Medak	90
28-12-2010	Gadwal	130	06-02-2011	Medak	88
29-12-2010	Nagarkurnool	131	06-03-2011	Sidipeta	151
17-01-2011	Rajampeta	76	17-02-2011	Vikarabad	92
18-01-2011	Rajampeta	72		Total	1,782

Note: Training is for one day from 10.30 am to 5.00 pm

Annex 31: # of Doctors and Coders trained under MCCD during 2010 - 2011 First Phase

Date	Place of Training	# of Participants
16-09-2010	Bhaskar General Hospital, Yenkapally (V) Moina Bad (M) Hyderabad	55
18-09-2010	Medicity General Hospital, Ghanapur, Medchal, R.R.Dist	52
20-09-2010	Sadan Institute of Medical Sciences & Research Center, Peerancheru, Hyderabad.	55
24-09-2010	Dr. Pinnamaneni Siddhartha Institute of MS&RF Chinnathotapally, Gannavaram Krishna District.	54
27-09-2010	NRI Hospital, Chinnakakani, Guntur.	54
28-09-2010	Katuri General Hospital, Katiri Nagar, Chinkondurupadu, Guntur	64
29-09-2010	G.S.L Medical College & Hospital, Rajamundry E.G.Dist	55
04-10-2010	Chimeda Ananda Rao Institute of Medical Sciences , Bommakkal Village, Karimnagar.	55
05-10-2010	Prathima Institute of Medical Sciences, Naganur Road, KNR.	53
07-10-2010	MNR Medical College & General Hospital Fasalwadai, S.R, Medak Dist.	65
08-10-2010	SVS Medical College & General Hospital Mahaboobnagar	74
08-10-2010	Narayana Medical College and General Hospital, Chinthareddy Palem Nellore Dist.	60
10-10-2010	Konaseema Institute of Medical Science Amalapuram	58
11-10-2010	Alluri Seetharam Raju Acadamy, Malkapuram, Eluru, W.G. Dist	62
	Total	816

Note: The training is for one day from 10.30 am to 5.00 pm. The participants are Doctors and District level VSD staff. Training was provided by the professors of SPM (Social Preventive Medicine)

Annex 32: # of Doctors and Coders trained under MCCD during 2010 - 2011 - Second Phase

Date	Place of Training	# of Participants
14/02/2010	VRK Women Medical College, Hyderabad	44
15/12/2010	VRK Women Medical College, Hyderabad	56
16/12/2010	Gandhi General Hospital, Hyderabad	65
17/12/2010	NIMS Hospital, Hyderabad	60
18/12/2010	NIMS Hospital, Hyderabad	44
23/12/2010	Shantharam Medical College, Nandyala	65
24/12/2010	PES Medical College, Kuppam	42
01/04/2011	Osmania General hospital Hyderabad	61
01/05/2011	Osmania General hospital Hyderabad	60
24/01/2011	Global Hospital Hyderabad	48
25/01/2011	Star Hospital Banjarahils, Hyderabad	52
27/01/2011	Olive Hospital, Hyderabad	45
28/01/2011	Singareni Collieries Hospital, Kothagudem	56
29/01/2011	Collieries Hospital, Ramakrishnapuram, Adilabad	96
31/01/2011	Asha Hospital Hyderabad	89
	Total	883

Note: The training is for one day from 10.30 am to 5.00 pm. The participants are Doctors and District level VSD staff. Training was provided by the professors of SPM (Social Preventive Medicine)

Annex 33: Duties and Roles of the CRS staff for registration of births and deaths

Staff Designation	Operational Activity								
	#	Regn of Event	Issue of Certfct (Form12)	Tabulatio n of births & deaths (Form11)	Sending Form 11 & 12 to next level	Receive Form 4 from Hospls	Receive Form 4A from others	Sending Form 4	Sending Form 4A
Municipalities									
Asst. Stat Officer	0	0	0	0	0	0	0	0	0
Sanitary Inspector	3	3	3	3	3	2	1	1	0
Health Assistant	3	3	3	1	1	3	2	1	0
Birth and Death Assistant	1	0	1	0	0	0	0	0	0
Assistant to Sanitary Inspector	1	1	1	0	0	0	0	0	0
Public Health Worker	1	1	1	0	0	0	0	0	0
Asst. To Birth and death Asst.	1	1	0	1	1	0	0	1	0
Bill Collector	2	2	1	2	2	0	0	0	0
Sub Total	12	11	10	7	7	5	3	3	0
Mandals									
Asst. Stat Officer	4	0	0	3	3	0	0	1	0
Jr& Senior Assistant	1	1	1	0	0	0	0	0	0
EO (PRD)	1	1	1	0	0	0	0	0	0
Sub Total	6	2	2	3	3	0	0	1	0
Panchayats									
Secretary	5	5	5	4	5	0	0	0	0
Asst to Panchayat Secretary	1	1	1	1	1	0	0	0	0
Sub Total	6	6	6	5	6	0	0	0	0
Grand Total	14	10	9	10	11	0	0	1	0

The status given was as on date of the visit of the field investigator. All ASO posts in municipalities except one in Mangalagiri were vacant. Even the ASO in Mangalagiri was deputed to attend some revenue work in the MRO office. In one of the mandal (MRO), no body was incharge for CRS.

Annex 34: Working status by the staff on civil registration in sample units						
Work characteristic	#Primary job holders			#Secondary job holders		
	Urban	Rural	Both	Urban	Rural	Both
Working hours in a day on CRS						
One Hour	0	0	0	0	1	1
Two Hours	0	1	1	0	0	0
Three Hours	0	0	0	2	0	2
Four Hours	1	0	1	0	0	0
Five Hours	0	0	0	0	0	0
Six Hours	2	0	2	0	0	0
Seven Hours & Above	5	1	6	2	0	2
Working days in a week						
One day in a Week	0	0	0	0	1	1
Two days in a Week	0	0	0	0	1	1
Working days in a month						
Three days in a month	0	0	0	0	1	1
Six days in a month	0	0	0	0	1	1
Seven days in a month	0	0	0	0	1	1
Working hrs in a month						
One Hour in a Week	0	0	0	0	2	2
Half an hour in a Month	0	0	0	0	1	1
Adequacy for CRS						
Yes	6	1	7	2	7	9
NO	2		2	2	2	4
CRS suffer on account of other responsibilities						
Yes	3		3	2	3	5
No	5	2	7	2	6	8
Primary and other job suffer on account of CRS						
Yes	0	0	0	2	3	5
No	0	0	0	2	6	8
Keep aside CRS to manage other responsibilities						
Yes	3		3	2	4	6
No	5	1	6	2	5	7
Frequency of keeping aside the CRS						
Daily	1	0	1	2	0	2
Once in a day	0	0	0	1	1	2
Once in two days	0	0	0	0	0	0
Once in three days	1	0	1	0	0	0
Once in five days	0	0	0	0	0	0
Once in six days	0	0	0	0	0	0
Once in a week	1	0	1	1	6	7
Once in a month	1	0	1	0	2	2
Not kept aside	4	1	5	0	0	0

Annex 35: Review Authority on Civil Registration work and number of responses of having reviewed on civil registration work.

Review Authorities	# of responses
Municipalities	
The Municipal Commissioner	12
Supervisors in the municipality	8
Higher Officers in the Municipal Administration Dept.	4
District Revenue Officer	4
DM&HO - Vital Statistics staff	6
Directorate of Health - Vital Statistics Division	3
Mandals	
The Mandal Parishad Development Officer	2
Mandal Revenue Officer	2
District Panchayat Officer	1
District Revenue Officer	0
DM&HO - Vital Statistics staff	3
Directorate of Health - Vital Statistics Division	0
Panchayats	
The Mandal Parishad Development Officer	5
Mandal Revenue Officer	5
District Panchayat Officer	2
District Revenue Officer	1
DM&HO - Vital Statistics staff	3
Directorate of Health - Vital Statistics Division	0
EOPRD	1

of responses=The response of CRS staff about the review or asks about the civil registration by the higher authorities is recorded

Annex 36: Maintenance status of Birth Registers in Selected Municipalities

Year	Is Birth Register Available		Birth Register Format			Reference Used by the Municipality for birth certification			Serial Numbering of Entries in the Birth Register		Incidence of Blank Entries in the Birth Register	Incidence of repeated serials
	Yes	No	Prescribed	Variant Inclusive	Variant Missing	Birth Register	Binder of F-1	Others	Continuous	Discontinuous		
2000	6	0	6	0	0	1	5	0	4	2	1	0
2001	6	0	6	0	0	1	5	0	4	2	31	0
2002	6	0	6	0	0	0	6	0	4	2	10	2
2003	6	0	6	0	0	0	6	0	4	2	1	8
2004	6	0	6	0	0	2	4	0	3	3	94	5
2005	6	0	0	0	0	2	4	0	4	2	3	7
2006	6	0	6	0	0	3	3	0	4	2	153	1
2007	6	0	6	0	0	4	2	0	5	1	0	136
2008	6	0	6	0	0	3	3	0	5	1	0	118
2009	6	0	6	0	0	3	3	0	4	2	1	1
2010	6	0	6	0	0	3	3	0	4	2	1	4
Total	66	0	60	0	0	22	44	0	45	21	295	282

Annex 37: Status of transcription of Legal Part of Birth Reports to Birth Registers in all Municipalities

Year	Number Form -1 Legal Parts Available	Number Form -1 Legal Parts Chosen for Check with Birth Register	Number Form -1 Legal Parts with matching entry in Birth Register	Number Form -1 Legal Parts with partial entry in Birth Register	Number Form -1 Legal Parts without entry in Birth Register
2000	7,223	0	0	0	0
2001	6,626	0	0	0	0
2002	8,316	0	0	0	0
2003	9,098	0	0	0	0
2004	9,510	10	5	0	5
2005	8,993	20	20	0	0
2006	9,847	30	30	0	0
2007	12,141	40	40	0	0
2008	13,933	30	29	0	1
2009	13,261	30	30	0	0
2010	18,617	30	30	0	0
Total	117,565	190	184	0	6

Annex 38: Maintenance status of Death Registers in selected Municipalities

Year	Is Death Register Available		Death Register Format			Reference Used by the Municipality for Death certification			Serial Numbering of Entries in the Death Register		Incidence of Blank Entries in the Death Register	Incidence of repeated serials
	Yes	No	Prescribed	Variant Inclusive	Variant Missing	Death Register	Death of F-2	Others	Continuous	Discontinuous		
2000	6	0	6	0	0	1	5	0	5	1	0	0
2001	6	0	6	0	0	1	5	0	5	1	0	0
2002	6	0	6	0	0	1	5	0	5	1	0	0
2003	6	0	6	0	0	1	5	0	4	2	0	0
2004	6	0	6	0	0	2	4	0	4	2	2	0
2005	5	1	5	0	0	2	3	0	4	1	0	1
2006	6	0	6	0	0	4	2	0	4	2	14	73
2007	6	0	6	0	0	4	2	0	5	1	2	10
2008	6	0	6	0	0	3	3	0	5	1	0	5
2009	6	0	6	0	0	4	2	0	5	1	1	0
2010	6	0	6	0	0	4	2	0	6	0	6	0
Total	65	1	65	0	0	27	38	0	52	13	25	89

Annex 39: Status of transcription of Legal Part of Death Reports to Death Registers in all Municipalities

Year	Number Form -2 Legal Parts Available	Number Form -2 Legal Parts Chosen for Check with Death Register	Number Form -2 Legal Parts with matching entry in Death Register	Number Form -2 Legal Parts with partial entry in Death Register	Number Form -2 Legal Parts without entry in Death Register
2000	1219	0	0	0	0
2001	1357	0	0	0	0
2002	1536	10	10	0	0
2003	1605	10	10	0	0
2004	1733	20	20	0	0
2005	1614	20	20	0	0
2006	1960	30	28	1	1
2007	1935	40	40	0	0
2008	2104	30	30	0	0
2009	2139	40	40	0	0
2010	2263	40	40	0	0
Total	19,465	240	238	1	1

Annex 40: Transfer status of Statistical Part of Birth reports in All Municipalities

Year	Number of Form -1 Statistical Parts Received	Number of Form -1 Statistical Parts Sent	% of Number of Form -1 Statistical Parts Sent	Number of Form -1 Statistical Parts Hold	% of Number of Form -1 Statistical Parts Hold	Number of Form -1 Legal parts missing in municipality	Number of Form -1 Statistical parts missing in municipality
2000	1028	1028	100	0	0	1028	0
2001	423	422	99.76	1	0.24	422	0
2002	1051	1051	100	0	0	0	55
2003	1169	1151	98.46	18	1.54	0	324
2004	1291	1291	100	0	0	0	8
2005	2311	2310	99.96	1	0.04	1	97
2006	2757	2757	100	0	0	0	253
2007	9015	6882	76.34	2133	23.66	376	2188
2008	13925	9479	68.07	4446	31.93	1	9
2009	13058	6261	47.95	6797	52.05	0	203
2010	18617	6661	35.78	11956	64.22	0	0
Total	64745	39293	60.69	25352	39.16	1828	3137

Annex 41: Transfer status of Statistical Part of Death reports in All Municipalities

Year	Number of Form -2 Statistical Parts Received	Number of Form -2 Statistical Parts Sent	% of Number of Form -2 Statistical Parts Sent	Number of Form -2 Statistical Parts Hold	% of Number of Form -2 Statistical Parts Hold	Number of Form -2 Legal parts missing in municipality	Number of Form -2 Statistical Parts missing in municipality
2000	116	116	100	0	0	116	0
2001	97	97	100	0	0	97	0
2002	203	203	100	0	0	0	1
2003	206	206	100	0	0	0	0
2004	228	228	100	0	0	0	1
2005	375	375	100	0	0	146	0
2006	506	505	99.8	1	0.2	0	163
2007	1028	799	77.72	229	22.28	12	202
2008	1951	1128	57.82	823	42.18	40	0
2009	1923	814	42.33	1109	57.67	9	50
2010	2248	838	37.28	1410	62.72	0	15
Total	8881	5309	59.78	3572	40.22	420	432

Annex - S : All schedules

Level	Sch #	Title	# pages
Mpl	Sch-01	Registration and tabulation of birth events for the year & Worksheet to consolidate births registered through different registration points.	2 pages
Mpl	Sch-02	Registration and tabulation of death events for the year & Worksheet to consolidate deaths registered through different registration points.	2 pages
Mpl	Sch-03	Municipality Civil Registration Functionary Questionnaire	7 pages
Mpl	Sch-04	Observations about Civil Regn. & Vital Statistics Work in the Municipality (Investigator's Assessment)	5 pages
Mpl	Sch-05	Surveyor Scrutiny of Birth report - Legal Part	1 page
Mpl	Sch-06	Surveyor Scrutiny of Birth report - Statistical Part	1 page
Mpl	Sch-07	Surveyor Scrutiny of Death report - Legal Part	1 page
Mpl	Sch-08	Surveyor Scrutiny of Death report - Statistical Part	1 page
GP	Sch-09	Surveyor Scrutiny of Birth register in Gram Panchayat (part-1)	1 page
GP	Sch-10	Surveyor Scrutiny of Birth register in Gram Panchayat (part-2)	1 page
GP	Sch-11	Surveyor Scrutiny of Death register in Gram Panchayat (part-1)	1 page
GP	Sch-12	Surveyor Scrutiny of Death register in Gram Panchayat (part-2)	1 page
GP	Sch-12A	Registration and tabulation of Birth events for the year (Panchayat)	2 pages
GP	Sch-12B	Registration and tabulation of Death events for the year (Panchayat)	2 pages
MP	Sch-13	Registration and tabulation of Birth events for the year (Mandal) & Worksheet to consolidate Form 1 Reports from different registration points.	4 pages
MP	Sch-14	Registration and tabulation of Birth events for the year (Panchayat)	1 page
MP	Sch-15	Registration and tabulation of Death events for the year (Mandal)	4 pages
MP	Sch-16	Registration and tabulation of Death events for the year (Panchayat)	1 page
MP	Sch-17	Mandal Civil Registration Functionary Questionnaire	7 pages
MP	Sch-18	Observations about Regn. & Vital Statistics Work in the Mandal	1 page

Mpl: Municipal;

GP: Gram Panchayat;

MP: Mandal Praja Parishad / Mandal Development Office

To minimize file size, we have grouped the above schedules in a separate file. If you need the schedules, please download from the IHS Website.