HEALTH PROGRAMME MANAGERS' MANUAL

Understanding Health Management Information Systems

सत्यमेव जयते

NATIONAL RURAL HEALTH MISSION
राष्ट्रीय ग्रामीण स्वास्थ्य मिशन

Volume - II

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National Rural Health Mission
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Foreword

One of the major contributions of NRHM has been to put in place a nationwide HMIS. Currently, on a monthly basis we are gathering reports from over 643 districts. The quality of data reported has also been increasing over the last two years. The challenge now is to make the information available to Programme Managers, and help them to use it for improving service delivery and health outcomes.

This training programme integrates theory with practice. The first of these manuals is meant for use by every service provider who is gathering and reporting data. Similarly all other Programme Managers and HMIS Managers would also need to be familiar with basic definitions of the data elements. The second manual is for the Health Programme Managers to use this information more effectively in managing the programmes.

Further manuals are available as soft copies for use of web portal and under development for HMIS resource persons. We hope that these manuals are used extensively to train our Service Providers and Programme Managers so that data quality and reliability of data improve significantly.

I thank the entire HMIS team of M&E Division of MOHFW and the team of NHSRC for their efforts in bringing out these manuals. We look forward to suggestions and corrections, if any, so that successive editions of these manuals can be improved.

Mrs. Madhubala
Additional Director General
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Preface

These training manuals are essential to take HMIS in our country to next higher level of quality and effectiveness. The training programme that is being implemented is competency based. For an effective HMIS, the system as a whole requires to have proficiency in eight broad competency areas. These eight areas could be listed as follows:

1. Understanding of data elements.
2. Understanding of indicators and the interpretation of data.
3. Understanding of data quality and its determinants
4. Use of information for health planning and monitoring.
5. Understanding National data requirements and functioning and use of National Web Portal.
6. Use of other applications deployed at District and State level that could also feed in National Portal.
7. Design issues that underlie choice of indicators, architecture of the system, and methods of HMIS evaluation.
8. Abilities to customize applications to suit local needs, to define programming requirements and programming skills.

This set of 4 manuals covers all the above competencies except the last one.

Volume 1 – Service Providers' Manual: This deals with the first competency alone, and is meant for use by everyone in the system. This module is taught to all those gathering and reporting data, the training load is highest for this manual.

Volume 2 – Health Programme Managers' Manual: This deals with the use of indicators, and with the understanding and troubleshooting of data quality issues. This manual is essential for all Block, District and State level Programme Managers who are associated with RCH and NRHM programme management in anyway.

Volume 3 – HMIS Managers' Manual: This is essential for only those who enter data and those who seek to access the databases to download data and do their own analysis. It is essential reading for HMIS Managers. This would cover competencies 5 and 6 listed above.

Volume 4 – HMIS Resource Person Manual: This is more conceptual and deals with larger design issues and theoretical frameworks of understanding. It would be an essential reading for those involved in HMIS design, software development or for those writing a tender document, or for those who are constructing a State level training programme or evaluating HMIS systems.

Though these manuals are best understood when transacted in a workshop, it could also be used as a ready reference material for Programme Managers at all levels.

Underlying these four manuals is one fundamental understanding which is crucial to the success of HMIS, viz. HMIS works best when used as a tool of decentralized participatory health planning and management. Currently we have published only the first two volumes .The other two, under development are currently available as soft copies for those who need it.

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Many other public health professionals have time and again shared their knowledge and expertise to strengthen HMIS in the country and we greatly acknowledge their contribution and regret our inability to name all of them.

Users of this manual are not perceived as mere recipient of information; we encourage them to contribute to the development of knowledge and science of HMIS. We request all readers who notice any discrepancies to provide us suggestions for improvement. Vision of HMIS goes far beyond mere collection and analysis of data…we envision data to guide our programmes and policies for the promotion of health for all.

Dr. T. Sundararaman
Executive Director
National Health Systems Resource Centre
January 2011

Abbreviations

AEFI	Adverse Event Following Immunisation
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homoeopathy
BCC	Behaviour Change Communication
BCG	Bacillus Calmette Guerine
BP	Blood Pressure
BPL	Below Poverty Line
CHC	Community Health Centre
C-section	Caesarean Section
DH	District Hospital
DHIS	District Health Information System
DHQ	District Headquarter
DLHS	District Level Household Survey
DPM	District Programme Manager
DPMU	District Programme Management Unit
DPT	Diphtheria Pertussis Tetanus
DT	Diphtheria Tetanus
EAG	Empowered Action Group
FMR	Financial Management Report
FP	Family Planning
GO	Government Order
HISP	Society for Health Information Systems Programmes
HIV	Human Immuno Deficiency Virus
HMIS	Health Management Information System

HPS	High Performing State
HSC	Health sub-Centre
ICT	Information Communication and Technology
IDSP	Integrated Disease Surveillance Project
IFA	Iron and Folic Acid
IMR	Infant Mortality Rate
IOL	Intra Ocular Lens
IPD	In-patients Department
IUD	Intrauterine Device
IV	Intra-Venous
JE	Japanese Encephalitis
JICA	Japanese International Cooperation Agency
JSY	Janani Suraksha Yojana
LBW	Low Birth Weight
LCD	Liquid Crystal Display
LPS	Low Performing State
M&E Officer	Monitoring and Evaluation Officer
MDG	Millennium Development Goal
MIES	Management Information and Evaluation System
MMR	Maternal Mortality Ratio
MMR	Measles Mumps and Rubella
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MPW	Multi Purpose Worker
MTP	Medical Termination of Pregnancy
NACP	National AIDS Control Programme
NFHS	National Family Health Survey
NHSRC	National Health Systems Resource Centre
NMR	Neonatal Mortality Rate
NPSP	National Polio Surveillance Project

NRHM	National Rural Health Mission
NSV	Non Scalpel Vasectomy
OCP	Oral Contraceptive Pills
OPD	Out-Patient Department
OPV	Oral Polio Vaccine
OT	Operation Theatre
PHC	Primary Health Centre
PNC	Post Natal Care
PNMR	Peri-Natal Mortality Rate
RDK	Rapid Diagnostic Kit
RKS	Rogi Kalyan Samiti
RNTCP	Revised National Tuberculosis Control Programme
RTI	Reproductive Tract Infection
SBA	Skilled Birth Attendant
SC/ST	Schedule Caste/ Schedule Tribe
SD	Standard Deviation
SDH	Sub-District Hospital
SRS	Sample Registration System
STI	Sexually Transmitted Infection
TB	Tuberculosis
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UIP	Universal Immunisation Programme
UT	Union Territories
VDRL	Venereal Disease Research Laboratory
VHND	Village Health and Nutrition Day
VHSC	Village Health and Sanitation Committee
WHO	World Health Organization

CONTENTS

3 Knowledge and Use of Indicators

AFTER READING THIS CHAPTER YOU WILL BE ABLE TO:

- Understand what does indicator means.
- Explain various indicators related to levels of planning.
- List various indicators used for monitoring of health services.
- Create indicators using existing data elements from your facility reports.

I. INDICATORS

In order to manage health services well and for attainment of optimum health of beneficiaries and users, Health Programme Managers at various levels need to know.

- Who gets sick?
- What illnesses are most common?
- Where do these people live?

They also need to know:

- What health services are provided?
- Who uses these services?
- What is the quality of these services?
- How much do these services cost?

Health indicators can help answer these questions. Indicators also help to track and monitor progress towards a target/objective and reflect changes over time. While indicators are useful tools for measuring change, they also have some limitations such as:

- Indicators are used to alert Managers to potential problems, possible causes for these problems, and additional questions that can be asked. Indicators rarely indicate specific cause of the problem and possible solution.

- An isolated indicator by itself does not mean much. It needs comparison over time and across facilities and Districts to show trends in order to be useful.

An indicator is a data element placed in a given context so that it becomes information that can be acted upon and can be used for programme monitoring and management.

Thus, an indicator can be defined as a data element placed in a given context so that it becomes information that can be acted upon and can be used for programme monitoring and management.

This chapter gives a list of indicators that can be derived from the data elements available in HMIS formats. This will assist Managers at all levels to use indicators as a management tool to improve planning, implementation, and monitoring of health programmes.

A. CLASSIFICATION OF INDICATORS

Indicators can be classified into following groups:

a. **Input indicators:** indicate resources invested in the system, e.g., number of doctors per 100,000 people.
b. **Process indicators:** indicate activities of the health system, e.g., percentage of doctors trained in safe delivery skills.
c. **Output indicators:** indicate achievements made in specific health strategies e.g. percentage of women who received 3 ANCs.
d. **Outcome indicators:** indicate achievements of a health programme or health system. e.g institutional delivery rate, breastfeeding in one hour rate etc.
e. **Impact indicators:** indicate achievements in health status of particular group of people e.g. Maternal Mortality Ratio, Infant Mortality Rate, Total Fertility Rate etc.

There are no rigid boundaries between these classifications and sometimes an indicator can fit in more than one classification/category depending on how it is viewed.

In this Chapter, a number of indicators have been presented. It may be noted that this is not an exhaustive list of indicators. Each indicator is explained in detail in the following format:

a. Indicator name
b. Definition of indicator
c. Numerator and denominator for the indicator
d. Rationale of indicator
e. Actions to be considered by Programme Managers
f. Suggested level of use

These indicators can be used on monthly, quarterly and annual basis by Programme Managers for monitoring/management of health services.

II. LIST OF INDICATORS

A. Antenatal Coverage Indicators

ANTENATAL CARE COVERAGE INDICATORS						
Indicator	Definition	Numerator	Denominator	Multiplying factor	Suggested level of use	Periodicity of indicator
ANC registration rate	% of pregnant women who used ANC care provided by skilled health personnel	Total number of ANC registered	Estimated pregnancies	100	National, State, District and Block	Annual, Semiannual
Early registration rate	Proportion of women who were registered within first trimester (12weeks) of pregnancy	Total number of ANC registered within first trimester(12weeks)	Total number of ANC registered	100	National, State, District and Block	Quarterly, annual
TT2 and Booster coverage rate	% of women who were given TT2/Booster dose during current pregnancy	Total number of pregnant women given TT2/booster	Total number of ANC registered	100	State, District and Block	Annual, semiannual
ANC 3 checkups rate	% of pregnant women who used antenatal care provided by skilled health personnel at least 3 times during pregnancy	Total number of ANC 3 check ups	Total number of ANC registered	100	State, District and Block	Annual, semiannual
ANC 100 IFA coverage rate	% of women who were given at least 100 IFA tablets	Total number of ANC women given 100 IFA tablets	Total number of ANC registered	100	State, District/ Block	Annual, semiannual
Rationale	• Antenatal care coverage indicators are indicators of access and use of health care during pregnancy. All women should have at least three antenatal visits during a pregnancy and ANC should start as early in pregnancy as possible. • % ANC registration in first trimester shows early care and level of awareness among community. • % of pregnant women receiving any ANC is a sensitive indicator of outreach. • % of pregnant women receiving TT2/Booster dose indicates completion of maternal TT immunization, which protects newborn from tetanus. IFA is mandatory to be given to each pregnant woman for protecting them against anemia. % of pregnant women given 100 IFA shows prophylactic protection of pregnant women from anemia.					
Actions to consider	• Low coverage means either the strategy for providing ANC needs to be reviewed to increase access, or the community should be approached to increase awareness through ASHA, VHSC, and BCC etc. • Improve quality of care in earlier visits to ensure contact and continuity of care is maintained throughout pregnancy. Ensure that first ANC are not done through sporadic camps or Medical Mobile Units approaches					

B. Immunisation Coverage Indicators

IMMUNISATION COVERAGE INDICATORS						
Indicator	**Definitions**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
Full immunization coverage rate	% of children aged between 9 and 11 months who have been fully immunized (Child given one dose of BCG, three dosages of DPT i.e. DPT 1,2,3; three dosages of polio i.e. OPV 1,2,3 and a dosage of Measles)	Total Number of children aged between 9 and 11 months who have been fully immunized	Estimated children below 1 year	100	National, State , District and Block	Annual, semiannual
BCG Coverage rate	The percentage of live births that received BCG within one year	BCG dose under 1 year	Estimated children below 1 year	100	National, State , District and Block	Annual, semiannual
DPT3 Coverage rate	The percentage of children who received their 3 doses of DPT	DPT 3 dose under 1 year	Estimated children below 1 year	100	National, State , District and Block	Annual, semiannual
OPV3 Coverage rate	The percentage of children under 1 immunised with 3 doses of OPV .	OPV 3 dose under 1 year	Estimated children below 1 year	100	National, State , District and Block	Annual, semiannual
Measles coverage rate	The percentage of children who received their measles dose (normally at 9 months)	Measles dose under 1 year	Estimated children below 1 year	100	National, State , District and Block	Annual, semiannual
Actions to Consider	• Every district and sub-district management team should monitor these indicators annually or semiannually and look for trends and consistencies. • Identify areas with low coverage and ensure supplies and promotion activities. • Monitor associated indicators such as immunization drop-out rates.					

IMMUNIZATION - DROP OUTS RATE						
Indicator	**Definitions**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
BCG - measles dropout rate	% of children who dropped out of immunisation schedule between BCG dose measles dose	Total number of children (0-11 months), given BCG immunization- number of children given measles	Number of children given BCG	100	State and District	Annual
DPT3 - Measles dropout rate	The percentage of children who dropped out of the immunisation schedule between the third dose of DPT (normally at 14 weeks) and the measles dose (normally at 9 months)	Number of children given DPT 3 – number of children given measles	Number of children given DPT3	100	State and District	Annual
Rationale	• A high drop out rate means that either quality of immunisation services is very poor or mothers have poor access to immunisation services. • A negative drop out rate can occur if there is a stock out of the "early" vaccines and good supply of the late vaccines					
Action to consider	• Ensure best possible quality of immunisation • Ensure child tracking with immunisation card • BCC to mothers on importance of finishing immunisation course • Ensure constant availability of vaccine					

C. Delivery Service Indicators

DELIVERY SERVICES						
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
Institutional delivery Rate (Public facilities)	% of deliveries conducted at public institution/facility	Number of deliveries conducted at public institution/facility	Estimated deliveries	100	State and District	Annual, semiannual
Institutional delivery Rate	% of deliveries conducted at public and private institution/ facility	Number of deliveries conducted at public and private institution/facility	Estimated deliveries	100	State and District	Annual, semiannual
Home Delivery Rate	% of deliveries conducted at home	Number of home deliveries (both SBA and Non-SBA)	Estimated deliveries	100	State and District	Annual, semiannual
Skilled Birth Attendant (SBA) Delivery Rate	Proportion of total deliveries assisted by a Skilled Birth Attendant (at home and at institutions)	Deliveries by SBA (SBA Home + all Institutional deliveries)	Total reported deliveries	100	State and District	Quarterly, annual
Rationale	• There is clear evidence that institutional deliveries by SBAs are the key to reducing maternal mortality, due to improved emergency infrastructure, access to transport and referral facilities and a number of other factors.In absence of complete estimated population figures in states, the institutional delivery performance can also be calculated by total reported delivery figures. This can supplement the overall understanding of the institutional delivery in the State.					
Actions to consider	Conditions at institutions should be made more acceptable (professionally, culturally, socially, financially etc) to encourage institutional deliveries					

COMPLICATED DELIVERIES						
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
Caesarean section rate	Proportion of C- section deliveries out of total reported institutional deliveries.	Number. of caesarian section done	Total institutional deliveries (Caesarean section + Normal delivery)	100	State and District	Quarterly, annual
Rationale	• C-section rate reflects on the readiness of the health system to carry out c-section					
Actions to consider	• Few C-sections indicate that health system is putting the health of mother and child at risk as the system is not ready to handle C-section. • High C-sections would indicate unnecessary C-section are being performed.					

POST NATAL CARE						
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
PNC (within 48hrs) rate	% of women who received post natal care checkup done within 48 hrs of delivery	Number of women who received post partum check-ups within 48 hrs of deliver	Total number of Reported deliveries (Institutional + Home)	100	State, District and Block	Quarterly, annual
PNC (between 48hrs & 14 days)rate	% of women who received post natal care checkup done between 48 hrs and 14 days of delivery	Number of women who received post partum check-ups between 48 hrs and 14 days of delivery	Total number of Reported deliveries (Institutional + Home)	100	State, District and Block	Quarterly, annual
Rationale	• Postnatal care (PNC) is an essential component of both maternal and neonatal care, to detect complications so that they can be treated early. The postnatal check-up should follow national protocols. • PNC coverage is an indicator of access and use of health care after delivery. • The numerator should include mothers of babies born at home and coming to health services within 48 hours. • Women should receive at least 2 postnatal care check-ups, to avoid and treat any complication. Ideally 3 PNC check-ups are required, 3rd after 42 days					
Actions to consider	• BCC to mothers to undertake PNC. • Improve reporting of home deliveries.					

D. Family Planning Coverage Indicators

FAMILY PLANNING COVERAGE INDICATORS						
Indicator	**Definitions**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
Contraceptive prevalence Rate (all methods)	Proportion of eligible couples using family planning methods.	All FP Users {sterilization(male & female)+IUD Inserted +Condom/72+OCP/13}	Number of eligible couples	100	State & District	Annually
Contraceptive prevalence RATE BY METHOD						
Sterilization coverage rate	Coverage contribution of sterilization to overall family planning methods	all sterilizations(male &Female)	Eligible Couples	100	State & District	Annually
IUD coverage rate	Coverage contribution of IUD to overall family planning methods	IUD users	Eligible Couples	100	State & District	Annually
OCP coverage rate	Coverage contribution of OCP to overall family planning methods	OCP Users(OCP Cycles /13)	Eligible Couples	100	State & District	Annually
Condoms coverage rate	Coverage contribution of OCP to overall family planning methods	Condom users(condom pieces distributed /72)	Eligible Couples	100	State & District	Annually
Limiting methods coverage rate	Coverage contribution of sterilization(all) to overall family planning method	All sterilizations(male &Female)	Eligible Couples	100	State & District	Annually
Spacing methods coverage rate	Coverage contribution of spacing (all) to overall family planning method	IUD Users+OCP Users+ Condom Users	Eligible Couples	100	State & District	Annually
Rationale	• The indicator provides a profile of the relative level of use of different contraceptive methods. This also suggests that the population has access to a range of different contraceptive methods.					

E. Child and Neonatal Health Indicators

CHILD AND NEONATAL HEALTH INDICATORS						
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of indicator**
% newborns breastfed < 1 hour	Percentage of new born babies breastfed within one hour of birth	Number of new born breastfed within one hour of birth	Total number of live births (as recorded)	100	National, State and District	Quarterly, annual
Sex ratio at birth	Number of females born per 1000 males in a given time period	Number of female live births	Number of male live births	1000	National, State and District	Quarterly, annual
Low birth weight rate	Percentage of live born infants with a birth weight under 2,500 grams	Total number of live births with a birth weight < 2500g.	Total number of live births weighed	100	National, State and District	Quarterly, annual
Rationale	• The more the first feed is delayed, the more difficult it is to initiate breastfeeding. Breastfeeding in the first hour also gives the neonate colostrum, which is rich in immuno-stimulants. However, due to misconceptions many cultures do not give this. This is a very good index of effectiveness of BCC work and of ASHA programme where this is part of her work. This indicator can be used to strengthen these programmes. • Declining sex ratio is an important public health concerns and sex ratio at births is one of most precise indicators of this. Note that the usual sex ratio at birth where there is no active discrimination is about 950 females per 1000 males (this is due to a slightly greater loss of female foetuses). Due to a slightly greater mortality of male children in next five years, it becomes an equal or female preponderant ratio for sex ratio in the 0 to 6 age group. However with optimum care these slightly increased loss before and after birth may decline. Therefore figures in this 950 range need to be interpreted with caution. Below this figure there a gender discrimination factor becomes likely. • Efforts to increase percentage of children weighed by studying who are getting missed out and why. BCC regarding nutrition, smoking and drinking during pregnancy. • Attention to anaemia and malnutrition. • Assistance to secure food entitlements during maternity. • Improve institutional new born care and referral arrangement where low birth weight is high.					
Actions to consider	• Formative research to understand the issue and design BCC programmes to promote immediate breastfeeding. • Ensure registers are re modified to include immediate breastfeeding. • Include in support protocols for home based care givers like ASHAs. • Social mobilization to combat "son preference"					

F. Mortality Indicators

MORTALITY INDICATORS					
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Periodicity of indicator**
Neonatal mortality rate	Neonatal mortality rate (NNMR) measures the number of live-born babies dying within 28 completed days of life per 1,000 live births.	Deaths in first 28 days of birth	Total number of live births	1000	Annual, semiannual
Rationale	• Mortality during the neonatal period accounts for a large proportion of infant deaths, and is considered to be a useful indicator of maternal and newborn neonatal health and care • Neonatal mortality (particularly early mortality) is affected by quality of care for the neonates. This is a significant proportion (around 65%) of IMR. Direct causes are asphyxia, sepsis, hypothermia and neonatal tetanus. Indirect causes are low birth weight, pre maturity, birth injuries and congenital anomalies				
Data Source	• Line listing in the birth and death register and Institutional records. • Registrar of births and deaths- civil registration system, household surveys				
Suggested level of use	State and district. Calculate only when you have at least 3,000 births; otherwise fluctuations will be too high. If we are plotting the monthly trend that either it is for a large area or we are taking the cumulative total of a number of months or even a year.				
Common Problems	Underreporting and misclassifications (as still births) are common, particularly for deaths. Cultural reluctance to reporting early neonatal deaths which only good training and supervision and community dialogue can overcomes Staff training and health facility equipment for a functional newborn care Unit.				
Actions to consider	Appropriate home based neonatal health care providers to be trained.				

Indicator	Definition	Numerator	Denominator	Multiplying factor	Suggested level of use	Periodicity of indicator
Infant Death rate(IDR)	Infant Death rate (IDR) measures the number of deaths of infants under one year of age per 1,000 live births	Deaths of infants less than one year old (Neonatal death plus deaths in 1-12 months)	Total number of live births	1000	National, state and district. Below district even the data element by itself provides actionable information	Annual, semiannual
Rationale	This MDG indicator is a good measure of the socio-economic, nutritional and environmental health status of a given population. Common causes of death after the neonatal period are diarrhoea, acute respiratory infection, malaria, malnutrition, vaccine preventable diseases, especially measles. A significant proportion of the IDR is related to neonatal care. Infant deaths should be reported monthly and IDR calculated semi- annually. One needs to ensure that in this period of calculation there has been at least 3000 live births in that area. At a local level – block or lower- this information is actionable even without making it into an indicator.					
Data Source	Routine: Line listing of deaths; Institutional records. Others: Registrar of births and deaths, Population-based surveys, especially Sample Registration Surveys					
Other Useful Indicators	• IMR by gender gives insight into poor care for the female child and female infanticide. • Peri-natal and neonatal death rates measure quality of care at birth • Disease specific death rates due to diarrhoea, malaria, ARI etc provide clues for immediate action. • IMR can be disaggregated by social class, residence, income etc. • Underweight rate under one year measures nutritional status. This acts as a risk factor, increasing the likelihood of death from any of the above causes.					
Common Problems	IDR from routine data can be inaccurate because of unreported deaths occurring in the home, particularly amongst poor and disadvantaged communities not reached by health services. Cultural reluctance to report neonatal deaths. Tendency to underreport due to threat of reprimand from above deaths before the first birthday are all included in this.					
Actions to consider	Improved notification through line listing by health workers, Community notification of deaths- to VHSCs, PRIs, NGOs etc - a form of community monitoring to uncover unreported deaths. Ensure that truthful reporting of higher deaths than expected is not met with reprimands but with assistance.					

Indicator	Definition	Numerator	Denominator	Multiplying factor	Suggested level of use	Periodicity of indicator
Under 5 Mortality Rate	Under-five mortality rate measures the number of children who die before their fifth birthday per 1000 live births	Deaths Neonatal + Deaths infant + Deaths 1-5 years	Total number of live births	1000	National, state and district. Below district even the data element by itself provides actionable information	Annual, semiannual
Rationale	Under-five mortality rate is a general indicator of the level of child health, it measures more the socio-economic, environmental and nutrition status of children , rather than direct health care delivery.					
Data Source	Line listing of deaths at Sub Centre; Institutional records Vital registration- registrar of births and deaths; Population census; Population-based surveys, such as DLHS					
Other Useful Indicators	Under 5Mortality Rate can be disaggregated by gender, social class, residence, income etc					
Actions to consider	• Improved notification through line listing by health workers, • Community notification of deaths - improve recording of unreported deaths and increases community action to prevent deaths • Improve quality of care for children through health workers at home					

Indicator	Definition	Numerator	Denominator	Multiplying factor	Suggested level of use	Periodicity of indicator
Peri Natal Mortality Rate (PNMR)	Peri-natal deaths comprise still births (gestation over 20 weeks / >1000 grams weight) plus early neonatal deaths (infants dying within 7 days).	Deaths Peri-natal (still births plus early neonatal in first week)	Total number of live Births.	1000	National and below. Calculate and make predictive trend analysis only when we have at least 3,000 births, otherwise fluctuations will be too high.	Annual, semiannual
Still birth rate	Number of still births per 1000 live births	Total number of still births	Total number of births (Live birth + Still birth)	1000		
Rationale	• PNMR directly reflects maternal health, quality of prenatal, intra-partum and neonatal care. • Peri-natal deaths comprise up to 40% of infant deaths and their reduction is the most important way health services contribute to reducing IMR. • PNMR gives an indication of the quality of maternal and child health services. This indicator includes still births, which are as numerous as first week deaths. Any pregnancy outcome other than a live birth after the pregnancy has achieved 20 weeks would get included in this. The criteria of weight above 1000 gms may have to be ignored if weight of the still-birth/aborted fetus is not available. • All pre-natal deaths should be audited according to national guidelines to identify preventable deaths and improve neonatal care. • A **peri-natal death audit** can provide useful additional information on quality of care.					
Data Source	Registers from Delivery and neonatal wards; Line listing by ANMs; Vital registration; Population census; Population-based surveys, such as DLHS.					
Actions to consider	• Institutions with high PNMR need additional support to identify the causes of the deaths, and will normally need training on neonatal care techniques. • By comparing PNMR with other rates, one can arrive at conclusions about which areas of child care require prioritization.					

Indicator	Definition	Numerator	Denominator	Multiplying factor	Suggested level of use	Periodicity of indicator
Maternal Mortality Ratio	The death of a woman while pregnant or within 42 days of delivery or termination of pregnancy, irrespective of the duration of pregnancy and site of the delivery, from any cause related to or aggravated by the pregnancy or its management but not from accidental causes.	Total number of Maternal deaths	Number of live births	1,00,000	National, State and District. Below District even the data element by itself provides actionable information	Annual, semiannual
Rationale	Maternal mortality Ratio reflects the quality of care during pregnancy and the puerperium. All maternal deaths should be subjected to an audit, according to national guidelines. The indicator monitors deaths related to pregnancy and childbirth. It reflects the capacity of the health systems to provide effective health care in preventing and addressing the complications occurring during pregnancy and childbirth. It is also a Millennium Development Goal Indicator for monitoring Goal 5, improving maternal health.					
Data Source	Line listing of maternal deaths; Labour records and registers maintained at Facilities Civil Registration System(CRS); Community feedbacks					
Other Useful Indicators	A Maternal Mortality Audit should provide detailed disaggregation by: • Cause (sepsis, malaria, PPH, PIH, Obstructed labor, unsafe abortion, anaemia). • Maternal age - under 19 years, over 35 years • Duration of pregnancy – first, second, third trimester, post delivery, place of delivery- home, institution etc. Maternal mortality rate is collected by special surveys					
Common Problems	Maternal deaths are relatively rare events and need large sample size. Under-reporting and classifying a maternal death is a major problem with MMR. It is difficult to collect the data for pregnant women who die at home. Even special surveys have problems getting accurate data because respondents are not keen to talk about these very tragic issues					

G. Other Useful Indicators

QUALITY OF ANTENATAL CARE SERVICES						
Indicator Name	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of use**
ANC Moderately anaemic rate (Hb<11gm)	Percentage of pregnant women tested to be moderately anaemic (Hb level <11g)	Pregnant women having tested for anaemia, Hb<11g	Total number of ANC registered	100	State, District, & Block	Quarterly, annual
ANC hypertension new case detection rate	Percentage of pregnant women detected with hypertension/ high blood pressure (BP>140/90)	Pregnant women detected BP>140/90	Total number of ANC registered	100	State, District, & Block	Quarterly, annual
ANC severely anaemic treated rate	Percentage of severely anaemic pregnant women treated (Hb level <7g)	Severely anaemic pregnant women treated (Hb<7g)	Total number of ANC registered	100	State, District, & Block	Quarterly, annual
Eclampsia management rate	% of eclampsia cases managed during delivery	Number of eclampsia cases managed during delivery	Total deliveries (home + institution)	100	State, District, & Block	Quarterly, annual
Rationale	• Testing for anaemia and hypertension is an indicator of quality of ANC services and also detection of important risks associated with preventable mortality. • Hb<7g and BP>140/90 is a danger sign for pregnant women and should be managed by arranging for referral transport and informing the medical officer in-charge in advance					
Actions to consider	• Address supply side issues. • Ensure quality of ANC. • Awareness generation among mothers to avail complete and quality ANC services.					

JSY COVERAGE						
Indicator Name	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of use**
JSY registration rate	% of pregnant women who were registered under JSY scheme.	Total number of JSY registration	Total number of ANC registered	100	State, district and block	Annual, semiannual
% Institutional Delivery Receiving JSY Benefit	Proportion of women who had received JSY benefit for institutional delivery	Total number of women received JSY benefits for institutional delivery	No. of pregnant women registered for JSY	100	State, district and block	Annual, semiannual
Rationale	• JSY benefits are given to encourage women to come for institutional deliveries, thus reducing maternal mortality. • % of women registered under JSY shows, number of women entitled to benefits under JSY. This includes: only BPL & SC/ST women in HPS states					
Action to consider	• BCC to mothers by ASHA for institutional delivery and JSY benefits. • This is a good indicator for performance monitoring of ASHA programme, as ASHA is suppose to mobilise pregnant women for institutional delivery and JSY.					
SERVICE DELIVERY						
Indicator Name	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of use**
IPD as percentage of OPD	Proportion of IPD out of total OPD.	Total number of in-patient admission	Total number of OPD attendance	100	State and District	Quarterly, annual
Operation major (General and spinal anaesthesia) as %of OPD	Percentage of major operations conducted against total OPD attendance	Operation major (General and spinal anaesthesia)	Tota number of OPD attendance	100	State, District and Block	Annual, semiannual
Operation minor (No or local anaesthesia)as % of OPD	Percentage of minor operations conducted against total OPD attendance	Operation minor (No or local anaesthesia)	Total number of OPD attendance	100	State, District and Block	Annual, semiannual
Dental utilization ratio	Dental Procedures as % of OPD	Total number of dental procedures	Total number of OPD attendance	100	State, District and Block	Annual, semiannual
Bed occupancy rate	Percentage of bed occupancy against total beds available in a facility in a given time period	Sum of inpatient head count at midnight	Total Bed days available (total number of days for which indicator is calculated x total number of beds)	100	Facility	Annual, semiannual

LABORATORY SERVICES - HIV Indicators						
Indicator	**Definition**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of use**
HIV positive as % of HIV tested	Proportion of HIV positive cases(all)out of total tested for HIV.	Total number of patients who were found HIVpositive after test	Total HIV test conducted	100	State, District and Block	Quarterly, annual
Proportion of antenatal women tested for HIV	Proportion of pregnant women who were tested for HIV.	Women tested for HIV during ANC	Total number of ANC Registration	100	State, District and Block	Quarterly, annual
HIV prevalence among antenatal (ANC) tested	Proportion of ANC who were found to be HIV positive after test	Women tested and found HIV positive during ANC	Total number of women tested for HIV during ANC	100	State, District and Block	Quarterly, annual
HIV prevalence among non ANC tested (excluding ANC women)	Proportion of non-ANC who were found to be HIV positive after test	HIV test positive (excluding antenatal)	Number of females HIV tested (excluding antenatal)	100	State, District and Block	Quarterly, annual
HIV prevalence among males tested	Proportion of HIV positive cases among total number of males tested	HIV test positive (males)	Number of males tested for HIV	100	State, District and Block	Quarterly, annual
LABORATORY SERVICES – Malaria						
Annual parasite incidence	Confirmed cases of malaria during 1 year/ population under surveillance) x 1000.	Total no. of blood smears positive for Malarial Parasite in a year	Total population under surveillance	1000	State, District and Block	Annual
Annual Blood Examination rate(ABER)	Number of slides examined of malarial parasites	No. of blood smears examined for Malarial Parasite in a year	Total population under surveillance	100	State, District and Block	Annual
Use	ABER- This parameter reflects the efficiency and adequacy of case detection mechanism					

INCIDENCE SPECIFIC RATES						
Indicator	**Definitions**	**Numerator**	**Denominator**	**Multiplying factor**	**Suggested level of use**	**Periodicity of reporting**
Diarrhoea incidence under 5 years (per 1 000)	The number of children under 5 years with diarrhoea per 1 000 population under 5 years per year.	The number of children with diarrhea under 5years	Total number of children under 5 years	1000	State & District	Annual
Use	• It is assumed that health personnel, through interviewing the person accompanying the child, confirm that the problem most likely is diarrhoea and not just a temporary running stomach due to e.g. intake of certain drinks/ foodstuffs. • Diarrhoeal disease is one of the leading causes of infant/ child mortality, and is closely related to both socio-economic situation and environmental health issues like access to clean water.					
Note	Similar disease specific incidence rates can be calculated for disease reported in HMIS.					

4 Data Quality

AFTER READING THIS CHAPTER YOU WILL BE ABLE TO:

- Describe data quality and its importance.
- Define methods of checking data quality.
- List reasons of poor data quality and explain how to address them.
- Address process to improve data quality.

ACTIVITY -1

HOW ERRORS TEACH US?

Facilitators explain that 5th class students were asked to do a simple multiplication. Given below are a set of results that they got. Which one is correct?

Student 1	Student 2	Student 3	Student 4	Student 5
42	42	42	42	42
x7	x7	x7	x7	x7
=49	=294	=2814	=222	=294

Now facilitator will ask group to try to figure out how each child arrived –logically –at a wrong answer. So instead of scolding the child for the error, he can figure out how the mistake was made and help the child to correct it.

Message

In the above example it is clear that three children had not understood how to manage 'carry over' function. For e.g. the first child did not know the difference between addition and multiplication. Each child can be told how to do 'carry over' and the class can be reviewed on the aspect. But what is interesting is there was a logic behind every error. Only when you understand this logic, we can correct the error.

WHAT IS DATA QUALITY?

Data quality refers to the extent to which data measures what they intend to measure. It is not enough to collect and report data, data should be checked for quality to minimize errors so that they can be used for decision making. Data use is known to improve data quality. Parameters of data quality are:

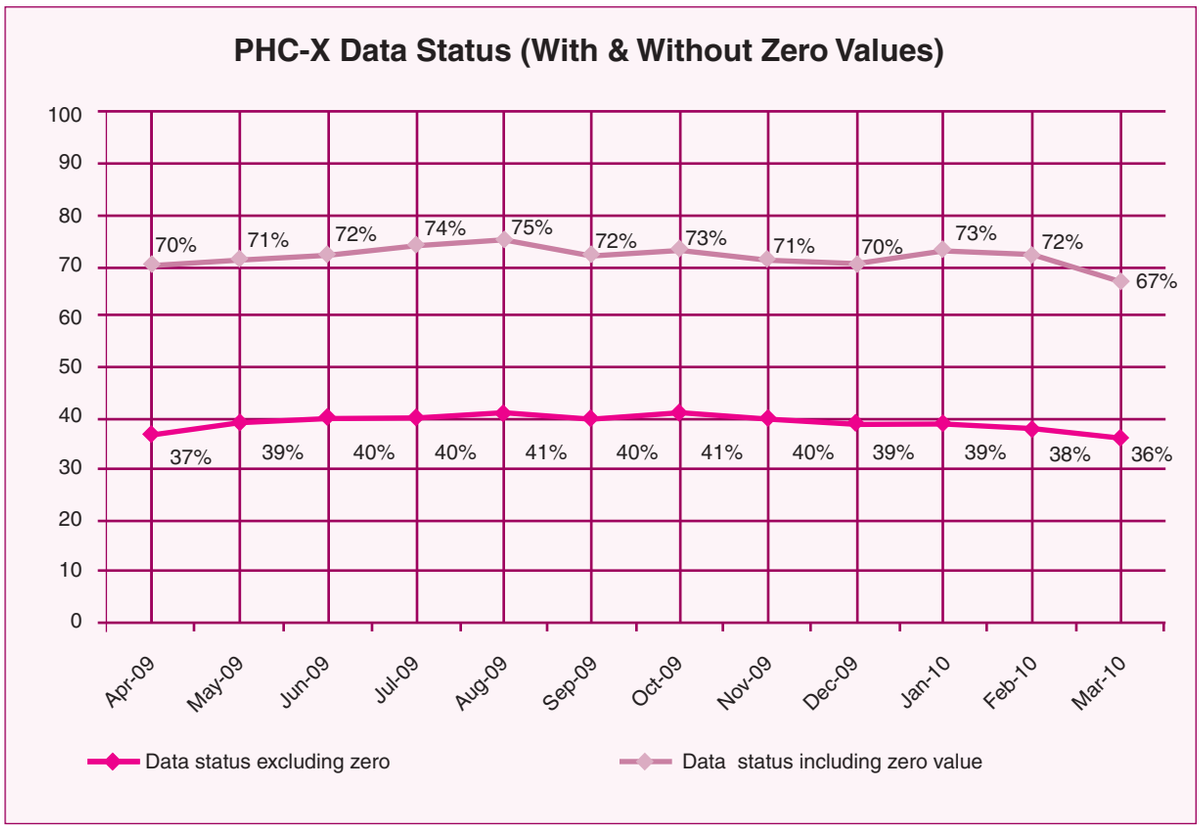
A. COMPLETENESS

Reports are a reflection of services provision and utilization thus an incomplete report will indicate partial service delivery/utilization. Data completeness is assessed for the following:

1. Number of facilities reported against total facilities
2. Number of data elements reported against total data elements in a reporting form.

Ideally, we would like to receive data/reports from all facilities, public or private in an area to get a complete picture of health therefore it is necessary to encourage private facilities to report using either CHC or PHC format.

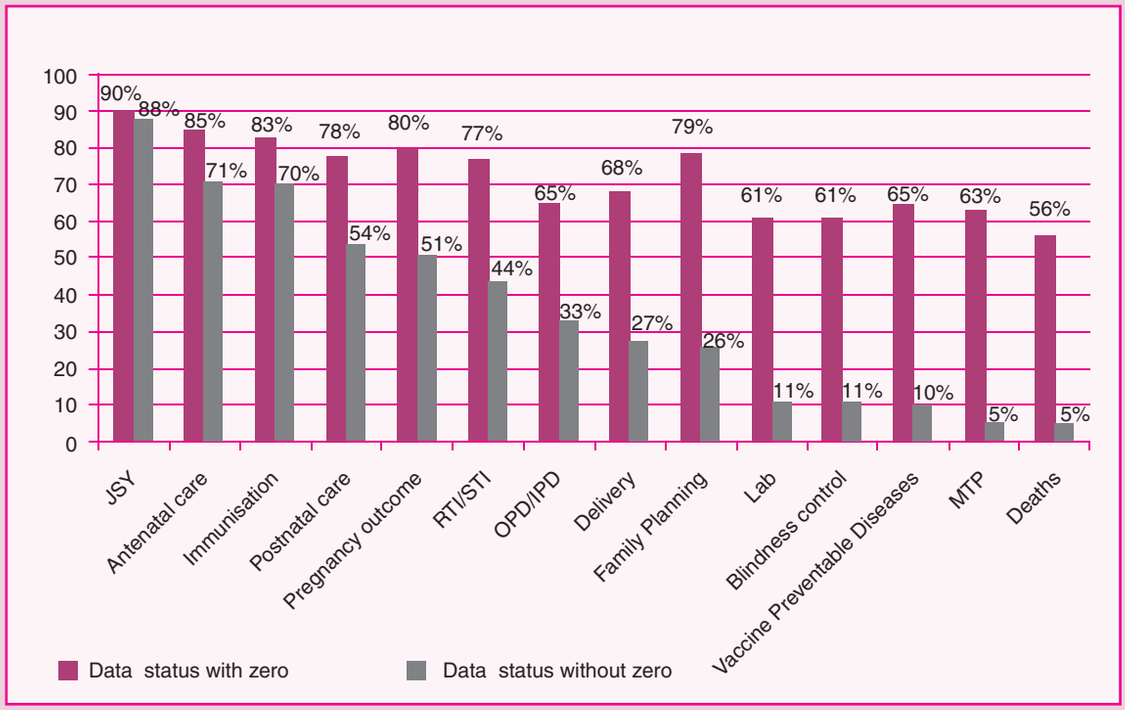
Assessment of data/reporting completeness: While assessing data/reporting completeness, remember that zero and blanks need to be examined carefully. Generate data completeness status report by including as well as excluding zero values to see the difference e.g., PHC-X data status for 12 months is given in the graph below.



We see that data entry status for PHC-X was almost consistent across all months (about 70% data fields had data). However, when one looks at the data status excluding zero values the status reduces by 30% and more. This indicates that out of total data fields filled about 30% had zero values. The reason for such reporting could be unavailability of services in these facilities, unavailability of recording registers for these events, or simple ignorance. This can be overcome by checking for zero/blank values in various data elements groups.

ACTIVITY -2

'Data element group-wise data status' graph for PHC-X is given below. Comment on data completeness and follow up action required.



In practice it is difficult to train data entry operators and system to dif ferentiate zeroes from blanks.

B. TIMELINESS

Timeliness is very important component of HMIS. Timely processing and reporting of data facilitates timely availability of data for decision making. E.g.during monthly meetings in the health department previous month's performance are evaluated and strategic decisions are taken to address the problems. If out of 10 sub-Centers 5 do not submit report on time it will be difficult for the MO to assess the performance and develop a plan for PHC in particular and of sub-Centers in general. Chapter 1 presents report submission schedule for all the facilities. Adherence of this schedule can improve data quality.

While analyzing data, remember to leave out the most recent month for analysis, if timeliness of reports of some units is known to be poor.

C. ACCURACY

Accuracy refers to the correctness of data collected in terms of actual number of services provided or health events organized. Inaccurate data will yield incorrect conclusions during analyses and interpretation. Small errors at facility level will cumulate into bigger mistakes since data from various providers/facilities are aggregated. Poor data accuracy could be due to following four factors:

1. Gaps in understanding of data definitions and data collection methods
2. Data recording and data entry errors
3. Systemic errors- logical errors embedded in the system due to which these errors remain unless underlying systemic issues are corrected
4. Misreporting

First factor has been discussed in Competency 1. In this chapter, we discuss both data entry errors and systemic errors. We do not discuss dishonesty in reporting except to note that very often this is not the major source of error. Many Programme Managers, quite lazily and erroneously jump to the conclusion that poor data quality is due to false reporting or dishonesty in reporting. But if we check across the Districts and we find the same mistake in all, then we can be sure that these are systemic errors. Even if the error occurs in only one District, one should check for completion of reporting and then for data entry errors and if neither are found, then search for a systemic errors. This lesson helps to identify the reasons behind poor quality of data, the methods of measuring data quality, and the ways to improve it.

Example: Examine ANC data reported by all the blocks of District X and check for accuracy in data.

Data elements	Block A	Block B	Block C	Block D	Block E
Total ANC registrations	1230	1367	2359	1667	991
Total number of women given 100 IFA tablets	1008	1300	235999999	166700	784953
ANC 100 IFA coverage rate	82.0%	95.1%	10004239%	10000%	79208%

Observations

1. Block A & B have reported correct figures and no problem was found while processing/analyzing data.
2. Block C reported high number of IFA beneficiaries but looking at the figure, one can easily identify typing mistake rather than any systemic problem in reporting.
3. Probably Block D reported number of tablets given rather than number of pregnant women.
4. Data from Block E is intriguing; on enquiry the Block had included lactating women and adolescents as IFA beneficiaries.

ACTIVITY -3

COIN TOSS

Facilitator announces that he will toss a coin and call out the result (Heads or Tails) to Person A without showing him the coin. Person A will write the outcome on chart paper for everyone to see. Then facilitator tosses the coin and says' heads'. The person A writes down. Facilitator tosses the coin again, and again calls out 'heads' and again the person A writes it down. Facilitator continues to repeat this.

At one point the audience has lost 'confidence' in what the facilitator is doing. This usually happens at fourth or fifth toss.

Do this until the audience starts mocking or suspecting Person A for lying about the coin tossing heads repeatedly.

Message

We expect certain outcomes from any activity we do. In this context the expected outcome was "Heads" and "Tails"If the outcome continues to be within suspected range we do not suspect. We can expect 'heads' to repeat itself once or twice by chance but if it repeats many times it is still possible but less and less likely we suspect it. Most HMIS data elements conform to a pattern. if they do not conform to the pattern – it may be because of wrong data entry or because of some factor causing a change in the programme .Statisticians therefore define a confidence level for each data element and then declare any data element falling outside this as a 'statistical outlier'. Do not assume that an 'outlier' data is wrong but use it as a clue to look for data entry errors or programme changes.

We will also use validation rules to detect data errors. These check for logical inconsistencies between different data elements that are related to each other.

D. DATA ENTRY ERRORS

Data entry errors could be due to…

1. Typing errors: wrong numbers typed in computer
2. Wrong box entry: data entered in wrong box e.g., 'ANC registration' data entered in 'Registration in first trimester'.
3. Calculation errors: during data entry basic computation happens if formulae are incorrect then errors can happen.

Data entry errors can be corrected through:

Visual scanning

Through simple but careful examination of complete report many errors can be identified and rectified. Once data entry is complete and a report is ready it should be checked for missing values, calculation mistakes, abnormal figures etc. Examine the table below and identify common errors.

	PHC A	PHC B	PHC C	PHC D
Total ANC registration	281	328	491	267
Early ANC registration	90	100	214	95
ANC Third visits	211	309	425	186
ANC given TT1	247	295	424	250
ANC given TT2 or Booster	277	305	425	231
ANC given 100 IFA	276	296	438	253
ANC moderately anemic < 11 gm	68	67	114	51
ANC having Hypertension –New cases	20	76	15	4711

Very high

Performing validation checks

Validation is also a means to check accuracy. Validation is performed by comparing values of 2 (or more) data elements that are related . One (or more) data elements are placed on left side and other data element(s) are placed on right side with an operator separating both sides e.g. 'Early ANC registration' is a part of 'ANC registration' and it can equal to 'ANC registration' or it will be less than or equal to 'ANC registration' but it can't be greater than 'ANC registration'. This rule can be expressed as:

Validation rule	Left side	Operator	Right side
Early ANC registration is less than or equal to total ANC registration	Early ANC registration	≤ (less than or equal to)	Total ANC registration

It is important to note that violation of a validation rule does not always indicate error. You need to know that sometimes inconsistent/unexpected values may be due to management issues like availability of vaccines or medicines in stock, disease outbreak, etc. Violation of validation rule prompts you to enquire and check/ verify data until satisfactory answer is not found.

In the table below some validation rules are given, you can also make your own validation rules to overcome errors.

Table: 1 Frequently used validation rules

DATA VALIDATION RULES	
1	**ANTENATAL CARE**
I	ANC registration should be equal or greater than TT1
II	Early ANC registration must be ≤ to ANC registration
2	**BLINDNESS CONTROL**
I	Eyes collected should be more or equal to eyes utilized
II	Patients operated for cataract should be more than or equal to number of IOL implanted
3	**DELIVERIES**
I	Caesarean Deliveries must be ≤ to institutional deliveries
II	Deliveries discharged under 48 hours ≤ deliveries at facility
III	BCG given should be ≤ Deliveries
IV	OPV0 given should be ≤ Deliveries
V	Total deliveries should be equal to live births + still births
4	**IMMUNISATION**
I	BCG should be ≤ to live births
II	Immunisation sessions planned should be greater than or equal to sessions held
III	Measles dose given should be greater than or equal to full immunization
5	**JSY**
I	ASHAs and ANMs/AWWs paid JSY incentive for institutional deliveries is ≤ to mothers paid JSY incentive for institutional deliveries
II	JSY incentive for home delivery must be ≤ to home deliveries at sub-Centre
III	JSY incentive to mother should be ≤ total deliveries
IV	JSY registration must be ≤ to new ANC registrations
6	**NEWBORNS**
I	Newborns breastfed within 1 hour are < total live births

II	Newborns weighed at birth ≤total live births
III	Newborns weighing less than 2.5 kgs ≤total newborns weighed
7	**POST NATAL CARE**
I	Women receiving first (within 48 hour) post-partum checkup ≤ to total live births plus still births

Identification of statistical outliers

Statistical outliers are numbers that do not conform to the trend or are unexpected values. In statistical terms, if the value lies 1.5 Standard Deviations away from the range it is identified as an outlier. This often helps to identify data entry errors or large computation mistakes.

ACTIVITY -4

Check your last month data using any of the five validation rules. Make group of 4-5 participants. Pick any of the last month's report of your district/facility . Apply any five validation rules given in the table. Identify validation queries and find out what reasons could be for these queries.

E. SYSTEMIC ERRORS

This leads to poor data quality are listed below with possible solutions.

Problem 1: Errors due to multiple registers or poorly designed registers.

Recording of information in multiple forms and formats is monotonous which adds to "data weariness". An ANM maintains 10-15 registers for various services that she provides. Let's review the following account of an ANM to understand this better…

"I travel to 15 hamlets for conducting immunization sessions. In same sessions I also provide outpatient care, antenatal, as well as postnatal care-how many registers should I take with me? I, therefore, often take notes in my diary and then come home and fill the registers. But in this process sometimes one or other essential information is missed out. Yet, my informal diary is my main recording register.

Such modification of the process can lead to unintentional misreporting and errors. For some data elements she has probably captured all information for others she has not. Quality of our data is hence dependent on skills and priorities of service provider. Another major problem is that many data elements that are reported have no place in the recording registers.Commonly missing data elements in recording registers are listed below:

Commonly Missing Data Elements in Recording Registers

1. Breast feeding within first hour
2. New cases of hypertension
3. Failure/complications and death due to sterilization
4. Adverse event following immunization
5. IUD removals
6. Hb test for ANC
7. Midnight head count
8. Total number of times ambulance used for transporting patients
9. Adolescent counseling services
10. JSY registration at time of ANC
11. Total number of 9-11 months old fully immunized children etc.

Possible Solutions

a. Create a compact 'Service Delivery Recording Register' for ANM to carry to the field. This register should have all relevant data elements related to ANC, PNC, Immunization, Family Planning, and OPD. (See Chapter 2) Then when she comes back to her office she transfers the data onto each specific child health, maternal health, eligible couples register.

b. Discourage recording in 'rough diaries'.

Note: There are other possible ways to address this issue, which are not discussed here. Many states have now reduced their registers to manageable 6 or 7 numbers. Good practice may be shared and replicated among states.

Problem 2: Misinterpretation of Data Elements

All data elements need to be clearly defined and understood by all staff who are engaged in data collection, entry, editing, analysis, reporting, etc. A uniform understating of definition of data elements can minimize misinterpretation and misreporting. Ambiguous definitions, non-standard use of terms, and inadequate support to staff in use of data are some problems that need to be addressed e.g. the table below reports 'Number of pregnant women given 100 IFA tablets' in Districts A&B. District A is reporting that 25 pregnant women were given 100 IFA tables, whereas, District B is reporting that 3500 IFA tablets were given to pregnant women. In absence of clear definition and interpretation such errors are commonly seen.

Data Element	District A	District B
Number of pregnant women given 100 IFA tablets	25	2500

Solution

Each data element needs to be clearly defined and interpreted not only in English language but also in local language.

Data dictionary **must** be available with every service provider recording or reporting data.

Problem 3: Consistency of terms used

It refers to the alignment between the recording and the reporting registers. All data collection tools (registers, tally sheets, formats, etc.) should be uniform and in harmony so that reports are comparable across facilities and data quality can be maintained. Absence of data element(s) from records or reports results in missing or wrong data. E.g., recording format of a sub-Centre in one State does not have data element, 'ANC registration in first trimester', whereas the reporting format has it. Consequently, data element either gets reported as blank or as zero, implying that no women at that sub-center were registered for ANC in first trimester.

Solution

Step 1: Review and compare recording and reporting formats at each level to identify data elements that are missing.

Step 2: List data elements that are duplicated in two or more of her reporting registers, e.g., Births or Deaths.

Step 3: Add rows and columns in recording register to accommodate missing data elements.

Step 4: Make notes against data elements that are duplicated, in order to ensure consistency in reporting.

Problem 4: Computation problem

There is potential for error during data aggregation and compilation. Certain data elements which although belong to one group cannot be added together to generate aggregate numbers e.g. reporting 'total no. of 9-11 months old fully immunized (BCG+DPT123+OPV123+Measles) children in one month' from the data available in Table X below.

Table shows Immunization of children aged 9 to 11 months.

Child Immunization	No. of children
BCG	10
DPT1	12
DPT2	12
DPT3	9
OPV0	9
OPV1	10
OPV2	10
OPV3	9
Hep B1	5
Hep B1	5
Hep B1	8
Measles	10

Solution

X Incorrect data compilation	√ Correct data compilation
Add all the numbers and report that 109 children aged 9-11 months were fully immunized in a month.	Only those children who have received BCG, all three doses of DPT, three doses of OPV and Measles dose will be counted as fully immunized (Note: *All children who have received Measles dose during the month may or may not be fully immunized.*)

Problem 5: Problem in data aggregation

If data are entered as Block/District consolidated report in HMIS application and the Data Entry Operator manually aggregates data to make consolidated reports, there is always chance for error. See the table below, data of 5 Blocks is aggregated to prepare the 'District report' but total values of Blocks and Districts don't match.

REPRODUCTIVE AND CHILD HEALTH							
Ante Natal Care Services	**Block A**	**Block B**	**Block C**	**Block D**	**Block E**	**Block Total**	**District Report**
Total number of pregnant women registered for ANC	387	457	2114	2076	2586	7620	11110
Of which number registered within first trimester	20	288	2142	1636	1202	5288	5288
New women registered under JSY	0	401	169	1765	1588	3923	5445
Number of pregnant women received 3 ANC check ups	2984	239	1357	1679	124	6383	6383
TT1	3446	697	1966	1974	2974	11057	11057
TT2 or Booster	3306	520	1633	1668	2882	10009	10009
Total number of pregnant women given 100 IFA tablets	141	284	41893	235	3349	45902	52022
New cases of pregnancy hypertension detected at institution	0	255	0	5	370	630	630
Number of eclampsia cases managed during delivery	0	0	0	17	2	19	19

Solution

It is better to have facility-wise data entry in HMIS application to reduce errors and to improve decision making. However, if not possible MS Excel sheets can be used to aggregate data from all facilities to make District or Block reports. This will reduce chances of aggregation mistakes.

Problem 6: Lack of written guidelines & procedures

If HMIS guidelines are not in place, health workers will not have clarity e.g. if data are entered at Block as 'Block consolidated report' and few facilities have not reported, what actions Data Manager should take?

a. Make block report based on available data and exclude data for facilities that did not report.
b. Impute previous month's data
c. Impute data of same month but of previous year
d. Estimate data/values based on numbers reported in neighboring locality.

Solution

In absence of consistent protocols for missing/incomplete data it is very difficult to procure good quality data. It is important to have detailed guidelines on what should be done when data are not reported / received. Blocks should report all data they have and explain which facilities did not report and why. Also, if backlog data are entered, then an explanatory note should be appended.

Problem 7: Logistic Problems

Non-reporting or inconsistent reporting can be due to shortage of printed forms or the traveling time to submit report. There is shortage of printed forms and registers required for record keeping. Most of the time quality of reporting forms due to repeated photocopy remains very poor. As a result, health workers design and create their own forms which are different from the prescribed formats and the consistency of data varies .

Solution

Facilities should be provided with the reporting forms adequately on annual or six monthly basis as desired by the state. Clear instructions should be given to field staff that report data on printed forms and no other forms will be accepted for reporting.

Problem 8: Duplication

Data duplication is a frequent problem and it does hamper data quality. In many cases, ANM also reports services that are delivered by facilities such as PHC, CHC, or hospital. Data duplication leads to false higher coverage of services and inaccurate decision making. For example, if a pregnant woman delivers in the CHC, the ANM should not report this delivery. She can record this delivery in her register because the pregnant woman is registered with her but she should not report it. If ANM reports this delivery and CHC also reports, this leads to duplication.

Solution

ANM should report only for the services that she provided herself (except births and deaths which are reported for the area and not the facilities). ANMs should be clearly informed and explained this guideline.

Problem 9: Data reported for nonexistent services

These refer to the services reported form the facilities or by sub-Centre which are not available with them. For example, if the haemoglobinometer is not available and the ANM reports 'pregnancy anemia' based on her perception during ANC, it adversely affects data accuracy because ANM may overestimate or underestimate anemia cases.

Solution

Data reporting guidelines should be followed strictly by all. Data dictionary must be available at the facility level for further reference.

Problem 10: Reporting of missing values or lower figures

This refers to a common problem of "compensatory low figure reporting" because high values were reported in previous months. This mostly occurs when previously reported higher values were identified as outliers. To compensate or to "fix the numbers" lower values/zero values are reported even when services were provided or health events did take place.

Solution

As explained above, HMIS Managers should check and verify statistical outliers or unusual numbers against the field records and if values are genuine then instead of asking field staff to compensate the data an explanatory note should be send to the higher level.

Problem 11: Wrong choice of indicators /denominators

This refers to a common problem where data element itself is correct but denominator chosen is inappropriate e.g. when estimating the population of a district one has to extrapolate the population from 2001 census data to the mid-year population of the corresponding year then from this number derive expected population for different age groups and categories. Failure to extrapolate will lead to higher rates or we may be counting the numerator only from public health facilities whereas the denominator may included all patients seen by both public and private facilities e.g. while calculating C-section rate against expected pregnancies this too could lead to misinterpretation. In some districts migration could affect denominator and so on.

What to do if the error has been found in report?

- If the error was found in the facility report, then go back to the registers and check the value, correct it, and also mark a note about the change made.
- Make sure that your staff understands meaning of this data element.
- Ensure that registers have space to record these data.
- In the forthcoming month, check the value to ensure that they have understood the importance of this procedure that you followed.
- It is important that data reporting guidelines are strictly adhered to. There can be unique situations where strict adherence to guidelines might not be feasible, these should be made note of and Government Orders should be requested to resolve such errors.

5 Use of Information

The use of information for action requires the interpretation of information in context. It also requires sound knowledge of public health and of the ongoing programmes in the district. A wise Public Health Manager will look for what information she/he can use for improvement of health in the area. In this chapter, we give the District data analysis of some districts and look at the possible action Programme Managers could have taken assuming that data quality is reasonable.[1]

When training District Programme Manager/district teams, always use data of their district. Please note that the data is presented on a standard district analysis format. Data on all such districts –annual and quarterly should be prepared by district HMIS Managers and learning how to do this is one of the skills that could be acquired in this training.

1. State specific District template will be used for training in the State.

SAMPLE DATA ANALYSIS OF TWO DISTRICTS

DATA ANALYSIS & INTERPRETATION

(Hypothetical Illustration)

Examine data (Apr'09-Mar'10) derived from Pithoragarh (Uttarakhand) and Murshidabad (West Bengal) and answer the questions below.

Table 1 (Hypothetical illustration)

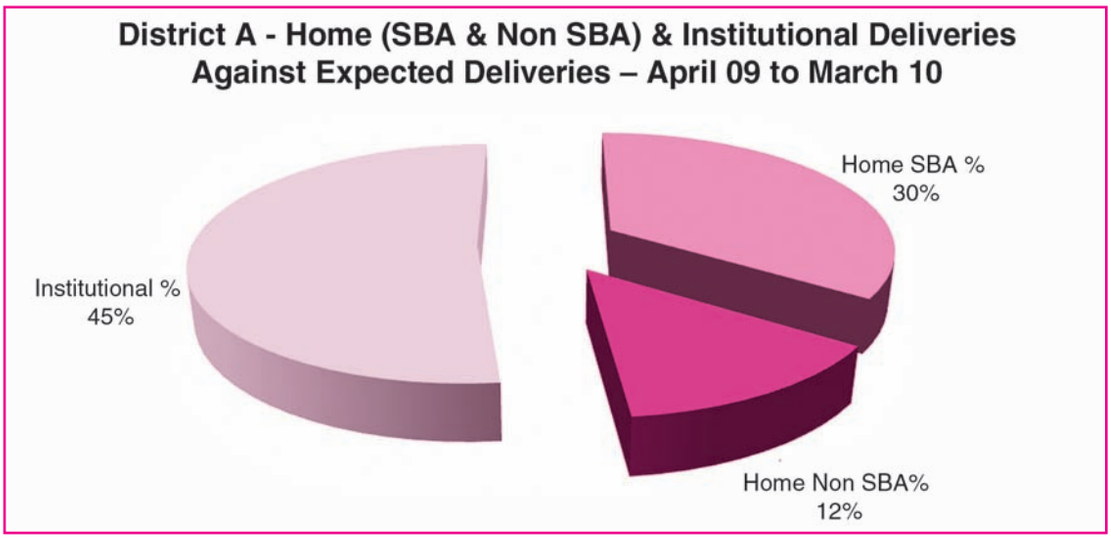
DISTRICT A- SUMMARY-APR'09 TO MAR'10			
ANC			
ANC Registration against Expected Pregnancies	98%	TT1 given to Pregnant women against ANC Registration	87%
3 ANC Checkups against ANC Registrations	84%	100 IFA Tablets given to Pregnant women against ANC Registration	88%
Deliveries			
Unreported Deliveries against Estimated Deliveries	13.5%	Home Deliveries(SBA& Non SBA) against Estimated Deliveries	41.4%
Institutional Deliveries against Estimated Deliveries	45.1%	Home Deliveries(SBA& Non SBA) against Reported Deliveries	47.9%
Institutional Deliveries against Reported Deliveries	52.1%	C Section Deliveries against Institutional Deliveries(Pvt & Pub)	4%
Births & Neonates Care			
Live Births Reported against Estimated Live Births	86%	New born weighed against Reported Live Births	91%
Still Births (Reported)	124	New born weighed less than 2.5 kgs against newborns weighed	22%
Sex Ratio at Birth	807	New born breastfed within one hr of Birth against Reported live Births	88%
Child Immunization(0 to 11 months)			
BCG given against Expected Live Births	97%	Measles given against Expected Live Births	95%
OPV3 given against Expected Live Births	98%	Fully Immunized Children against Expected Live Births	92%
DPT3 given against Expected Live Births	98%		
Family Planning			
Family Planning Methods Users (Sterilizations(Male &Female)+IUD+ Condom pieces/72 + OCP Cycles/13)	14,849	IUD Insertions against reported FP Methods	40%

Sterilization against reported FP Methods	12%	Condom Users against reported FP Methods	30%
		OCP Users against reported FP Methods	18%
Other Services			
OPD	324,529	Major Operations	1,122
IPD	17,426	Minor Operations	2,410

Table 2

District A- Deliveries Apr'09 to Mar'10				
Total Population	**521,738**	**Expected Deliveries**		**10,707**
Home SBA	Home Non SBA	Institutional	Total Deliveries Reported	Unreported Deliveries
3,164	1,271	4,827	9,262	1,445
Home SBA %	Home Non SBA%	Institutional %	Total Deliveries Reported %	Unreported Deliveries %
30%	12%	45%	87%	13%

Figure 1



Q1. Examine the pattern of deliveries in Figure 1. Suggest measures to reduce unreported deliveries? ("Pregnancy tracking" can be a possible option but it is not self explanatory)

Answers

a. Identify blocks or facilities where % of unreported deliveries is more. Check hamlets that are getting excluded from service delivery.

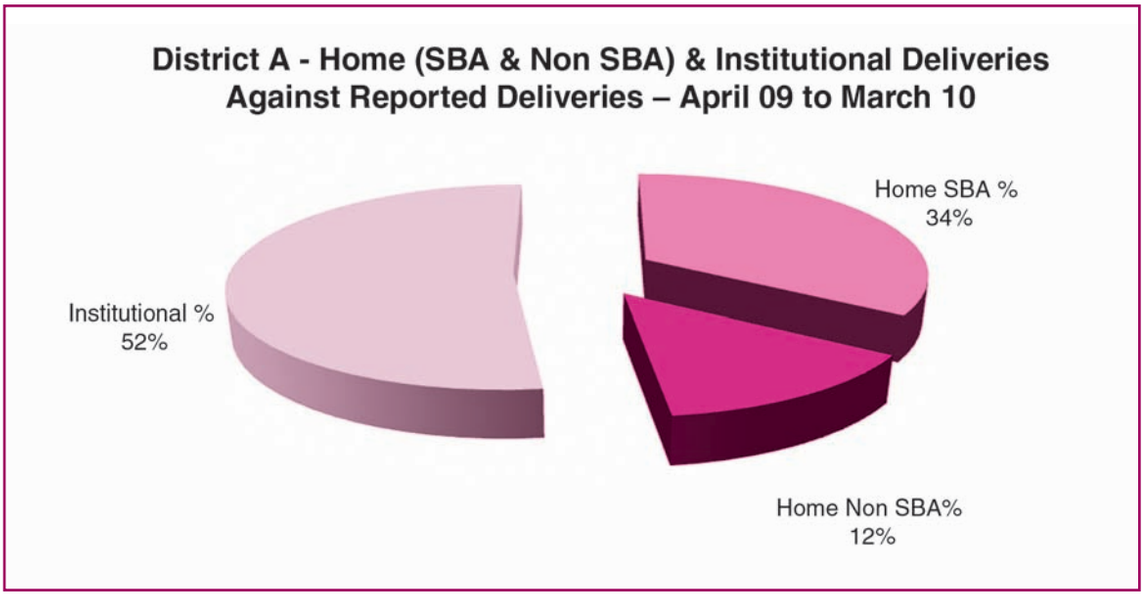
b. Check in villages if unreported deliveries are home or private sector deliveries. If its private sector, the effort should be towards bringing private sector through PPP especially if poor section is using it for access. If it is home Non SBA delivery the effort should be to improve access which would require better ASHA support, transport arrangement, or arranging SBA for home delivery.

Table 3

District A- Blocks - Deliveries - Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8) CHC	District A District Hospital	District A
Estimated Deliveries	1,047	1,146	1,443	945	1,319	1,600	1,027	1,058	1,263	10,848
Home SBA	191	66	639	200	245	888	179	756	-	3,164
Home Non SBA	137	166	189	85	164	333	27	170	-	1,271
Total Home Deliveries	328	232	828	285	409	1,221	206	926	-	4,435
District A- Blocks-% Home Deliveries against expected Deliveries	31%	20%	57%	30%	31%	76%	20%	88%	0%	42%
Institutional (Pub)	165	589	292	367	28	283	214	133	2,756	4,827
Institutional (Pvt)	-	-	-	-	-	-	-	-	-	-
Total Institutional Deliveries	165	589	292	367	28	283	214	133	2,756	4,827
District A- Blocks - % Institutional Deliveries against expected Deliveries	16%	51%	20%	39%	2%	18%	21%	12%	218%	45%
Total Reported Deliveries	493	821	1,120	652	437	1,504	420	1,059	2,756	9,262
District A- Blocks - % Unreported Deliveries against expected Deliveries	53%	28%	22%	31%	67%	6%	59%	0%	-	13%

Q2. Unreported deliveries are very high in 3 blocks (Block (5), Block (7) & Block (1) PHC). In which Blocks unreported deliveries are due to deliveries taking place in private sector or at DH? In which blocks its due to home deliveries? (Table 3)

Figure 2



Q3. Table 3 shows that maximum home deliveries are in Block (6) CHC and Block (8) CHC, both very distant blocks. Which services/intervention will you emphasis upon in your plan for these 2 blocks?

Answers

a. Make home deliveries safer

b. Develop institutional site close to where are mandated

c. If there are villages that are too far to reach for ANM think of alternative service providers.

Q4. In Block (5) PHC block only 2% deliveries were in institution. This is very less compared to other blocks of the district. Why is insitutional delivery rate so poor in this block? What steps can be taken to improve institutional delivery rate in this block? (Table 3)

Table 4

District A- C sections & Complicated Deliveries Apr'09 to Mar'10		
	Institutional Deliveries (Public)	Institutional Deliveries (Pvt)
	4,827	-
C Section	206	-
C Section%	4%	-
Complicated Pregnancies attended	653	-
Complicated Pregnancies attended %	14%	-

Figure 3

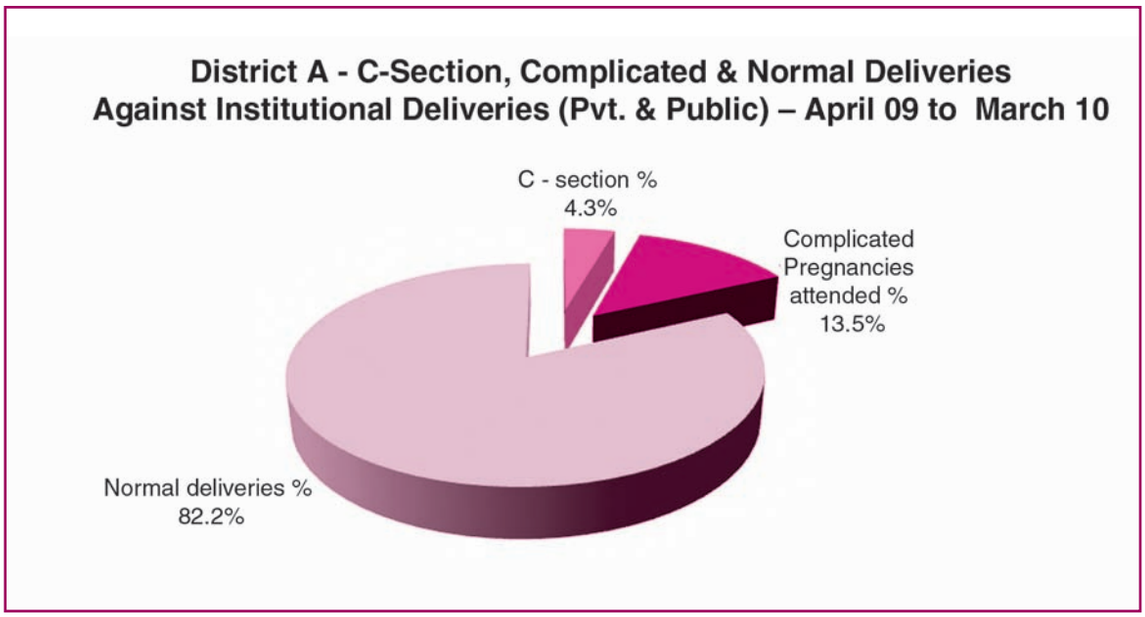


Table 5

District A- Blocks - C- Section Deliveries -Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8)CHC	District A District Hospital	District A
Total Reported Institutional Deliveries	**165**	**589**	**292**	**367**	**28**	**283**	**214**	**133**	**2,756**	**4,827**
C- Section Deliveries (Pub)	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**	**206**
C- Section Deliveries (Pvt)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total C- Section Deliveries (Pub & Pvt)	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**180**	**206**
District A- Blocks - C - Section deliveries against Institutional(Pub & Pvt) deliveries	16%	0%	0%	0%	0%	0%	0%	0%	7%	4%

Q5. Examine data in Figure 3 & Table 5, C-sections rate and complicated deliveries rate are much lower than expected. Moreover, all C-sections are from District A which is approx. 10 hrs away from Block (8) PHC& there is one another Block(1)PHC which is also 26 hrs away . Similarly, complicated deliveries indicate same pattern. What are the implications for planning?

Answers

a. Should refer to location & number of FRUs & 24*7 PHCs (CEmOc & BEmOc facility)

b. Location & number of CEmOc & BEmOc facility

c. Check this on a map of FRUs & PHCs of this district & state accordingly.

Table 6

District A- Complicated Pregnancies & Deliveries Treated - Apr'09 to Mar'10					
Reported Deliveries			**Reported ANC Registration**		
9,262			11,268		
Complicated Pregnancies attended	Complicated Pregnancies Rate	C - Section Deliveries	PNC Maternal Complications	Abortions	Still Births
653	6%	206	119	159	124
Complicated Deliveries Treated with				No Of Eclampsia cases Treated	No Of severe anemia cases treated
IV Antibiotics	IV antihypertensive/ Magsulph injection	IV Oxytocis	Blood Transfusion		
472	35	713	316	2	291

Q6. Examine data in Table 6. Complicated deliveries treated with IV antibiotics is 472 IV, antihypertensive is 35, & IV oxytocis is 713, blood transfusion is 316 & Eclampsia is 2. All reported only from DH. Health services are not available across the district, what are the implications of such concentrated service delivery on the quality of services in the rest of the district?

Figure 4

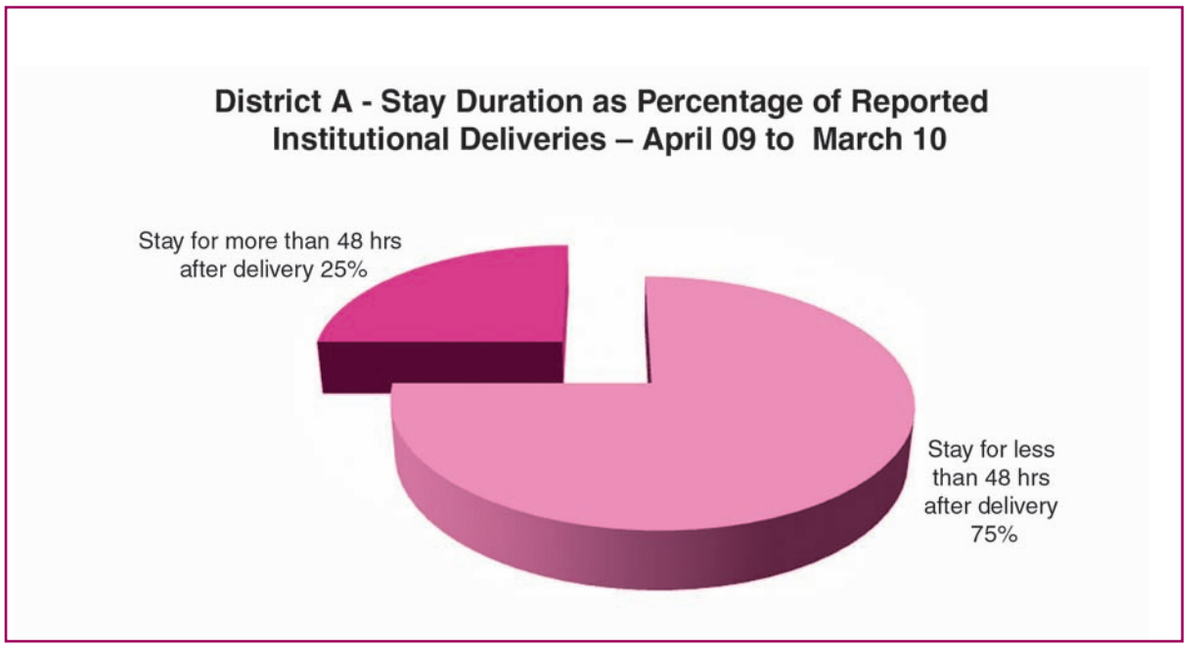
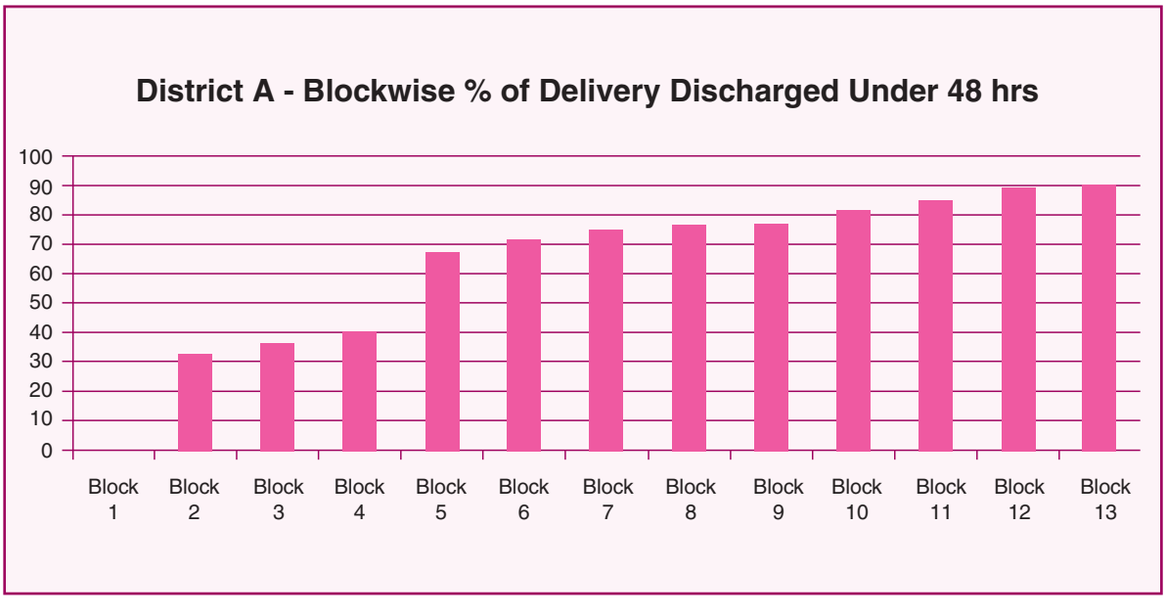


Figure 5



Q7. Examine data in Figure 4&5. Only 25% women stayed more than 48hrs after delivery. This indicates poor quality of institutional care and poor transportation (hiring transport from distance area is difficult therefore mothers try to return in the same vehicle that brought them). Examine block data for the same and comment.

Figure 6

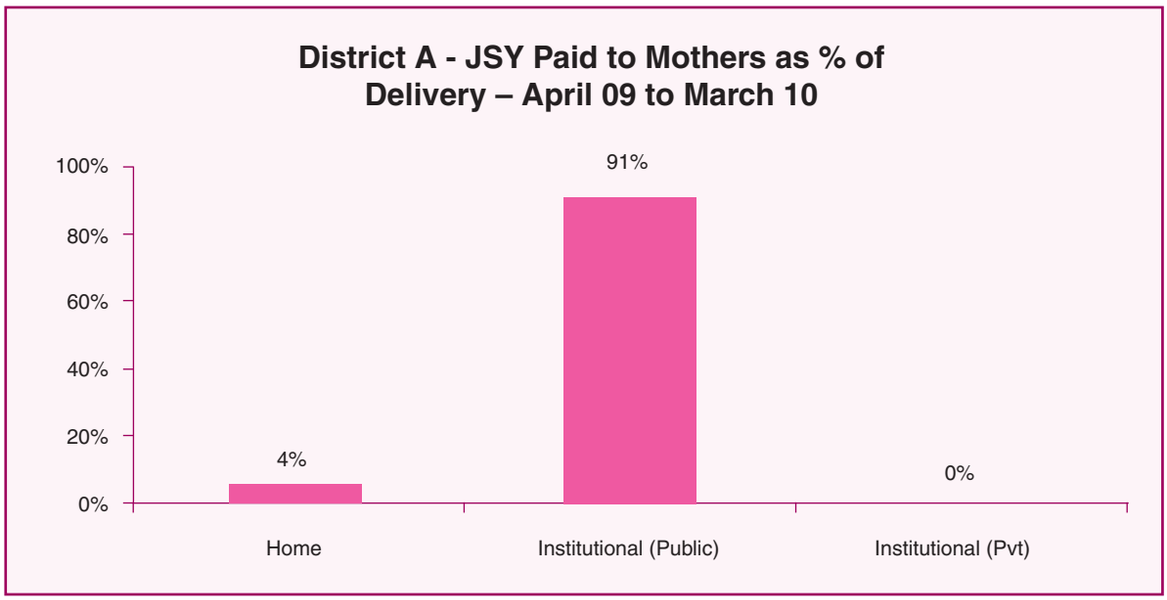


Table-7

District A- Blocks- JSY Payments- Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8) CHC	District A District Hospital	District A
Home Deliveries	**328**	**232**	**828**	**285**	**409**	**1,221**	**206**	**926**	-	**4,435**
JSY Paid to mothers for Home Deliveries	**9**	**2**	**119**	**3**	**15**	**0**	**13**	**1**	**0**	**162**
District A- Blocks - JSY paid to mothers -%age of Reported Home deliveries	**3%**	**1%**	**14%**	**1%**	**4%**	**0%**	**6%**	**0%**	-	**4%**
Institutional Deliveries(Pub)	**165**	**589**	**292**	**367**	**28**	**283**	**214**	**133**	**2,756**	**4,827**
JSY Paid to mothers for Institutional Deliveries(Pub)	**86**	**579**	**276**	**269**	**40**	**271**	**210**	**133**	**2531**	**4395**
District A- Blocks - JSY paid to mothers -%age of Reported Institutional deliveries - Public	52%	98%	95%	73%	143%	96%	98%	100%	92%	91%
Institutional Deliveries(Pvt)	-	-	-	-	-	-	-	-	-	-
JSY incentive paid to mothers for Institutional Deliveries(Pvt)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Q8. As per JSY norm for every pregnant woman is eligible for JSY incentive, if she delivers in an institution. 91% of institutional deliveires in the district received JSY payment (Figure 5). Examine Table 7, Block (1) PHChas given JSY payments to only 52% of institutional deliveries. Why JSY payement in Block(1) PHC is lower than other blocks? Identify reasons and possible actions you would take to improve JSY payments in the blocks.

Answers

a. Money did not reach

b. Money disbursement was late

Figure 7

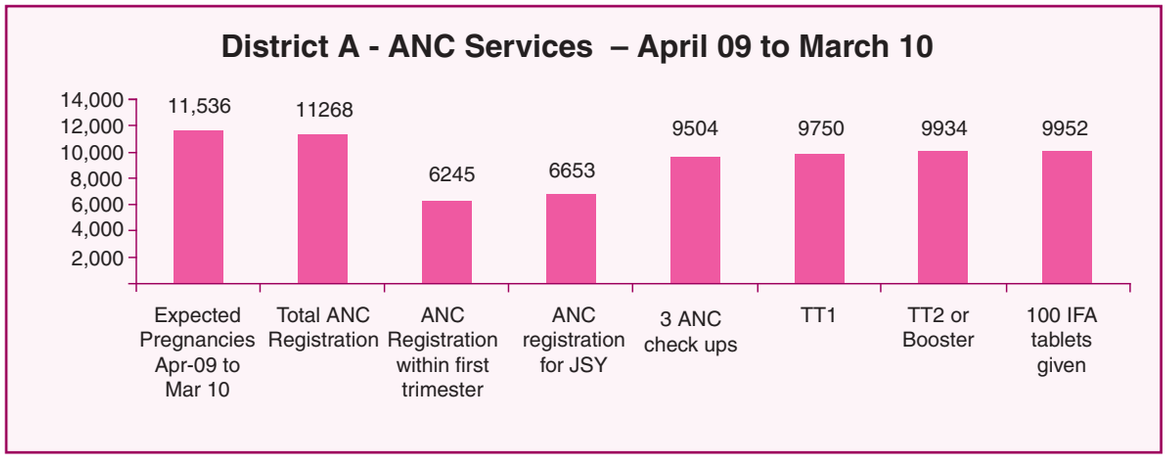


Table 8

District A- Blocks- ANC Services -Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8)CHC	District A District Hospital	District A
Reported ANC Registration	977	1187	1285	858	1271	2091	985	1074	1540	11268
Total number of pregnant women given 100 IFA tablets	976	1273	1250	1066	1164	2146	898	993	186	9952
District A- Blocks- % ANC Pregnant Women given 100 IFA Tablets against Reported ANC Registration	100%	107%	97%	124%	92%	103%	91%	92%	12%	88%

Q9. As per RCH norms, every pregnant woman should get at least 100 IFA tablets. District has provided IFA to 88% of pregnant women registered (Figure 7). See Table 8, all blocks have more than 90% of IFA coverage except District A Hospital. This is extremely low considering high coverage in all blocks. While planning for maternal health how will you use this information?

Figure 8

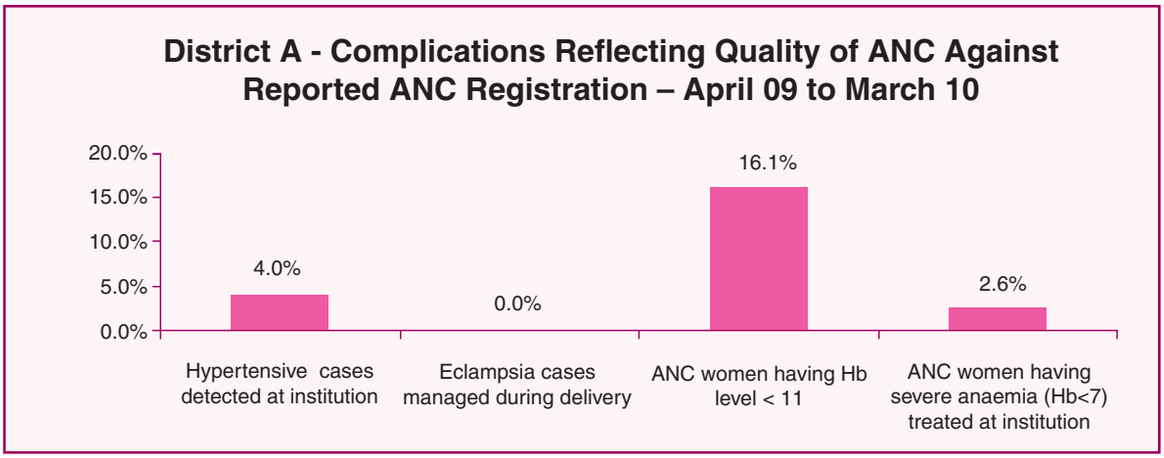


Table 9

District A- Blocks - Complications Reflecting Quality of ANC- Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8)CHC	District A District Hospital	District A
Reported ANC Registration	977	1187	1285	858	1271	2091	985	1074	1540	11268
New cases of BP detected at institution	76	11	83	55	52	32	96	0	45	450
District A- Blocks - % High BP cases detected against Reported ANC Registration	7.8%	0.9%	6.5%	6.4%	4%	2%	10%	0%	3%	4%
Number of Eclampsia cases managed during delivery	0	0	0	0	0	0	0	0	2	2
District A- Blocks - % Eclampsia Cases Managed against Reported ANC Registration	0.0%	0.0%	0.0%	0.0%	0%	0%	0%	0%	0%	0%
Number having Hb level<11 (tested cases)	0	0	373	49	17	2	25	99	1248	1813
District A- Blocks - % HB<11 gms against Reported ANC Registration	0.0%	0.0%	29.0%	5.7%	1%	0%	3%	9%	81%	16%
Number having severe anaemia (Hb<7) treated at institution	0	0	110	35	0	0	0	26	120	291
District A- Blocks - %Severe Anaemia(HB < 7) treated against Reported ANC Registration	0.0%	0.0%	8.6%	4.1%	0%	0%	0%	2%	8%	3%

Q10. Refer to data in Figure 8 & Table 9. ANC moderate anemic rate is 16% in District A and 81% cases were detected at the district hospital. Only few blocks reported moderate ANC anemic cases. How will you improve quality of ANC? Identify which blocks (including facilities) do not have Hb test facility?

Figure 9

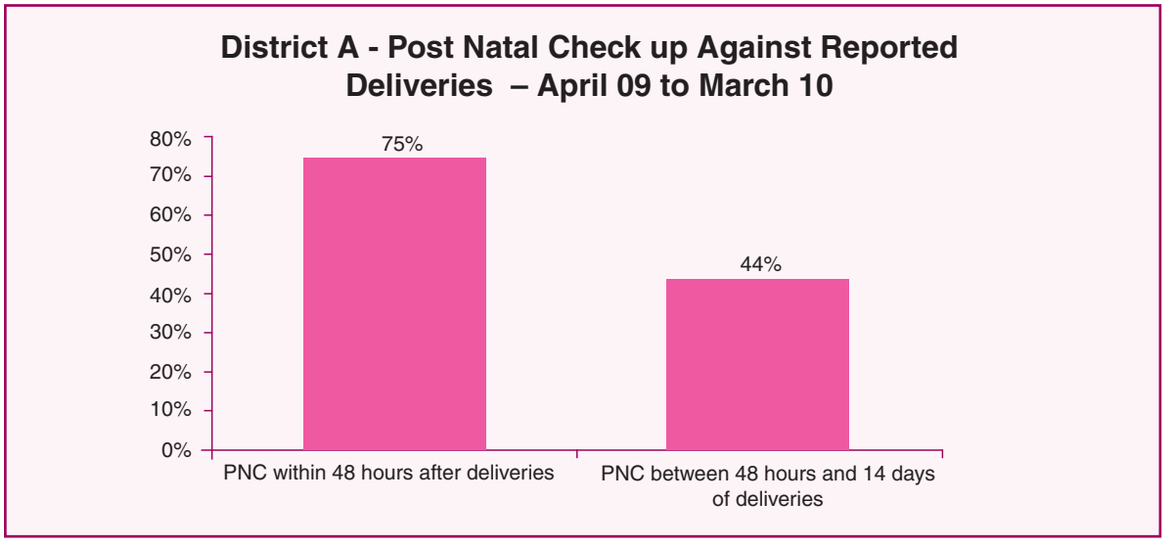


Figure 10

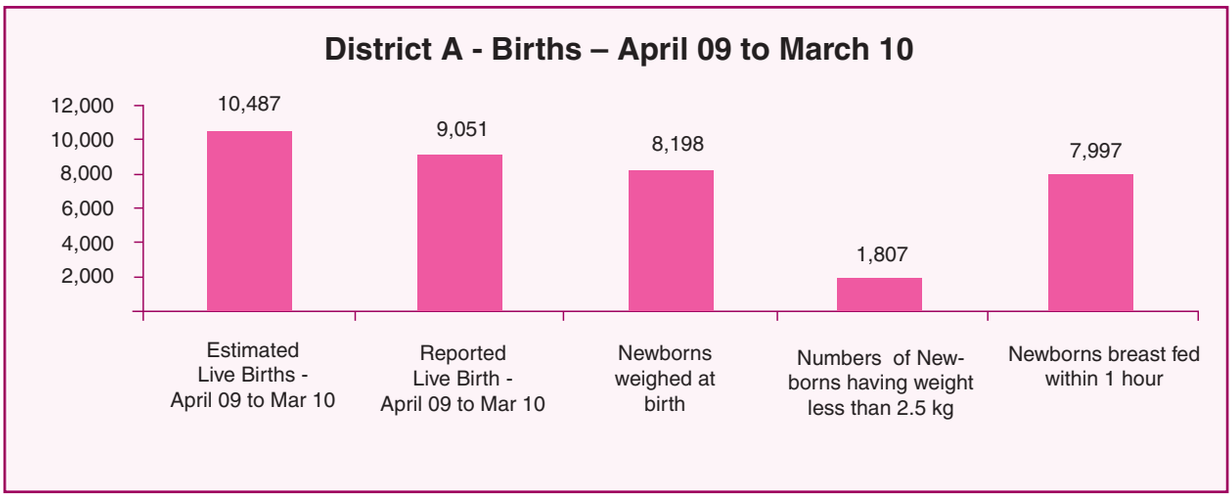


Table 10

District A- Blocks - Newborn Care- Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8) CHC	District A District Hospital	District A
Estimated Live Births	**1,022**	**1,119**	**1,409**	**923**	**1,288**	**1,562**	**1,003**	**1,033**	**1,234**	**10,593**
Reported Live Births	**535**	**825**	**1088**	**646**	**449**	**1534**	**420**	**1060**	**2494**	**9051**
District A- Blocks - %ge Reported Live Births against Estimated Live Births - Apr'09 to Mar'10	52%	74%	77%	70%	35%	98%	42%	103%	202%	85%
Newborns Weighed	326	713	949	643	410	1,425	378	1,060	2,294	8,198
District A- Blocks - %ge Newborns weighed againstReported Live Births - Apr'09 to Mar'10	61%	86%	87%	100%	91%	93%	90%	100%	92%	91%
Newborns Weighed Less than 2.5kgs	70	12	113	94	41	545	2	650	280	1,807
District A- Blocks - %ge Newborns weighed less than 2.5 Kgs against Reported Live Births -Apr'09 to Mar'10	13%	1%	10%	15%	9%	36%	0%	61%	11%	20%
Newborns Breastfed within 1 hr of Birth	306	645	1,088	637	375	1,212	373	970	2,391	7,997
District A- Blocks - %ge Newborns Breastfed within 1 hr of Birth against Reported Live Births - Apr'09 to Mar'10	57%	78%	100%	99%	84%	79%	89%	92%	96%	88%
Still Births	7	3	36	12	1	1	0	1	63	124
Abortions - Spontaenous/Induced	23	0	0	0	32	0	2	0	102	159

Q11. Block(8) CHC has reported 61% Low Birth weight cases. This is higher comapred to district average. What planning action you will take to counter the situation? (Table 10)

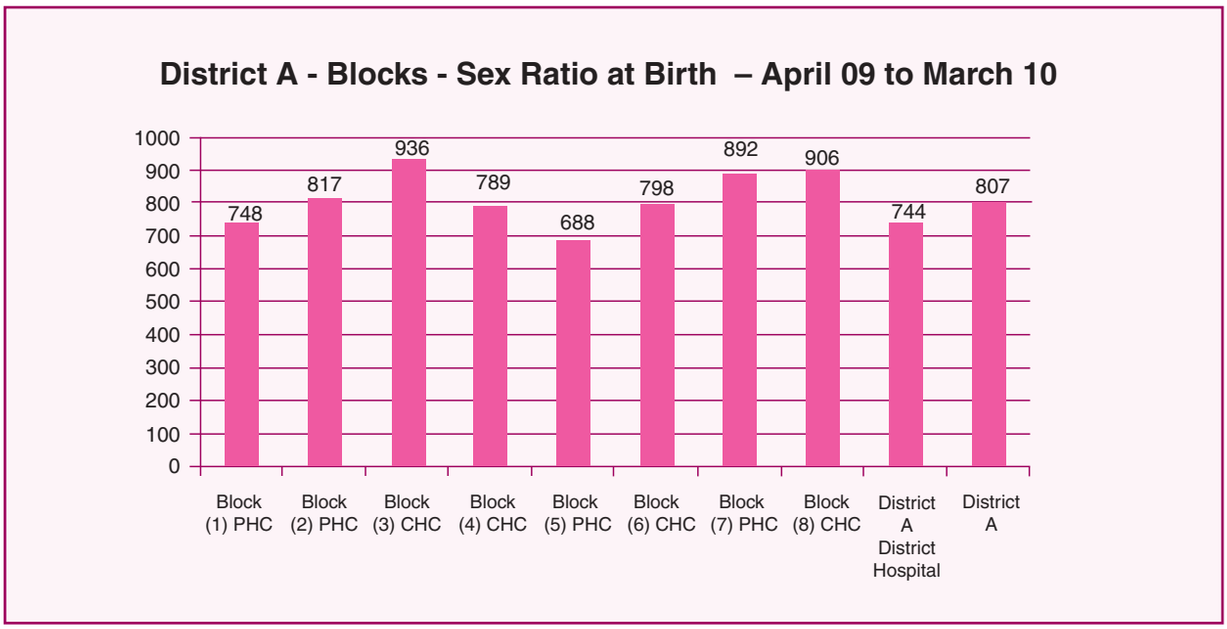
Answers: Conduct spot study of LBW to check

a. Level of malnutrition
b. Prevalence of diseases in pregnancy
c. Preterm delivery rate
d. Non preterm LBW rate
e. Age of marriage
f. Adolescent health
g. Spacing & multiple pregnancy rates

Table 11

District A- Births - Apr'09 to Mar'10					
Live Birth - Males	Live Birth - females	Live Birth - Total	Sex Ratio at birth	Still Birth	Abortion (Induced/ Spontaneous)
5,010	4,041	9,051	807	124	159

Figure 11



Q12. Examine sex ratio across the block. In some blocks sex ratio is lower than 800 (Figure 10 & Table 11). Yet in distant and difficult blocks such as Block (8) CHC and Block (3) CHC sex ration is 903 and 936, respectively. What would be the implications for the plan with respect to PCPNDT implementation?

Figure 12

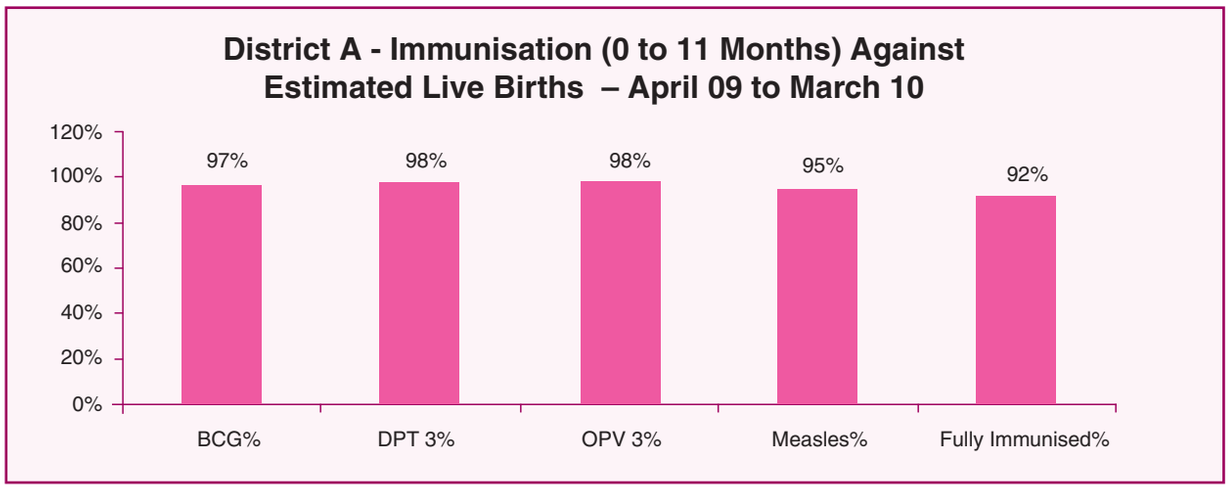


Figure 13

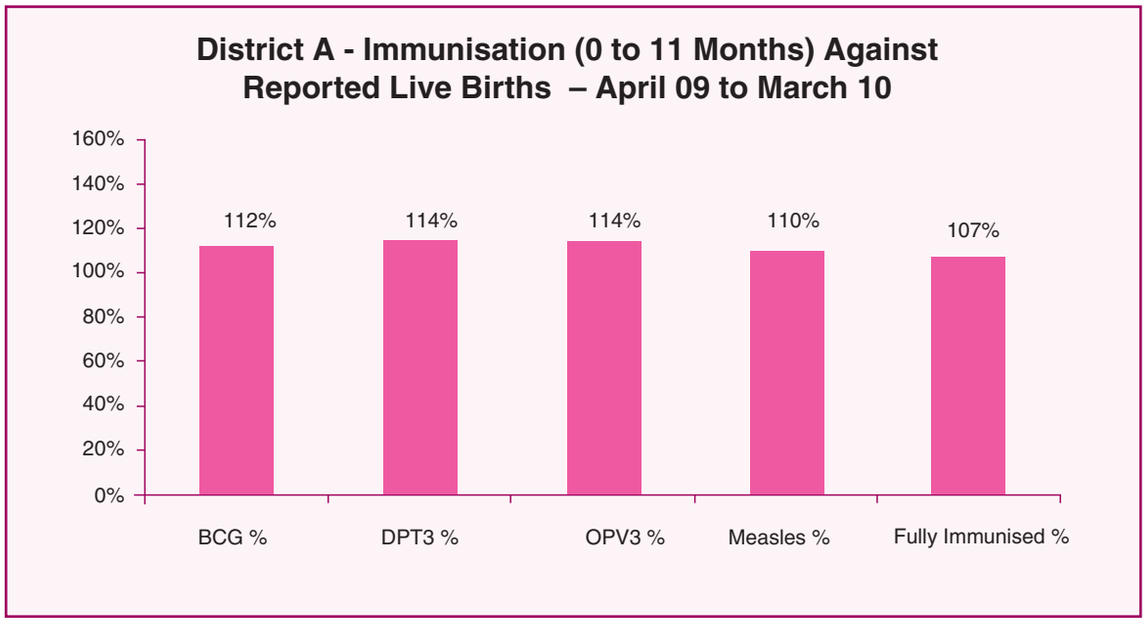


Figure 14

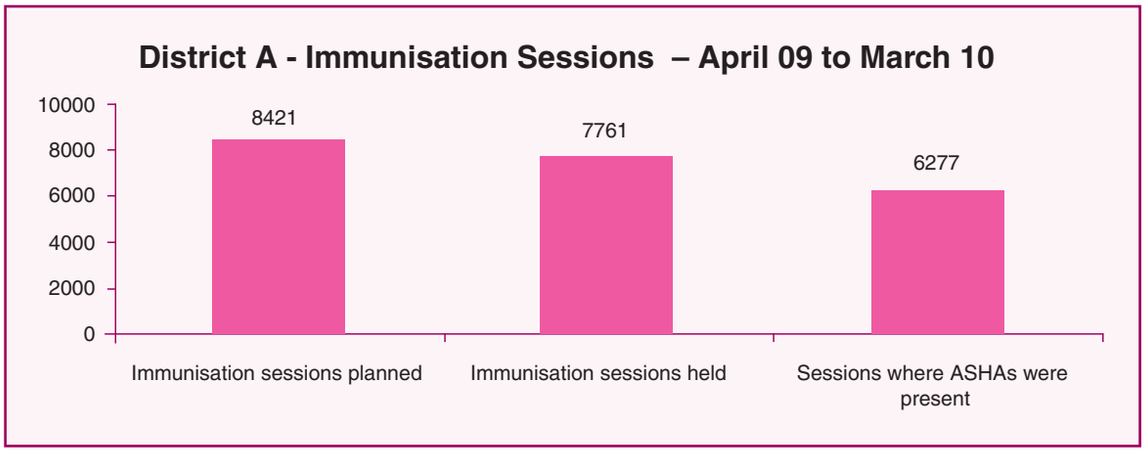


Table 12

District A- Apr'09 to Mar'10	
Total Abortions	**Abortion Rate**
202	1.8%

Figure 15

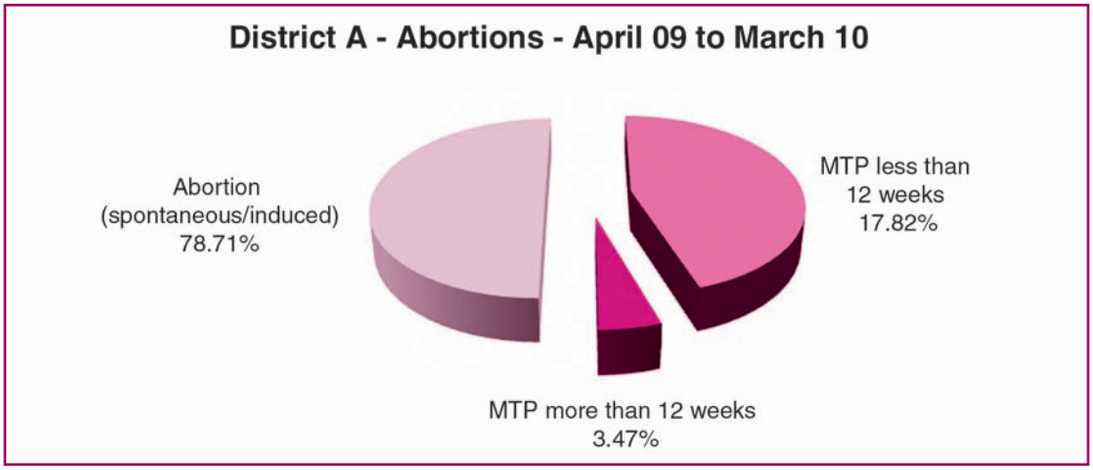


Table 13

District A - Apr'09 to Mar'10	
Total OPD	Total RTI/STI cases
324,529	1,164

Figure 16

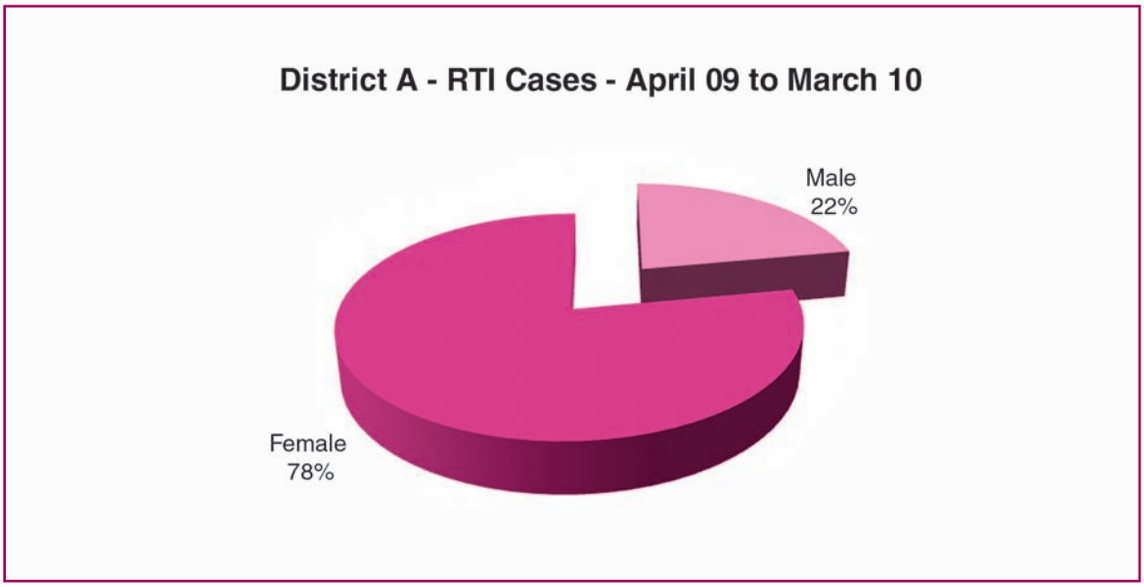


Table 14

District A -Sterilizations - Apr'09 to Mar'10		
	Reported	%age of Reported Sterilization
Total Sterilization	1,736	-
NSV	98	6%
Laparoscopic	1,517	89%
MiniLap	36	7%
Post Partum	85	4%
Male Sterilization	98	6%
Female Sterilization	1,638	94%

Table 15

District A- Blocks - Family Planning - Apr'09 to Mar'10										
FP Methods	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8) CHC	District A District Hospital	District A
Male Sterilisations	8	6	14	11	3	-	1	55	-	98
Female Sterilisations	42	190	250	25	71	44	106	278	632	1,638
IUD	643	850	1,065	632	807	199	751	858	166	5,971
OCP Users (OCP Cycles/13)	2,452	3,937	1,192	2,666	2,424	3,251	2,773	4,097	2,284	25,077
Condom Users (Condom Pieces/72)	49	61	22	49	50	76	36	80	49	472
Total FP method Users	3,195	5,045	2,542	3,383	3,355	3,570	3,667	5,369	3,130	33,256
% Of FP users Using Limiting Methods	1.57%	3.89%	10.38%	1.06%	2.21%	1.23%	2.92%	6.20%	20.19%	5.22%
% Of FP users Using Spacing Methods	98.43%	96.11%	89.62%	98.94%	97.79%	98.77%	97.08%	93.80%	79.81%	94.78%

Q13. Examine male sterilization data in Table 14&15. Maximum male sterilization are reported from Block(8) CHC. Male sterilization is available on specific days every week at CHC. Are few male sterilizations due to lack of availability of doctor, lack of training, poor BCC program, or any other reasons. List the reasons and state how you will address this in your plan.

Table 16

District A -FP Methods - Apr'09 to Mar'10		
	Reported	**%age of All Reported FP Methods**
Total Reported FP Method (All types) Users	14,849	-
Sterilizations'	1,736	12%
IUD	5,971	40%
Condom Users	4,528	30%
OCP Users	2,614	18%
Limiting Methods	1,736	12%
Spacing Methods	13,113	88%

Q14. Calculate the CBR of District A , based on reported live births. Compare district's CBR with State's CBR for 2009-10? Do you see an association between CBR and total number of family planning method users? What measures would you like to suggest improving family planning services and CBR of District A?

Q15. Examine data in Table 15. Calculate unmet family planning need (steps given below) and comment. What strategies can be used to close the gap of unmet family planning needs?

Steps

1. Calculate total eligible couples in the district for 2009-10.
2. Unmet family planning need is 60% of total eligible couples
3. Use DLHS III data to calculate all those that are already sterilized.
4. Estimate those sterilized from 2009-until 2010.
5. Potential eligible couples are now estimated
6. Compare this number with current users
7. Match this number against % unmet family planning given in DLHSIII

Table 17

District A - Service Delivery - Apr'09 to Mar'10						
Operation major (General and spinal anesthesia)	Operation minor (No or local anesthesia)	AYUSH	Dental Procedures	Adolescent counseling services	Total OPD	Total IPD
1,122	2,410	23,627	13,949	64	324,529	17,426
Operation major (General and spinal anesthesia) as %ge of OPD	Operation minor (No or local anesthesia)as %ge of OPD	AYUSH as %ge of OPD	Dental Procedures as %ge of OPD	Adolescent counseling services as %ge of OPD	IPD as percentage of OPD	
0.3%	0.7%	7.3%	4.3%	0.0%	5%	

Table 18

District A- Blocks- Service Delivery - Apr'09 to Mar'10										
	Block (1) PHC	Block (2) PHC	Block (3) CHC	Block (4) CHC	Block (5) PHC	Block (6) CHC	Block (7) PHC	Block (8) CHC	District A District Hospital	District A
Population	50113	54852	69084	45240	63133	76576	49161	50642	60480	519281
Total OPD	5,056	32,865	41,722	25,107	11,591	38,069	9,343	19,488	141,288	324,529
Total IPD	3	698	1,310	638	23	1,172	90	384	13,108	17,426
IPD as % of OPD	0%	2%	3%	3%	0%	3%	1%	2%	9%	5%
In Patients Deaths	-	17	9	-	7	-	-	-	281	314
Operation Major (General and Spinal Anaesthesia)	-	-	-	-	-	-	-	-	1,122	1,122
Operation Major as % of OPD	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Operation Minor (No or local Anaesthesia)	-	63	21	35	-	-	-	-	2,291	2,410
Operation Minor as % of OPD	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%
AYUSH	1,631	3	5,023	856	3,570	4,597	11	3,999	3,937	23,627
Ayush as % of OPD	32%	0%	12%	3%	31%	12%	0%	21%	3%	7%
Dental Procedures	-	2	1,245	1,192	-	1,335	-	-	10,175	13,949
Dental Procedures as % of OPD	0%	0%	3%	5%	0%	4%	0%	0%	7%	4%
Adolescent Counselling	6	-	28	30	-	-	-	-	-	64
Adolescent Counselling as % of OPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Q16. Three blocks namely Block (1) PHC, Block (2) PHC, Block (5) PHC have 24*7 PHCs. However, IPD as percentage of total population is marginal (0%-2%).

a. Check map to see if distance or access are an issue
b. Check EMRI data to see if referral transportation is available or not
c. Check data of the neighboring blocks/facilities to see patients are going there

After specifying the reason state how you will address this issue in your plan. How will you identify villages that have no access to services? (Table 18)

Q17. Block (1) PHC and Block (5) PHC Block PHCs have reported 'AYUSH as % of OPD' as 32% and 31%, respectively but in other blocks AYUSH services are negligible. State the reasons for poor AYUSH services availability. (Table 18)

Table 19

District A - Lab Services - Apr'09 to Mar'10				
Total OPD	Total HB tested	Total HIV Tested	Total Population	
324,529	7,857	1,769	521,738	
Hb. test conducted as %age of OPD	Hb<7gm as %age of HB tested	HIV test conducted as %age of OPD	HIV positive as %age of HIV tested	Blood Smear Examined as % of Population
2.4%	4.2%	0.5%	1.4%	0.2%

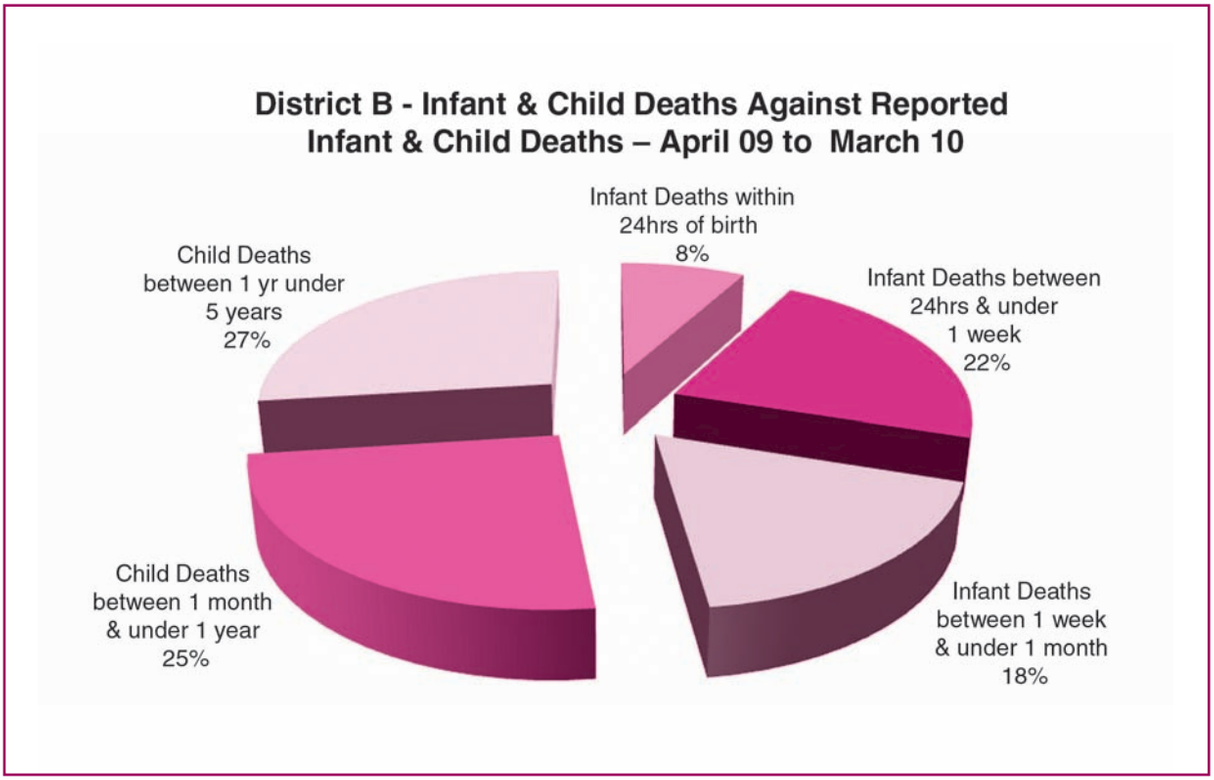
District B- Summary-Apr'09 to Mar'10			
ANC			
3 ANC Checkups against ANC Registrations	69%	TT1 given to Pregnant women against ANC Registration	85%
Deliveries			
Unreported Deliveries against Estimated Deliveries	33.8%	HOME Deliveries(SBA& Non SBA) against Estimated Deliveries	1.1%
Institutional Deliveries against Estimated Deliveries	65.1%	HOME Deliveries(SBA& Non SBA) against Reported Deliveries	1.6%
Institutional Deliveries against Reported Deliveries	98.4%	C Section Deliveries against Institutional Deliveries(Pvt & Pub)	17%
Births & Neonates Care			
Live Births Reported against Estimated Live Births	66%	New borns weighed against Reported Live Births	85%
Still Births (Reported)	2,336	New borns weighed less than 2.5 kgs against newborns weighed	23%
Sex Ratio at Birh	885	New borns breastfed within one hr of Birth against Reported live Births	74%
Child Immunization(0 to 11 months)			
BCG given against Expected Live Births	67%	Measles given against Expected Live Births	57%
OPV3 given against Expected Live Births	62%	Fully Immunised Children against Expected Live Births	54%
DPT3 given against Expected Live Births	66%		
Family Planning			
Family Planning Methods Users (Sterilisations(Male&Female)+ IUD+ Condom pieces/72 + OCP Cycles/13)	120,294	IUD Insertions against reported FP Methods	6%
Sterilisation against reported FP Methods	32%	Condom Users against reported FP Methods	25%
		OCP Users against reported FP Methods	38%
Other Services			
OPD	5,269,531	Major Operations	28,008
IPD	130,146	Minor Operations	46,827

Figures which are clearly errors, the source of which has to be investigated:

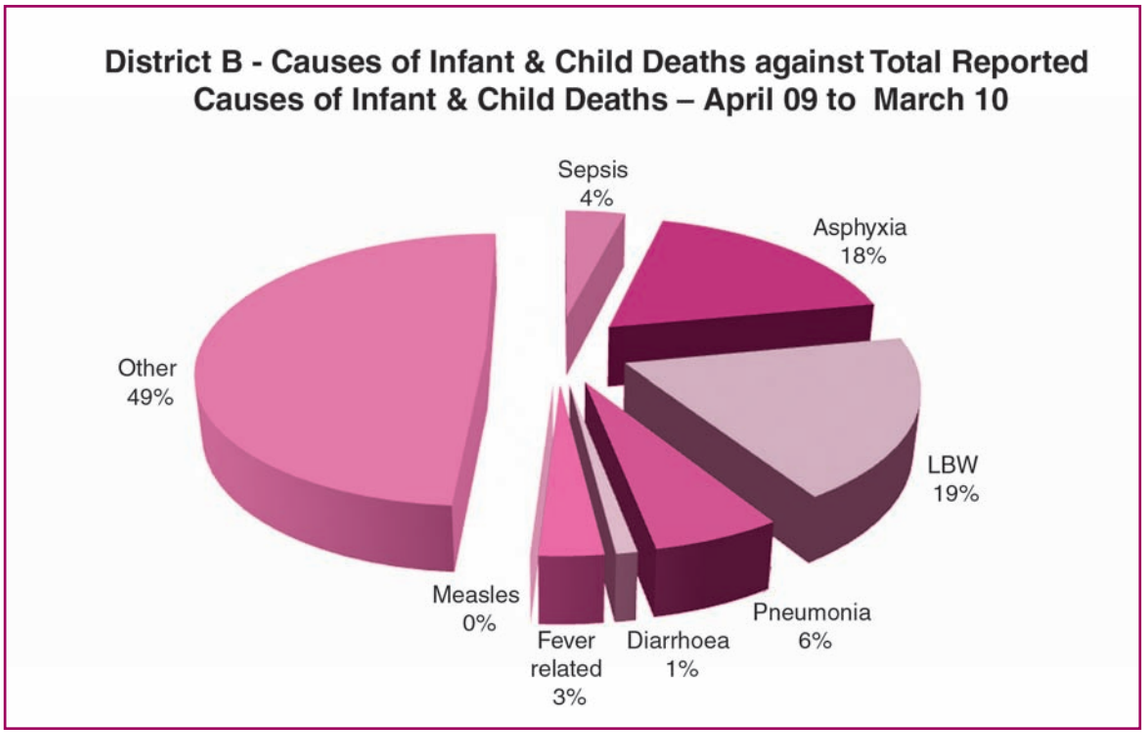
ANC Registration against Expected Pregnancies	141%	**100 IFA Tablets given to Pregnant women against ANC Registration**	124%

District B- Infant & Child Deaths - Apr'09 to Mar'10					
Infant Deaths within 24 hrs of birth	Infant Deaths under 1 week	Infant Deaths between 1week and 1 month	Infant Deaths between 1month and 1 year	Child Deaths between 1-4years	Total Deaths(children between 0-5years)
712	2039	1700	2282	2542	9275
8	22	18	25	27	100

Neonatal deaths are 2,451 or about less than one fourths. There are 2,282 non neonatal deaths and 2,542 deaths in the group 1 to 4 and about one thirds of these would be due to ARI and one third due to diarrhea – at least. We have 4,700 infant deaths which is as expected as per SRS. There is little chance of over-reporting- and hence one would expect the reporting to be quite accurate, but there could still be the usual under-reporting, so one needs to be careful. Certainly we have enough information here to understand where the deaths are happenning and why. This needs to be followed up at the state, with some rewards for truth telling rather than holding it down to poor performance. Poor performance could be judged by admissions for diarrahoes etc and not by deaths- though this is the main outcome the system aims for.



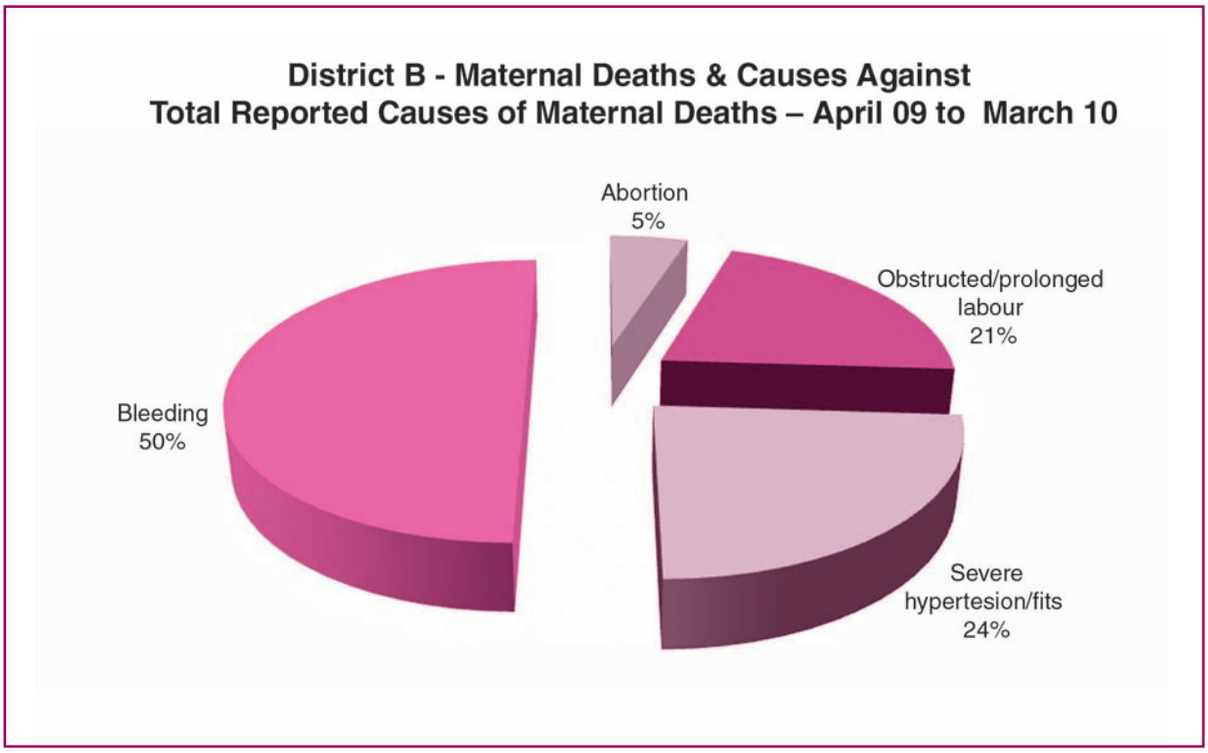
District B- Causes of Infant & Child Deaths - Apr'09 to Mar'10								
Sepsis			**Asphyxia**			**LBW**		
Up to 1 Weeks of Birth	Between 1 week & 4 weeks of birth	Total	Up to 1 Weeks of Birth	Between 1 week & 4 weeks of birth	Total	Up to 1 Weeks of Birth	Between 1 week & 4 weeks of birth	Total
71	31	102	422	36	458	388	88	476
Pneumonia			**Diarrhoea**			**Fever related**		
Be-tween 1 month and 11 months	Between 1 year & 5 years	Total	Between 1 month and 11 months	Between 1 year & 5 years	Total	Be-tween 1 month and 11 months	Between 1 year & 5 years	Total
145	16	161	17	11	28	41	29	70
Others			**Measles**			**Others**		
Up to 1 Weeks of Birth	Between 1 week & 4 weeks of birth	Total	Between 1 month and 11 months	Between 1 year & 5 years	Total	Between 1 month and 11 months	Between 1 year & 5 years	Total
446	218	664	3	2	5	376	202	578



There is large number of deaths where no specific causes are given. We need to explore this. It could be the same distribution as for what is reported. Alternatively, perhaps we are missing causes for deaths at home in the later age groups.

District B- Maternal Deaths & Causes - Apr'09 to Mar'10							
Abortion		Obstructed/pro-longed labour		Severe hypertension/fits		Bleeding	
15-55 yrs.	Total	15-55 yrs.	Total	15-55 yrs.	Total	15-55 yrs.	Total
0	4	18	18	21	21	43	43

Maternal deaths reported are far less than the state MMR and could be due to under reporting. In particular, we are missing out on deaths in the antenatal period.



EVALUATION TESTS

Instructions to the facilitator

Competency 2 will test knowledge and use of indicators, indicators calculation and analysis skills.

Competency 3 will test issues related to data quality, data entry errors & systemic errors. It will also assess skills on how to rationalize data collection tools to improve data quality.

Five sets of question papers are available. Each set has approximately 20 questions. Distribute 1 question paper per participant before the training and after the training. Along with the question papers provide each participant with instruction sheets on which they can also mention their names. At the end answer sheets are enclosed. These answer sheets will be used by you to score the test papers and will be given to participants at the end of the training

Let participants know that it is an open book test but they shouldn't be consulting each other while taking the test. Participants have to circle the response which in their opinion is the most appropriate answer. Each question carries one mark and they have to complete the test in 30 minutes.

COMPETENCY 2- KNOWLEDGE & USE OF INDICATORS

TEST PAPER

Instructions to the participants:

Please circle the correct response. Chose the most appropriate response where more than one response seems applicable. This is an open book test, you can make use of various training material that has been provided to you. Each question carries 1 point.

Total questions: 20 **Maximum Score: 40** **Time allotted: 30 min**

Name: .....

Designation: .....

Office Address: .....

Phone no.: .....

Date: .....

Pre-training ☐

Post-training ☐

SET: A

	Question	Response Options	
1.	How will you calculate dropout rates from 1st to 3rd ANC visit?	a. (ANC 3rd visit-ANC 1st visit)/ANC 3rd visit*100 b. (ANC 1st visit-ANC 3rd visit)/ANC 1st visit*100 c. (ANC 3rd visit-ANC 1st visit)/ANC 1st visit*100 d. Any of the above	
2.	Completion of maternal immunisation is best assessed from	a. ANC TT1 coverage rate b. ANC TT2 coverage rate c. ANC TT booster coverage rate d. ANC TT2+TT Booster coverage rate	
3.	Name an indicator that can be derived from the following data element, also name the denominator you would choose for this.	Data Element: Deliveries conducted by SBA Denominator: Indicator:	
4.	Most useful indicator to assess completion of reporting on births is the 'birth reporting rate'. How is it calculated?	a. Total live births reported against total deliveries b. Total still births reported against total deliveries c. Total live + still births reported against expected births d. None of the above	
5.	In District X institutional deliveries are very high so are postpartum complications. Which indicator will indicate postpartum care at *institution*?	a. PNC home visit rate b. PNC maternal complications attended rate c. Obstetric complications attended. d. % women discharged <48 hours after delivery e. Both b & d	
6.	C-sections rate indicate 'Number of deliveries conducted through C-sections'. Which formula will help assess whether C-sections are done on most needed cases or overdone?	a. Total c-sections/home deliveries*100 b. Total c-sections/total deliveries*100 c. Total c-sections/complicated deliveries* 100 d. None of the above	
7.	Denominator for 'Proportion of low birth weight' is…	a. Total live births weighed b. Total reported live births c. Total live births+Still births d. Expected live births	

8.	How will you calculate safe delivery rate?	a. Institutional deliveries/Total delivery*100 b. Institutional deliveries+SBA home deliveries/ institutional deliveries*100 c. Institutional deliveries+SBA home deliveries/ Total reported deliveries*100 d. Deliveries home SBA/Total reported deliveries*100	
9.	In a district, 15 maternal deaths and 1651 live births were reported annually, calculate Maternal Mortality Ratio.	a. 908 per 1 lakh live births b. 1270 per 1 lakh live births c. 1375 per 1 lakh live births d. 11006 per 1000 live births	
10.	What should be the denominator for 'PNC maternal complication attendance rate'?	a. Total ANC registration b. Total cases of obstetric complications c. Total home non-SBA deliveries d. Total deliveries	
11.	Which of the following are true about Maternal Mortality Ratio and Maternal Mortality Rate.	a. Both are calculated on different time periods. b. Both are synonymous c. Both have different denominators. d. None of the above	
12.	Which of these data elements (deaths under 1 yr) are used to compute numerator for Infant Mortality Rate?	a. Death due to Sepsis b. Death due to Pneumonia c. Death due to Diarrhea & Dehydration d. All of above	
13.	How will you calculate '% of family planning coverage-limiting methods'?	a. Total NSV/Family Planning users*100 b. (Laparoscopic sterilization+Mini Lap)/ Family Planning users*100 c. (Laparoscopic sterilization+Mini Lap+ NSV)/ Family Planning users*100 d. (Laparoscopic sterilization+Mini lap+ NSV+Postpartum sterilization)/Family Planning users*100	
14.	Dist. Malaria Officer has requested your help in developing a plan for next year. Which indicator you can calculate from HMIS data elements?	a. Annual Blood Smear Examination Rate b. Annual Parasite Incidence Rate c. Slide Positivity Rate d. All of the above e. None of the above	
15.	What will be the numerator for 'full immunization rate'?	a. Number of children received Measles during the month b. Number of children who have received a dose of BCG, 3 doses of DPT and OPV and measles dose . c. Number of children immunized during the month with any of the vaccine. d. Number of children given Measles during the month with vitamin A 1st dose.	

16.	How will you calculate 'dropout rate from BCG to measles' for children under 1 year?	a. (BCG doses under 1 year-Measles doses under 1 year)/BCG doses under 1 year*100 b. (Measles doses under 1 year-BCG doses under 1 year)/BCG doses under 1 year *100 c. (BCG doses under 1 year-Measles doses under 1 year)/Measles doses under 1 year * 100 d. Any of the above	
17.	Which of the following can be used to calculate 'Bed occupancy rate'?	a. Sum of in-patient head count at midnight/ Total OPD*100 b. Total IPD/Total beds*100 c. Sum of in-patient head count at midnight/ Total bed days available*100 d. In-patient head count at mid night/Total IPD*100	
18.	Which of the following formula can be used to compute 'Sex ratio at birth'?	a. (Live Births Male + Still Births)/Live Births Female*1000 b. Live Births Female/Live Births Male* 1000 c. Live Births Female/Total Live Births *1000 d. Live Births Female/Expected Live Births *1000	
19	If neonatal tetanus deaths are reported in your district, which indicator you would like to improve?	a. ANC complication referral rate b. Postnatal care rate c. Breastfeeding within one hour rate d. ANC TT2+Booster coverage rate	
20.	ANC registration rate is…	a. ANC given by ANMs to all pregnant women against expected pregnancies. b. Any visit by pregnant women in the health facility against expected number of pregnancies c. Registration of pregnant women by health provider against total expected number of pregnancies d. Early ANC registration of pregnant women against total ANC registration.	

SET B

1.	Early ANC registration rate includes…	a. Pregnancy registration in first 3 months for women in first quarter of their life (age group 15-30 years) b. All pregnancy registration in first 3 months of pregnancy. c. 3rd visit by pregnant women under 19 years of age d. None of the above	
2.	'JSY registration rate' means…	a. Registration of pregnant women for JSY in first 3 months of pregnancy against expected pregnancies. b. Registration of pregnant women for JSY at the time of delivery irrespective of ANC registration against expected pregnancies. c. Registration of pregnant women for JSY if they are eligible irrespective of period of pregnancy against total ANC registration. d. Registration of pregnant women for JSY if they are eligible at the time of JSY payment against total delivery.	
3.	'ANC 3rd visit coverage rate' is a quality indicator, showing continuity of care provided by health staff. Which of the following denominators can be used to compute this indicator?	a. Total ANC registrations b. Total early ANC registrations c. Total expected deliveries d. Total eligible couples	
4.	If the denominator for ANC registration is estimated pregnancies, what should be the denominator for TT1 coverage rate?	a. Estimated pregnancies b. Registered pregnancies c. Pregnancies registered in first trimester d. ANC third visit	
5.	Data triangulation is process of comparing same data from different sources or over different time periods to help improve data quality, and also provide a benchmark to strengthen routine HMIS data. This statement is..	a. True b. False	
6.	Early ANC registration rate can be calculated using both ANC registration and estimated pregnancies as denominators.	a. False b. True	

7.	Maternal anemia is a serious complication that not only leads to maternal death but also is a known cause of **L**ow **B**irth **W**eight & **I**ntra **U**terine **G**rowth **R**etardation. Identification & treatment of maternal anemia are quality components of ANC care. Which indicator(s) can help you assess this?	a. ANC Hb tested rate b. ANC 100 IFA coverage rate c. ANC severe anemia treated rate d. All of the above	
8.	'ANC hypertension rate' indicates…	a. Number of pregnant women checked for hypertension. b. Number of pregnant women found hypertensive and treated for the same. c. Number of pregnant women found hypertensive during their pregnancy period. d. Number of cases of pregnancy found hypertensive during this month irrespective of hypertension reported in previous months.	
9.	Indicate the formula for 'Unreported deliveries rate'.	a. Estimated deliveries-(Home deliveries SBA+Institutional Deliveries)/Total deliveries*100 b. Estimated deliveries-(Home deliveries SBA+ Home deliveries non SBA+ Institutional deliveries)/Estimated deliveries*100 c. Estimated deliveries-Institutional deliveries/Total deliveries*100 d. Estimated deliveries-(Home deliveries+ Institutional deliveries)/unreported deliveries*100	
10.	'Non SBA home deliveries rate' indicates inaccessibility to safe delivery services. What should be the denominator for this indicator?	a. Institutional deliveries b. Total reported deliveries c. Estimated deliveries d. Both B & C	
11.	What is the formula for calculating institutional deliveries rate (public)?	a. Delivery at Public institutions/(Home SBA deliveries+Home non SBA deliveries + Deliveries at public institutions)*100 b. Delivery at Public institutions/Estimated deliveries*100 c. Delivery at Public institutions/Unreported deliveries*100 d. Both A & B	

12.	What is true for 'percentage of deliveries discharged under 48 hours'?	a. This shows quality of PNC care b. This is a part of 'Bed occupancy rate' c. This is not part of 'IPD attendance' d. Both A & B	
13.	Which indicator can be used to assess the status of JSY scheme benefits?	a. Newborns breastfed in one hour rate b. JSY incentive paid to mothers rate c. JSY incentive paid to ANMs rate d. Home delivery newborn visits rate	
14.	'Birth weighing efficiency rate' is best expressed as…	a. Newborns weighed/Total live births*100 b. Newborns weighed/Total births (Live + still)*100 c. Newborns weighed/Estimated births*100 d. Newborns weighed/Total deliveries*100	
15.	It is assumed that there is 10% pregnancy wastage (e.g., abortion) against total pregnancies. Abortion rate indicates availability of safe abortion services. Which denominator will you use to calculate 'Abortion rate'?	a. ANC registrations b. Total births c. Total deliveries d. Estimated pregnancies e. Both A or D	
16.	'Low birth weight rate' is very sensitive indicator of socio-economic development, this indicator is best expressed as…	a. Birth weight <2.5 kg/Estimated live births*100 b. Birth weight <2.5 kg/Total live births*100 c. Birth weight <2.5 kg/Total reported births weighed*100 d. Total newborns weighed/Birth weight<2.5 kg*100	
17.	What is the denominator for 'Percentage of Newborns breastfed within 1 hr'?	a. Total live births reported b. Total deliveries c. Live+still births d. All of the above	
18.	What would be the numerator for 'Complicated deliveries rate'?	a. Number of obstetric complications attended b. Number of obstetric complications attended+Number of severe anemia cases treated+Number of eclampsia cases managed c. Number of obstetric complications treated with antibiotic, antihypertensive, oxytocin d. Number of ANC hypertension+ Number of ANC Hb <11gm+Number of ANC HIV positive	

19.	If few private facilities are accredited in your district for JSY, is there any indicator you can compute from HMIS to measure performance of private facilities with respect to JSY benefits to mothers?	a. Yes b. No If yes, please write indicator name with formula	
20.	What indicator(s) help indicate postpartum care given?	a. PNC within 48 hours rate b. PNC between 48 hours to 14 days rate c. Percentage of women stayed in institutions more than 48 hours after delivery. d. All of above e. None of the above	

SET C

1.	'Proportion of still births' is best estimated from…	a. Live births/Still births*100 b. Still births/(live births+still births)*100 c. Both A&B d. None of the above	
2.	Which indicator suggests sex selective abortions in your district?	a. Abortion rate b. MTP rate (more than 12 weeks of pregnancy) c. Sex ratio at birth d. Both B & C	
3.	HIV positivity rate among pregnant women is best expressed as…	a. ANC HIV positive/ANC HIV tested*100 b. ANC HIV positive/Total women tested*100 c. ANC HIV positive/Total women in reproductive age group*100 d. None of the above	
4.	What is 'Perinatal mortality rate'?	a. Number of still births+number of deaths within 1 month/ total live births*100 b. Number of still births+deaths in first 7 days/live births*1000 c. Number of deaths within 7 days/Total number of births*1000 d. Number of still births+ number of deaths within 1 month/Total live births*1000	
5.	What is 'Early neonatal mortality rate'?	a. Number of deaths in first 28 days/live births*1000 b. Number of deaths in first week of birth/live births*1000 c. Number of deaths between first week to 28 days of birth/live births*1000 d. Number of child deaths in first year/live births*1000	
6.	What is 'Late neonatal mortality rate'?	a. Number of deaths in first 28 days/live births*1000 b. Number of deaths in first week of birth/ live births*1000 c. Number of deaths between first week to 28 days of birth/live births*1000 d. Number of child deaths in first year/ live births*1000	

7.	What is 'Infant mortality rate'?	a. Number of neonatal deaths (deaths in first 28 days)/live births*1000 b. Number of neonatal deaths in first week/ live births*1000 c. Number of neonatal deaths between first week to 28 days/live births*1000 d. Number of infants deaths under 1 year of age/ live births*1000	
8.	What is the numerator & denominator for Maternal Mortality Ratio during the year?	a. Maternal deaths in reproductive age group/ total deaths during the year*1000 b. Maternal deaths due to pregnancy related causes & child birth/total deaths*100,000 c. Maternal deaths due to pregnancy, delivery or during puerperium/live births*100,000 d. None of the above	
9.	What is 'Child mortality rate'?	a. Number of neonatal deaths (deaths in first 28 days)/live births*1000 b. Number of child deaths under 5 years/ estimated children under 5 years*1000 c. Number of child death under 5 years-neonatal deaths/total number of children under 5 years*1000 d. Number of child deaths in first year/live births*1000	
10.	'Births attended by skilled health personnel rate' and 'SBA delivery rate', are…	a. Both are different b. Both are synonymous c. Birth attended by skilled personnel shows essential newborn care whereas SBA delivery rate shows skilled care during delivery. d. None of the above	
11.	Which data elements are used to compute numerator for 'Adverse event following immunization rate'?	a. AEFI abscess b. AEFI deaths c. AEFI 'Others' d. All of the above	
12.	'% of immunization sessions attended by ASHA' is best calculated using the formula…	a. Number of sessions attended by ASHA/ Total sessions planned*100 b. Number of sessions attended by ASHA/ Total sessions held*100 c. Number of sessions attended by ASHA/ Total sessions required*100 d. Both A & C	

13.	'Vitamin A completion rate' is assessed using the formula…	a. Vitamin A dose 5 given/Total children under 5 years*100 b. Vitamin A 9th dose given/Total children under 5 years*100 c. Vitamin A 1st dose given/Total children under 1 year*100 d. Vitamin A 9th dose given/Total children under 3 years*100	
14.	'Intra-ocular implantation rate' shows number of cataract cases received intraocular lens against total cataract operations.	a. True b. False	
15.	How do you calculate dropout rate from BCG to DPT3?	a. (BCG-DPT3)/BCG*100 b. (DPT3-BCG)/BCG*100 c. (DPT3- BCG)/DPT3*100 d. (BCG-DPT3)/DPT3*100	
16.	What should be the formula to calculate dropout rate between DPT1 to Measles?	a. (DPT 1-Measles)/ Measles*100 b. (DPT1- Measles)/ DPT 1*100 c. (Measles- DPT 1)/ Measles*100 d. (Measles-DPT 1) / DPT 1*100	
17.	What is the formula for calculating dropout rate from DPT 1 to DPT 3?	a. (DPT 1- DPT 3)/ DPT 3*100 b. (DPT1- DPT 3)/ DPT 1*100 c. (DPT 3-DPT1)/DPT3*100 d. (DPT 3- DPT 1)/ DPT 1*100	
18.	Calculate users of family planning methods?	a. Sterilization+IUD+(OCP/13)+ (Condoms/ 72) b. (Sterilization/72)+IUD/10+(OCP/13)+ (Condoms/ 72) c. Sterilization+IUD/10+(OCP/13)+ (Condoms/ 72) e. Sterilization+(IUD/72+(OCP/13) + (Condoms/100)	
19.	Family Planning Coverage rate by condom is expressed as…	a. Condom users/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 b. [Condom users/72]/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 c. [Condom users*13]/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 d. [Number of condom users during month/10+number of pills distributed+ Number of IUDs inserted*5.5+ No. of condom pieces distributed]/Eligible couples*100	

20.	Family Planning Coverage rate by OCP is expressed as…	a. OCP users/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 b. [OCP users/72]/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 c. [OCP users/13]/[Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 d. [Number of OCP users during month/10+number of pills distributed+ number of IUDs inserted*5.5+ No. of condom pieces distributed]/Eligible couples*100	

SET D

1.	Family Planning Coverage rate by sterilization is expressed as…	a. [Sterilizations (Male+Female)]/ [Sterilization+IUD+(OCP/13)+ (Condoms/72)] *100 b. [Sterilization/72] / [Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 c. [Sterilization*13]/ [Sterilization+IUD+ (OCP/13)+(Condoms/72)] *100 d. [Number of sterilizations during month/10+number of pills distributed+ Number of IUDs inserted*5.5+No. of condom pieces distributed]/Eligible couples*100	
2.	What should be the denominator for OPD attendance rate?	a. Total OPD b. Total IPD c. Total Population d. None of the above	
3.	Formula for VDRL test rate is 'VDRL test done/Total ANC registration*100'.	a. Yes b. No	
4.	Malaria is a life threatening complication of pregnancy. ANC malaria positivity rate is an indicator which helps to identify malaria prevalence among pregnant women. It can be calculated from the HMIS reports?	a. Yes b. No If yes give numerator & denominator?	
5.	IPD admission rate includes…	a. IPD admission for c-sections, deliveries, excluding operations. b. IPD admission for c-sections, diseases, operations (excluding deliveries) c. IPD admissions for deliveries, diseases, operations (excluding sterilizations) d. IPD admissions for deliveries, diseases, operations (including sterilizations)	
6.	IUD insertion rate formula is…	a. IUD inserted-IUD removed/Total Family Planning users*100 b. IUD inserted- IUD removed/Eligible couples*100 c. IUD inserted/Eligible couples*100 d. IUD inserted/Total users of all family planning method	
7.	Female sterilization rate includes laparoscopic sterilizations, Postpartum sterilizations & Mini Lap sterilizations as numerator.	a. Yes b. No	

8.	Which one of the following is an indicator?	a. Percentage of ANC registrations b. Home delivery newborn visits c. Newborns breastfed within one hour d. None of the above	
9.	Which statement is true in context of data & indicators?	a. Indicators are collected and reported from HMIS reporting forms annually. b. Data elements are computed from HMIS monthly data. c. HMIS provides data which can be converted into indicators by putting data in context. d. HMIS provides data on monthly basis but indicators are reported on quarterly basis.	
10.	What is the definition of indicators?	a. Tools used to convert raw data into information b. Variables that help to measure change directly or indirectly c. Data when put into context is an indicator d. All of the above	
11.	The ideal indicator should be…	a. Reliable: Give same result if used by different people in different places b. Appropriate: Fits local needs, capacity, culture, and the decisions to be made c. Valid: Truly measures what it intends to measure. d. Sensitive: Changes in the indicator immediately reflect changes in the actual situation. e. All of the above	
12.	Maternal Mortality ratio includes maternal death happening in reproductive age excluding,	a. Deaths at the time of delivery b. Deaths during pregnancy due to any cause including communicable disease. c. Deaths after delivery but within 42 days of delivery d. Deaths due to abortion. e. None	
13.	Sterilization rate is calculated using formula…	a. (NSV+Laparoscopic+Minilap)/Eligible couple*100 b. NSV+(Laparoscopic+Minlap)-Postpartum/ Eligible couples*100 c. NSV/13+[(Laparoscopic+ Minilap+ Postpartum)/10]*100/Eligible couples d. NSV+ Laparoscopic+ MiniLap+Post partum/ Eligible couple*100	
14.	Which indicator is directly linked with one of the basic objectives of Janani Suraksha Yojana?	a. Decreasing low birth weight rate b. % of ANMs given JSY incentives c. Increase in institutional deliveries rate d. Increasing full immunization rate	

Q15. In programme management several indicators are used to measure programme performance. Link Table A with Table B.

Table A		Table B	
1	Goals	1	Input Indicator
2	Objectives	2	Process indicator
3	Strategies	3	Output indicators
4	Activities	4	Outcome indicator
5	Inputs	5	Impact indicators

a. 1-5, 2-4, 3-3, 4-2, 5-1
b. 1-2, 2-1, 3-4, 4-3, 5-5
c. 1-5, 2-4, 3-5, 4-1, 5-2
d. None of the above

Q16. Calculate Neonatal Mortality Rate from the data given below

Causes of death	Deaths between 1 days to 1 week	Deaths between 1 week to 1 month	Deaths within 24 hours of birth
Sepsis	120	330	
Asphyxia	201	44	
Low birth weight	410	232	78
Others	105	167	
Total Live Births	28956		

a. 55 per thousand live births
b 44 per lakh live births
c. 58 per thousand live births
d. 70 per lakh live births

Q17. Calculate Infant Mortality Rate from the data given below.

Causes of death	Deaths under 1 year
Pneumonia	3256
Diarrhoea	2714
Fever related	1948
Measles	280
Others	7928
Total Live Births	280870

a. 105 per lakh live births
b. 210 per lakh live births
c. 57 per thousand live births
d. 80 per thousand live births

Q18. Cause-wise maternal deaths for District X in reproductive age group is given in the Table below, calculate the Maternal Mortality Ratio.

Maternal deaths causes	19-25 age group	26-40 age group	40-49 age group	Total
Bleeding	32	43	38	113
Accident	23	67	89	179
Abortion	11	23	16	50
Obstructed labour	7	23	8	38
High Fever	15	25	44	84
Total Live Births	234560			464

a. 198 per one lakh live births
b. 502 per thousand live births
c. 122 per one lakh live births
d. 255per ten lakh live births

Q19. Create one indicator for each data element given below for the indicator also suggest denominator that can be used.

Data elements	Indicators	Denominator	Score
Total number of pregnant women registered for ANC			
Number of pregnant women received 3 ANC			
Number of pregnant women given TT1			
Number of pregnant women given TT2 or booster			
Number of pregnant women given 100 IFA tablets			

Q20. BEmOC & CEmOC services should be available in 24x7 PHCs & FRUs. All PHCs are not equipped to provide BEmOC in your district. You want to review 'case load of obstetric complications managed' at PHC or CHC so that you can plan infrastructure & services up-gradation. From the table below select indicators for both PHC & CHC which can help you plan.

	CHCs		PHCs
1	Percentage of obstetric complications managed in CHC against total complications	1	Percentage of ANC Eclampsia cases managed in PHC against total ANC hypertension cases.
2	Percentage of severe anemia cases managed during delivery	2	ANC third visit coverage rate
3	Percentage of ANC Hb< 11 gm	3	Abortion rate
4	Both 1& 2	4	None

a. CHC-1, PHC-3
b. CHC-3, PHC-1
c. CHC-4, PHC-1
d. CHC-4, PHC-3

EVALUATION TESTS

COMPETENCY 3 – DATA QUALITY

Instructions to the participants:

Please circle the correct response. Chose the most appropriate response where more than one response seems applicable. This is an open book test, you can make use of various training material that has been provided to you. Each question carries 1 point.

Total questions: 20 **Maximum Score: 40** **Time allotted: 30 min**

Name: .....

Designation: .....

Office Address: .....

Phone no.: .....

Date: .....

Pre-training ☐

Post-training ☐

SET A

1. Which attributes of data quality are to be checked and improved upon by every HMIS Manager?

a. Completeness of reporting
b. Timeliness of reporting
c. Accuracy of reporting
d. Relevance of data element collected
e. All of the above except D

2. All the following statements are correct except…

a. Validity: data measures what it intends to measure.
b. Reliability: mistakes in data aggregation and computation.
c. Consistency: data will be the same when measured on repeated times or by different persons.
d. Accuracy : correctness of the data collected

3. "Relevance of data collected" is an important dimension of data quality. Relevance means that the data collected should…

a. Reflect government priorities
b. Reflect what services are provided
c. Help in decision making and planning
d. All of the above

4. Why completeness is part of data quality?

a. If required data are missing then we under-estimate the performance or status and appropriate actions cannot be taken.
b. Essential to monitor provision of all services and to provide resources needed to improve service delivery/provision throughout the geographical areas and population covered.
c. To monitor both public and private sector for getting a total picture of the health system
d. All of the above

5. To improve data completeness which of the following needs to be done?

a. Reporting unit- completeness: Every report should indicate % of reporting units whose data has been included.
b. Data completeness: A feedback should be given to each reporting unit indicating % of essential data elements of a format that were reported on.
c. Ask private sector units to report regularly using the same form and aggregate this at the block or district level as appropriate.
d. All the above.

6. 'Reporting unit completeness' report of District X shows that 20% of sub-centers and 3 PHCs have not reported. While the District is in the process of securing the data it can use available data by…

a. Subtracting from the denominator populations of the areas served by the non-reporting facilities.

b. Extrapolating the final district data elements by a multiplier that compensates for the missing facilities.

c. Can estimate by either A and B provided above it is acknowledged during decision making that equity in access may not be the same.

d. Cannot estimate any indicator until data gaps are filled.

7. You visited Facility A in your block and found that the facility was reporting 'Number of women having hemoglobin <11gm % (tested cases)'. However, you also found that haemoglobinometer has been out of order for last 3 months. What was the basis of reporting and what would you advise them? Circle correct response (a-d) given at the bottom.

a. Reporting anemia was based on mere clinical examination of nails and eyes for pallor. This is acceptable and may be continued.

c. Reporting anemia was based on mere clinical examination of nail and eyes. This is unacceptable.

d. Probably pregnant women who got Hb tested from private facilities were reported. This should not be included in the reporting form.

e. Probably pregnant women who got Hb tested from accredited private labs were reported. This is acceptable.

Chose correct answer:

a. i and iii

b. ii and iii

c. ii and iv

d. i and iv

8. You visited Facility X and found that they were reporting 'Number of women having hemoglobin <11gm %'. However, Sahli's appratus was broken/ unavailable and ANMs were reporting based on clinical assessment. What component of data quality will be affected by this reporting? More than one correct answer can be chosen.

a. Accuracy of data will be affected as data would have poor validity.

b. Timeliness of data will be affected, as this would take longer.

c. Consistency of data will be affected as different persons would make different readings.

d. Relevance as measurement of anemia is not useful for planning.

e. Completeness

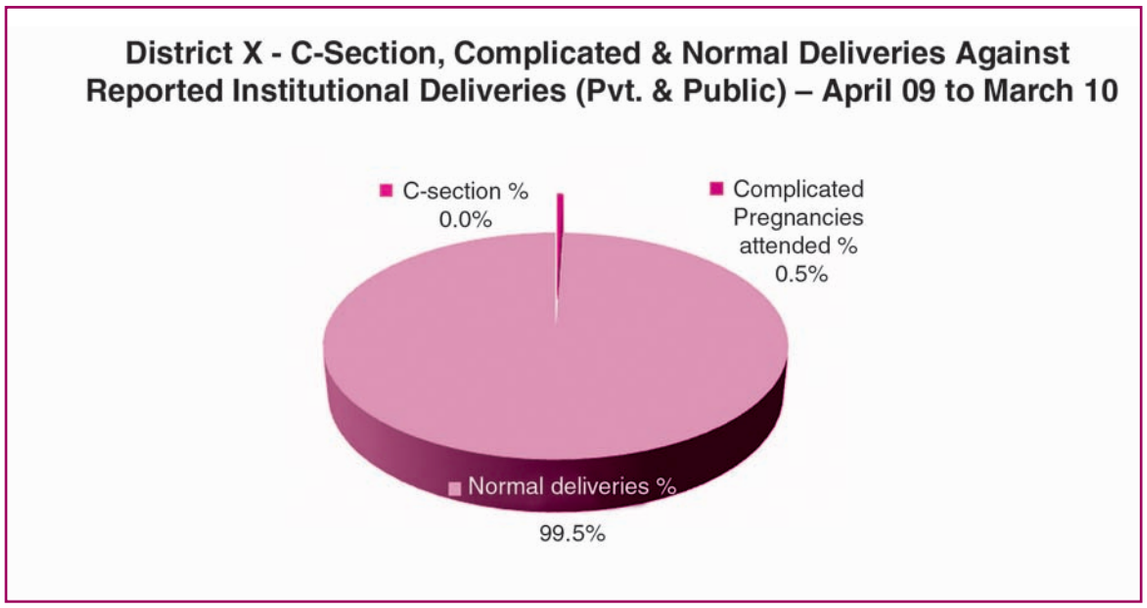
9. Wet mount test is available in the CHC. However, tests are not being conducted because of lack of skills. What would you write in the format while reporting for the data element "wet mount conducted at the facility"?

a. Leave data cell blank
b. Write zero against the data element
c. Write any number
d. Write number of patients diagnosed (clinically) for RTI

10. IUD removals for District A are reported zero for last six months. What is the most likely reason? All are correct, except…

a. There is no column/space in the registers to capture this data element, however reporting formats have this column.
b. No IUDs have been removed in the last six months.
c. ANM knew that some of the IUD has been removed by the women themselves, but there is no space and time (in her work schedule) where she would review users and write it down.
d. No IUDs were inserted therefore no IUDs were removed.

Figure 3



11. Examine Figure 3. District X had only 0.5% of complicated pregnancies and had no c-sections. If this is a data quality error, what could is the possible reason?

a. Facilities doing C- section are not reporting this data element
b. No facility in the district is attending complicated pregnancies
c. Private facilities attend complications but there is no system of collecting data from them.
d. All of the above

12. When we send district data the higher authority analyzes data and points out statistical outliers* the action required is…

**(Statistical Outliers: Data that do not conform to the trend in statistical terms i.e., they lie more than 1.5 SDs from the plot of most of the data received for a specific data element over months).*

a. These data are wrong and need to be corrected.
b. These data are correct and indicate need for public health action.
c. These data need to be examined closely to determine if data are wrong and need improvement in data collection and flow or if data are correct and appropriate public health management action needs to be taken.
c. Officers know the range of numbers within which they are expected to report.

13. A district HMIS officer is informed by a higher authority that following data had statistical outliers (all had values lower than expected values):

a. DPT 1, 2 and 3 reduced but other immunization parameters are usual.
b. Total ANC: both registration and ANC 3 going down in a district in months of pulse polio or catch up measles campaigns.
c. Home deliveries by SBA decreasing.
d. Number of C-sections decreasing.

He was asked to look for facilities reporting incompletely or failing to report. Officer checked and responded that the problem was with the programme rather than with the data. What other problems possibly result in a poor report? Please elaborate.

.....

.....

.....

14. Validation rules are rules run by the computer to check common data entry errors. Following are correct validation rules, except…

a. Number of C-sections should be less than or equal to number of deliveries.
b. Total number of ANCs given TT1 cannot be more than the total number of 3 ANCs.
c. Total number of BCG given should be equal or less than to live births.
d. Delivery discharged under 48 hours should be less than or equal to deliveries conducted at facility

15. Validation rules are rules that compare two data elements based on a logical relationship. Whereas, statistical outliers compare data within the same data element based on a statistical relationship. The benefits of using validation rules are all of the following, *except*…

a. Obvious data entry errors are flagged so that data entry operator can check and correct errors.
b. Violation of validation rule helps Data Manager to identify and attend to systemic errors in data collection.
c. Violation of validation rule suggests possible problems with programme implementation. It also indicates why particular event is occurring less or more times than what would be logically expected.
d. Violation of validation rule should be corrected so that data presented are consistent with expectations.

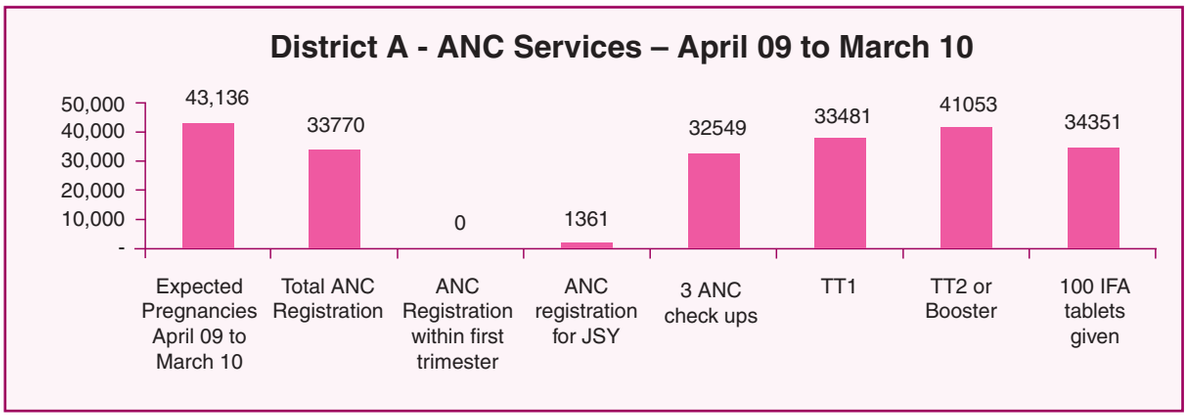
16. If there are no AEFI cases in your district what advice would you give to your field level staff while reporting AEFI

a. Leave the box blank to indicate there are no cases of AEFI reported
b. Put zero to indicate that there are no cases of AEFI reported
c. Fill it with any number which looks reasonable to avoid questions
d. None of the above

17. Which of the following is not a valid rule/query to assess accuracy of data quality?

a. Number of women discharged after delivery <48hrs should be greater than total number of deliveries conducted at facility
b. Measles dose given should be greater than or equal to Full Immunization
c. Newborns breastfed within 1 hour are less than total live births
d. Women receiving first (within 48 hour) Postpartum check-up equal to total Live births.

Figure 1



18. Examine data in Figure1 and indicate the data element which is highly under reported.

a. Total ANC Registration
b. ANC Registration within first trimester
c. ANC Registration for JSY
d. Total IFA tablets given

16. Examine data in Figure1 and indicate the data element which is not being reported.

a. Total ANC Registration
b. ANC Registration within first trimester
c. ANC Registration for JSY
d. Total IFA tablets given

20. Based on your response to Q19 specify the possible reasons for non-reporting of this data element? All statements are correct except…

a. Women don't get registered in first trimester
b. Recording registers do not have space to record this data element
c. There is lack of understanding of data element among ANMs
d. There is a mismatch between the terms used in recording (early registration) and reporting register (1st trimester)

SET B

1. All the following statements are correct except…

a. Validity: data measures what it intends to measure.

c. Reliability: mistakes in data aggregation and computation

d. Consistency: data will be the same when measured on repeated times or by different persons.

e. Accuracy : correctness of the data collected

2. Why completeness is part of data quality?

a. If required data are missing then we under-estimate the performance or status and appropriate actions cannot be taken.

b. Essential to monitor provision of all services and to provide resources needed to improve service delivery/provision throughout the geographical areas and population covered.

c. To monitor both public and private sector for getting a total picture of the health system

d. All of the above

3. Any of the following could be plausible explanations for total ANC registration being less than expected pregnancies (refer Figure 1). Yet, looking at the pattern which do you think is the most likely?

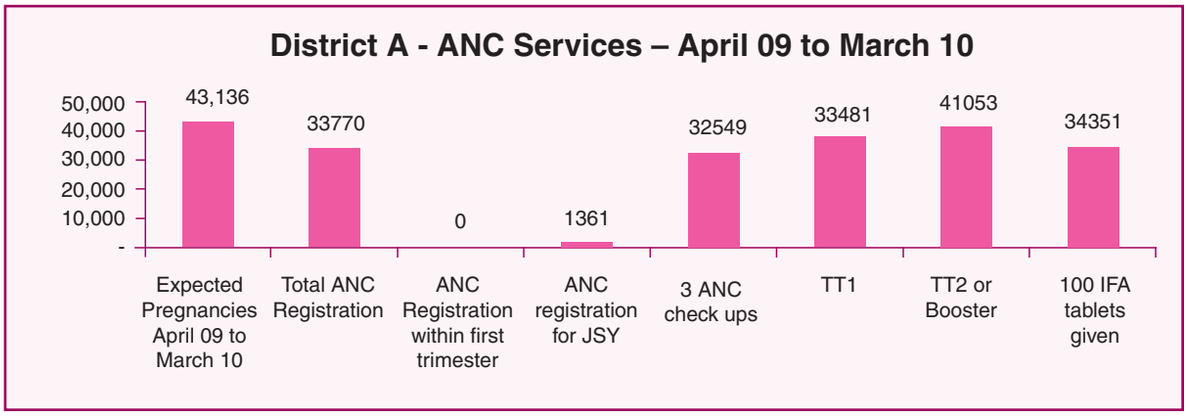
a. Services are not reaching a section of pregnant women.

b. A number of facilities are not reporting or are reporting too late because of which data are not getting included.

c. Wrong choice of denominator.

d. All of the above

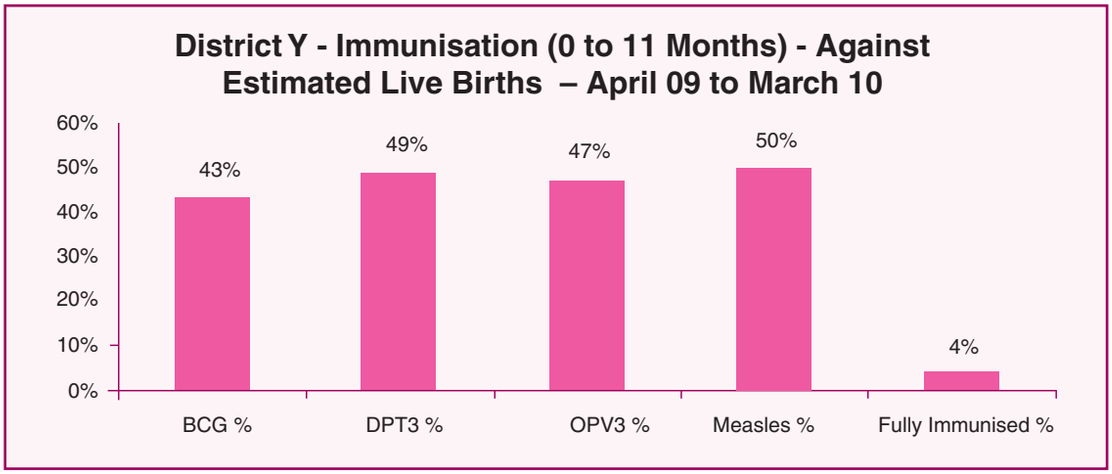
Figure 1



4. Examine data in Figure 2. Numbers of fully immunized is very low. Observing the pattern of reports, what would be a probable cause for this?

a. Double counting in BCG, DPT3, OPV3, and Measles.
b. Column not available in register to calculate number of fully immunized children
c. Over estimation of live births
d. Very few children are fully immunized

Figure 2



5. Refer to the data in Table 1 given below. Rates for fully immunized children are too high, all reasons are plausible, except…

a. False reporting by services providers who are being closely monitored for this figure
b. Migrated children also get immunized
c. Many facilities add individual vaccine figures to calculate fully immunized children
d. A wrong denominator has been used
e. All of the above

Table 1

Vaccine	Coverage rate
BCG	80%
OPV3	98%
DPT 3	100%
Measles	83%
Fully immunized children from 0-11 months	133%

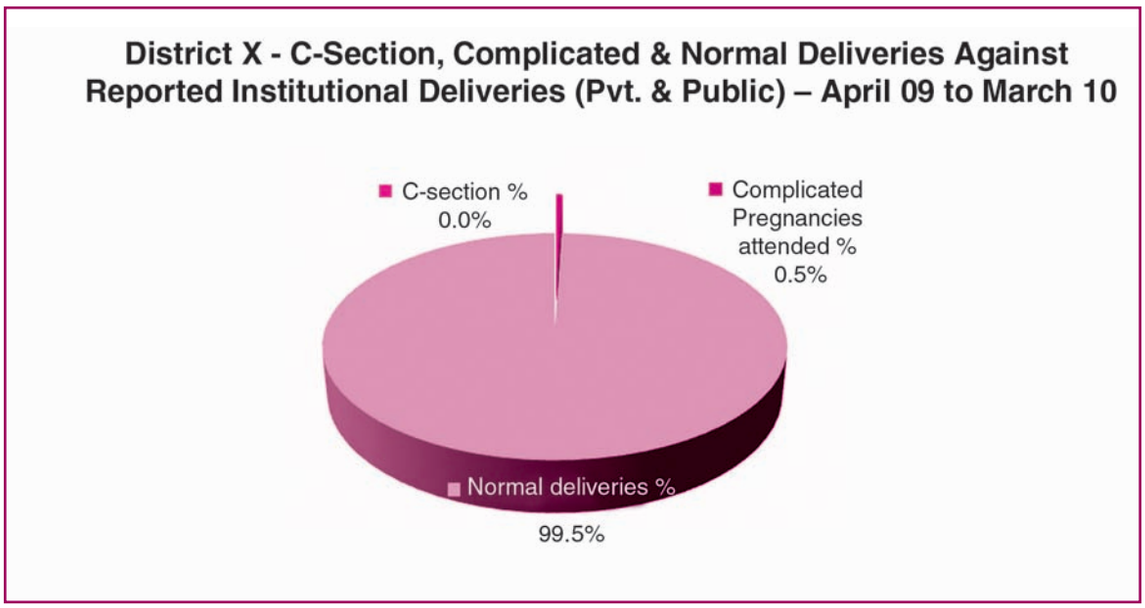
6. Wet mount test facility is <u>not</u> available in your block. However, block level facilities are reporting for this data element. What advice would you give to the facilities during review meetings?

a. Mark this item zero
b. Fill a reasonable number
d. Leave this item blank
e. None of the above

7. Examine Figure 3. District X (DH exist) had only 0.5% of complicated pregnancies and had no c-sections. If this is a data quality error, what could be the possible reason except?

a. Facilities doing C- section are not reporting this data element
b. No facility in the district is attending complicated pregnancies
c. Private facilities attend complications but there is no system of collecting data from them.
d. All of the above

Figure 3



8. While analyzing data for District A, 'Number of AWCs conducting VHND days' was abnormally high. What could be the reason for this error except?

a. Large number of sessions are planned
b. May be the report showing this figure is erroneous.
c. Probably facilities are reporting 'Number of session held at AW centers' instead of 'Number of AWCs where at least one VHND was held'.
d. Probably reported the number of immunization session in 1 catchment area.

9. Comment on the accuracy of the data in Table 2 below

a. Above data seems right
b. Since MTP is induced abortion this data element should be added to 'Abortions' data element while reporting for abortions (spontaneous/induced)
c. Since MTP and abortions are two different data elements MTP should not be added to abortions (spontaneous/induced)
d. MTP is recorded in OT Register whereas abortions (spontaneous) are recorded in Labour Room Register, so while reporting 'Abortions(spontaneous/induced)' only spontaneous abortions are being reported

Table 2

	Apr	May	June	July	Aug	Sept	Oct
Abortion (spontaneous/induced)	2003	2415	574	0	2	37	12
Total MTP conducted	2241	6332	2124	2200	633	1252	5598

10. Identify the probable error in calculating fully immunized children, if any, from Table 3.

In Table 3, fully immunised children are high because…

a. Fully immunization is calculated by adding individual vaccine doses given, and not total number of children who were fully immunised.
b. Total fully immunized should be higher than measles.
c. Total immunization figure is gross false reporting.
d. None of the above

Table 3

Child Immunization	Number of children
BCG	12017
DPT1	12172
DPT2	11804
DPT3	11721
OPV 0 (Birth Dose)	49040
OPV1	10167
OPV2	11803
OPV3	11422
Hepatitis-B1	8000
Hepatitis-B2	6200
Hepatitis-B3	5000
Measles	11621
Total number of fully immunized children between 0-11 months	**163567**

11. Refer to Table 3 above and specify maximum figure which is close to 'Total number of fully immunized children'.

a. 11621 (Cannot be more than measles doses).
b. 11422 (Cannot be more than the lowest of the mandatory vaccine doses and OPV 3 is the lowest)
c. 5000 (Cannot be higher than the lowest of the vaccine doses, i.e., Hepatitis 3)
d. 12017 (Cannot be more than BCG which is the starting dose of vaccination schedule)
e. We cannot state such a maximum

12. You visited Facility A in your block and found that the facility was reporting 'Number of women having hemoglobin <11gm % (tested cases)'. However, you also found that haemoglobinometer has been out of order for last 3 months. What was the basis of reporting and what would you advise them? Circle correct response (a-d) given at the bottom.

a. Reporting anemia was based on mere clinical examination of nails and eyes for pallor. This is acceptable and may be continued.
b. Reporting anemia was based on mere clinical examination of nail and eyes. This is unacceptable.
c. Probably pregnant women who got Hb tested from private facilities were reported. This should not be included in the reporting form.
d. Probably pregnant women who got Hb tested from accredited private labs were reported. This is acceptable.

Chose correct answer:

a. i and iii
b. ii and iii
c. ii and iv
d. i and iv

13. Refer to data in Table 4. What could be reason for such a high % of ANC registration?

a. The likely cause is double counting of pregnancies (Same woman is registered when she took pregnancy test, was found +ve, and also when she came for the first time to the facility).
b. Double counting (Same woman was reported from sub-center when she came for first ANC and from PHC/CHC where she went for a laboratory check up).
c. Women from other areas are coming to these blocks for ANC because it has a functional CHC.
d. ANMs are reporting on all pregnancies in their area, whether or not they come to her for ANC.
e. All of the above, except D.

Table 4

	Block A	Block B
Estimated pregnancies	1053	1945
Reported ANC registration	1664	2685
% of ANC registration against expected pregnancies	158%	138%

GO 1

A Govt. Order (GO) issued to correct the problem related to duplicate counting of pregnancies/women states…

"Only women who are provided ANC services by that ANM or PHC Medical Officer should be registered – whether or not they are from the area served by that facility – but before registering her, we should confirm that she has not visited another public health facility or a private facility known to be sending reports. A mere visit for taking a pregnancy test should not be registered. In most situations, first ANC and registration of pregnant woman would be the same event – the only exception being where the first ANC has been done in a private health facility which is not reporting data to HMIS on a regular basis. At the time of first ANC every woman must be given a filled out MCH card but if for some reason this is not done, it should still be noted as registration of pregnancy. Since pregnancy tests immediately show positive or negative, every effort should be made to complete first ANC and issuing of the registration card in the same visit where her pregnancy was detected".

14. Refer to GO1 stated above. Would you welcome such a detailed GO?

a. Yes
b. No

15. Can GO1 be modified by Programme Managers request?

a. Yes
b. No

16. One NGO alleges that such programmed confusions are not accidental and that many Programme Managers prefer to have some confusion around such details (refer GO1). Do you think it is agreeable?

a. Yes
b. No
d. No, and confusions can be reduced by analyzing programme specific data.

17. District A reported 2108 cases of polio in a single month. Whereas until previous month only 2 cases of confirmed polio were reported (also confirmed in WHO surveillance). What could be the cause for this over reporting?

a. Probably AFP cases are entered
b. Probably entered number of children who received polio vaccine instead of those diagnosed with polio
c. Data entry error
d. All of above

18. Suppose District A reported 2108 cases of polio in a single month. What will be your corrective action to locate the error

a. Drill down exercise to identify the facility which reported high figures
b. Verify the data from the recording registers of the facility
d. Make the corrections accordingly
d. All of the above

19. While analyzing data for your district, you found that some facilities are reporting 'Centrochroman pills given' and some are not. On enquiry you found that there is no supply of centrochroman pills from the State itself. What could be the possible reasons for such reporting?

a. Centrochroman pills were assume (by few districts) to be synonymous with oral pills and hence centrochroman pills are reported
b. Few districts have stock of previous quarter
c. Centrochroman pills are being given by private sector
d. All of the above

20. '% of home deliveries who got JSY payment' is over 1000% in district in the last quarter. This could be due to any of the following, except…

a. Some facilities reported 'amount paid' rather than 'number of beneficiaries paid'.
b. Data on 'payments made' are from one source and 'numbers of home deliveries' are from another source. First is over-reporting or normal reporting and the second is under-reporting.
c. There was a backlog of JSY payments and these were all paid together.
d. Payments for home deliveries are only to BPL home deliveries but denominator being used is all home deliveries.

SET C

1. District X reported 4838 cases of malaria in a single month. District has API of only 1.5 and in previous 6 months only 500 cases of confirmed malaria were reported. What could be the possible causes for this problem?

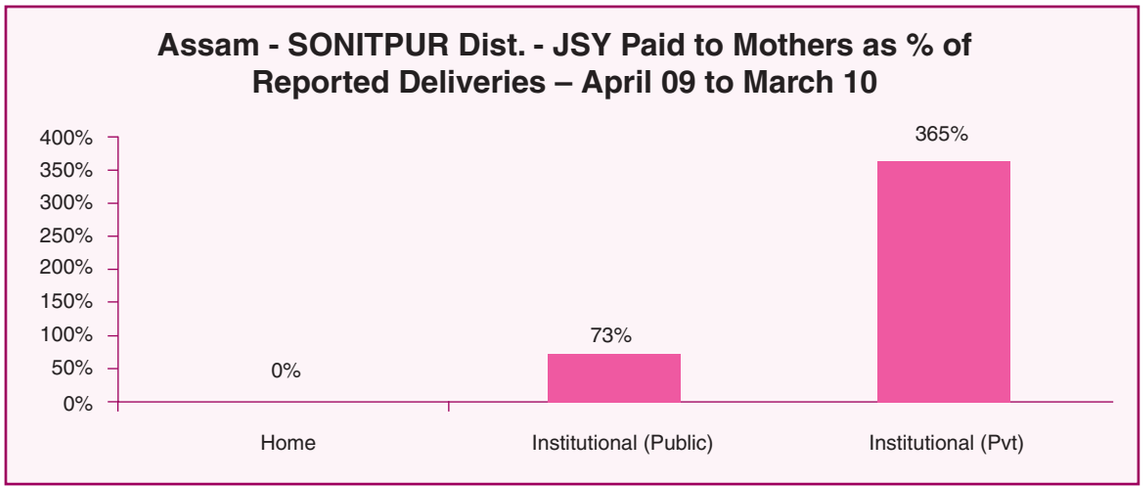
a. Probably 'Total number of cases examined for blood slides' are being reported here

b. Probably few facilities did not report positive cases during past few months and cleared their "reporting back log" only now

c. Probably there is malaria outbreak and emergency action is required

d. All of the above

Figure 4



2. 'Percentage of deliveries who got JSY payment from private institutions' is reported to be 365% in Figure 4. This could be due to any of the following, except…

a. There is a backlog of JSY payments from previous year and all were paid together

b. Some of the private facilities are reporting the 'Amount paid' rather than 'Number of beneficiaries' who were paid

c. The deliveries conducted at private sector are not reported properly since there is no system of collecting data from them. However, the payments made data is reported without gaps since records of payment made are well maintained by the accounts division of district and block headquarters.

d. Some of the women who delivered at private institution were paid JSY twice as they gave birth to twins.

To overcome such errors (refer Figure 4), corrective measures are suggested which states that…

"Guidelines are issued to data entry operators to take the data element of private sector institutional deliveries from the payments made list. But even this would underestimate pregnancies seen. Guidelines to encourage monthly reporting of private sector facilities is also put in place."

Q. Please comment on this corrective measure.

3. District B reported 8666 cases of measles among children below 5 years. It was found out that majority of cases were reported by only 1 block. Incidence of measles in the State was lower. What could be the possible causes?

a. Probably, 'Number of children immunized for measles' are reported here
b. There was an outbreak of measles
c. "Reporting back-log" was cleared
d. Inadvertent data entry error, instead of 86 two extra six were added
e. A & D

4. 'Total number of fully immunized children' for District X are 150% of live births and 160% of BCG. The most likely errors are all of the following,

a. Some facilities are adding number of children immunized for each vaccine to achieve the full immunization figure.
b. Dropout rate between BCG to Measles is very high.
c. 'Full immunization in 12 to 23 months' and 'Full immunization in 9 to 11 months' are being added.
d. Both A & C

5. In District C, 'Number of pregnant women given 100 IFA tablets' is 140% against 'ANC registration' of 95%. What could be the possible cause?

a. Probably few facilities are reporting 'number of IFA tablets given' instead of 'number of pregnant women who received IFA tablets'
b. Probably few facilities are reporting this number even before all 100 IFA tablets are given.
c. Probably more than 100 IFA tablets are given to pregnant women because stock is in abundance or because women with moderate anemia require 200 IFA tablets
d. Reporting all women, pregnant or not, who were given IFA tablets.
e. All of the above.

To overcome this error, the corrective action reads…

"A GO is issued to ANMs to report only number of **pregnant** women receiving **at least** 100 IFA tablets anytime they are given this- and not to count them again if they receive more tablets. This GO is then reinforced during monthly ANM review meeting.

Q. Please comment on the above statement/corrective measure.

6. Data from District A shows 'ANC registered in first trimester' higher than 'Total number of ANC registered'. What could be the reason?

a. Facilities don't have columns to record this data element in their registers.
b. Probably, the instruction itself confuses 'first trimester registration' with 'first ANC' since later data element is not asked for.

c. Probably 'ANC registered' are being underreported only those women who were issued MC cards were counted and cards were out of print.

d. None of the above.

7. For District X, DLHS and NFHS reports 'Number of pregnant women who have had at least 3 ANC checkups' as 29% and 26%, respectively. However, HMIS reports 79%. What could be the possible reasons for over reporting?

a. Each facility has monthly targets probably facilities refer to the target number and report similar numbers.

b. The register only records 'women received ANC'. Guidelines and space for computation of women receiving 3 ANCs is not available

c. Double counting: both Sub center and the facility where she was seen are reporting.

d. All of the above

8. In District B 'Number of newborns breast fed within 1 hour' is lower than expected DLHS. What could be the reasons?

a. Only few facilities reported

b. There is no space in recording registers to enter this.

c. All facilities reported but only for some months

d. ANM is not including services rendered by ASHA in the report

e. All of the above

9. 'Number of pregnant women given 100 IFA tablets' is 140% against ANC registration of 95%. What could be the possible causes?

a. Probably 'number of IFA tablets given' are reported instead of 'number of pregnant women'

b. Probably reporting before women are given all 100 IFA tablets

c. Reporting all women, pregnant or not, who were given IFA tablets

d. All of the above

10. 'Number of pregnant women given 100 IFA tablets' is 130% against ANC registration of 95%. What instructions would you give to your health staff to improve the quality of data?

a. Report only beneficiaries not the number of tablets.

b. Do not count women who were given 200 IFA tablets as 2 beneficiaries instead of 1.

c. Do not count **All** women who were given IFA tablets, count only pregnant women.

d. All of the above.

11. 'BCG immunization' is 140%, higher than total number of deliveries. What could be the probable cause for over-reporting?

a. Immunization done at camps are also reported

b. Deliveries are under-reported (home and private sector deliveries are being missed)

c. Many children immunized after 1 year of age especially in camps are also included whereas the denominator includes only children <1yr
d. Denominator for immunization has been set very low
e. All of the above

12. 'Breast-feeding in first hour' is 70% in District X but DLHS reports only 20%. The most likely cause for this over-reporting is?

a. Since there is no place for recording this in primary register, ANMs guess the number and report.
b. Double counting: Both facility and ANM are reporting.
c. All institutional deliveries are assumed to be breastfeeding in the first hour and marked up.
d. All of the above

13. All the following are correct validation rules, except…

a. ANC Registration should be equal or greater than TT1
b. Early ANC Registration must be less than or equal to ANC Registration
c. OPV2 should be equal to DPT2
d. Newborns weighed at birth should be equal to total delivery.

14. Data for District X shows C-sections at Block PHCs but State has not authorized Block PHCs to perform C-sections. These PHCs should be instructed that…

a. The C-section box should be left blank
b. The C-section box should have zero written in it.
c. Since there are no C-sections, put the figure in normal deliveries box.
d. The C-sections done at private facilities in the block can be entered.

15. In a Low Performing State (LPS), few blocks have reported 'JSY incentive paid to ANM/AWW' but others have not. Which of the following is true?

a. ANM/AWW in LPS are not entitled for incentives, hence the box should be left zero
b. ANM/AWW in LPS are not entitled for incentives, hence the box should be left blank
c. ANM/AWW should be paid and number of those who were paid has to be written.

16. You are Block Programme Manager and data for your block shows very high number of 'New cases detected for hypertension in pregnant women'. What is the actual problem?

a. Double counting: instead of counting only new cases detected, every follow-up visit by a hypertensive pregnant woman is also being counted.
b. "Reporting back-log"
c. False reporting.
d. None of the above

17. 'Pregnant women treated for complications' are under reported in your district. What could be the possible data quality errors for this?

a. Only some facilities are reporting this data element.
b. Recording registers do not have columns for recording these data elements.
c. Only complications requiring admission or prolonged stay (like C-section or Eclampsia) are being recorded, those seen by SBA are not recorded.
d. Complications are recorded in the Labour Room Registers but data is sourced from Pregnancy Tracking Registers.
e. All of the above

18. A district reported 2857 cases of immunization related injection abscess; however, only 10 cases were confirmed on verification. What could be the most common reason for this over-reporting?

a. Probably cases of children with minor complications such as pain at site are also reported.
b. Probably cases of abscess whether due to immunization or not are also reported.
c. Probably reported hearsay cases of abscess (not witnessed or examined personally).
d. Data entry error.
e. All of the above

19. Data of District A shows that 'Number for ANC TT1' equals 'Number of TT2/booster'. In second pregnancy TT booster is given not TT1. Ideally, TT1 should be less than half of TT2/booster. Why is there this error?

a. Data are mechanically entered for TT1 and TT2 against every pregnant woman even when a single injection is given.
b. Most 2nd pregnancies are after 3 years so 2 injections are to be given.
c. There is a "quiet" instruction to give 2 injections to every pregnant woman.
d. None of the above

20. '% of home deliveries who got JSY payment' is over 1000% in district in the last quarter. This could be due to any of the following, except…

a. Some facilities reported 'amount paid' rather than 'number of beneficiaries paid'.
b. Data on 'payments made' are from one source and 'numbers of home deliveries' are from another source. First is over-reporting or normal reporting and the second is under-reporting.
c. There was a backlog of JSY payments and these were all paid together.
d. Payments for home deliveries are only to BPL home deliveries but denominator being used is all home deliveries.

ANSWER SHEET

COMPETENCY 2 (KNOWLDEGE & USE OF INDICATORS)

SET-A		SET-B		SET-C		SET-D	
Qu. No.	Answers	Qu. No.	Answers	Qu. No.	Answers	Qu. No.	Answers
1	B	1	B	1	B	1	A
2	D	2	C	2	C	2	C
3	-	3	A	3	A	3	B
4	C	4	B	4	B	4	B
5	E	5	A	5	B	5	D
6	B	6	B	6	C	6	C
7	A	7	D	7	D	7	A
8	C	8	C	8	C	8	A
9	A	9	B	9	B	9	C
10	D	10	D	10	B	10	D
11	C	11	D	11	D	11	E
12	D	12	D	12	B	12	E
13	D	13	B	13	B	13	D
14	D	14	A	14	A	14	C
15	B	15	E	15	A	15	A
16	A	16	C	16	B	16	C
17	C	17	A	17	B	17	C
18	B	18	A	18	A	18	C
19	D	19	A	19	B	19	-
20	C	20	D	20	C	20	C

ANSWER SHEET

COMPETENCY 3 (DATA QUALITY)

SET-A		SET-B		SET-C	
Qu. No.	Answers	Qu. No.	Answers	Qu. No.	Answers
1	E	1	B	1	D
2	B	2	D	2	D
3	D	3	D	3	E
4	D	4	B	4	D
5	D	5	E	5	E
6	C	6	C	6	D
7	B	7	D	7	D
8	A&C	8	A	8	E
9	B	9	B	9	D
10	C	10	C	10	D
11	D	11	E	11	E
12	C	12	B	12	D
13	-	13	E	13	D
14	B	14	A	14	A
15	D	15	A*	15	B
16	B	16	C	16	A
17	D	17	D	17	E
18	C	18	D	18	E
19	B	19	D	19	A
20	A	20	B	20	D

* If a GO lacks clarity then clarity can be requested for minimizing the errors in recording and reporting

EVALUATION OF TRAINING FORM

Name (Optional): .....

Designation (Optional): .....

Office Address: .....

Date: .....

Please indicate your impressions of the items listed below.

		Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1.	The training met my expectations.	❍	❍	❍	❍	❍
2.	I will be able to apply the knowledge learned.	❍	❍	❍	❍	❍
3.	The training objectives for each topic were identified and followed.	❍	❍	❍	❍	❍
4.	The content was organized and easy to follow.	❍	❍	❍	❍	❍
5.	The materials distributed were pertinent and useful.	❍	❍	❍	❍	❍
6.	The trainer was knowledgeable.	❍	❍	❍	❍	❍
7.	Instructions were of good quality.	❍	❍	❍	❍	❍
8.	The trainer met the training objectives.	❍	❍	❍	❍	❍
9.	Class participation and interaction were encouraged.	❍	❍	❍	❍	❍
10.	Adequate time was provided for questions and discussion.	❍	❍	❍	❍	❍
11.	How do you rate the training overall? Excellent (5) ❍ Good (4) ❍ Average (3) ❍ Poor (3) ❍ Very poor (1) ❍					
12.	What aspects of the training could be improved?					
13.	Other comments?					

Sample excel sheet for computation of 'Evaluation of Training' Scores

Evaluation of Training Form																					
Title of the Training																					
State/District Office																					
Date																					
Trainees' Designation																					
	SCORES FROM TRAINEES																				
Trainee number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	**TOTAL OF EACH QUES**
Name of Trainee																					
Q.1																					**0**
Q.2																					**0**
Q.3																					**0**
Q.4																					**0**
Q.5																					**0**
Q.6																					**0**
Q.7																					**0**
Q.8																					**0**
Q.9																					**0**
Q.10																					**0**
Q.11																					**0**
TOTAL SCORE FOR TRAINING																					**0**
Suggestions																					
Comments																					
NOTES: Maximum Possible Score is 55.																					

Sample excel sheet for computation of 'Evaluation of Competencies'

Evaluation of Competency 1																		
Title of the Training																		
State/District Office																		
Date																		
Trainees' Designation																		
	PRE-POST SCORES OF TRAINEES																	
Pre-Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Trainee number	1		2		3		4		5		6		7		8		9	
Name of Trainee																		
Section 1																		
Q.1i																		
Q.1ii																		
Q.1iii																		
Q.1iv																		
Section 2																		
Q.2i																		
Q.2ii																		
Section 3																		
Q.3i																		
Q.3ii																		
Q.3iii																		
Q.3iv																		
Section 4																		
Q.4i																		
Q.4ii																		
Section 5																		
Q.5i																		
Q.5ii																		
Q.5iii																		
TOTAL SCORE	###	####																
DIFFERENCE	#VALUE!																	

Use of Information in District Health Planning

Why Use Data?

- Need to know the disease profile- epidemiology is the study of prevalence and determinants of disease.
- Need to know the burden of disease—
  - *So that we know what are the health priorities and their determinants*
- Need to know situation in service delivery/access & utilization of services:
  - *So that areas/communities which lag behind/have greater need could be allocated more resources and inputs.*

Sources of Data/Information

- External Surveys
- Data from Routine Monitoring Systems.
- Commissioned Surveys and Studies.

External Surveys

- SRS: Sample Registration System
  - Birth Rate, Death Rate, IMR, Total Fertility Rate
- NFHS- III- 2005-06- RCH service delivery data
- DLHS-III- 2007-08- RCH service delivery data.
- UNICEF Coverage evaluation survey- 2009
- NSSO- 60th round- cost of health care
- Strengths and Limitations of each source

Routine Monitoring Systems

- Malaria- API, ABER, SPR, SFR, PF rate- by state, district and even by facility.
- Other VBDs- disease prevalence.
- Tuberculosis- case detection rates, cure rates, death rates,

- Leprosy- New MB cases and cases in children.
- IDSP- other communicable disease, disease outbreaks,
- Hospital Data: From hospitals which maintain reasonable case records.

Health Management Information System

- Mostly pertain to Output indicators- not as useful for outcomes or for processes. Mostly relate to service delivery: Indicators of strategy:
- Most process and inputs data would be from programme reporting- these have to be collected by programme officers independently.
- Impact/larger health outcome indicators present- but require greater interpretation- Maternal deaths, infant deaths, deaths under 5, peri-natal mortality, still births,

Issues of Data Quality

- Completeness of Reporting
  - Non reporting areas eg corporations, company townships etc.
  - Non reporting public sector facilities
  - Non reporting private sector facilities
- Timeliness of Reporting: (Just leave out data from last one or two months to improve data quality.)
- Accuracy and Reliability of Reporting.
  1. Primary recording systems – inadequate- not having data elements, not amenable to easy computation.
  2. Data Duplication- same event reported from two centers.
  3. Data definition problems- use of standard definitions and inherently weak definitions. (Training with good manuals helps)
  4. Problems in aggregation- exponentially increases if amount of disaggregation multiplies.
  5. Data entry errors- relatively easily checked by validation checks- statistical outliers.

  Most data quality issues have nothing to do with lack of training. They are usually systemic problems.

Issues of Data Interpretation...

- Know which indicators to use – and for what…
  - The choice of denominators:
    - expected population based vs reported- data based.
    - For population based- updating to current population size-
    - Uncertain/overlapping catchment area- for example institutional delivery rate in the headquarters block would be difficult to estimate- since the DH serves block mainly- but also the rest of district.
    - At facility level and in small blocks- use of data elements rather than indicators may be justified.
- Understanding of indicators and their inherent characteristics are useful.

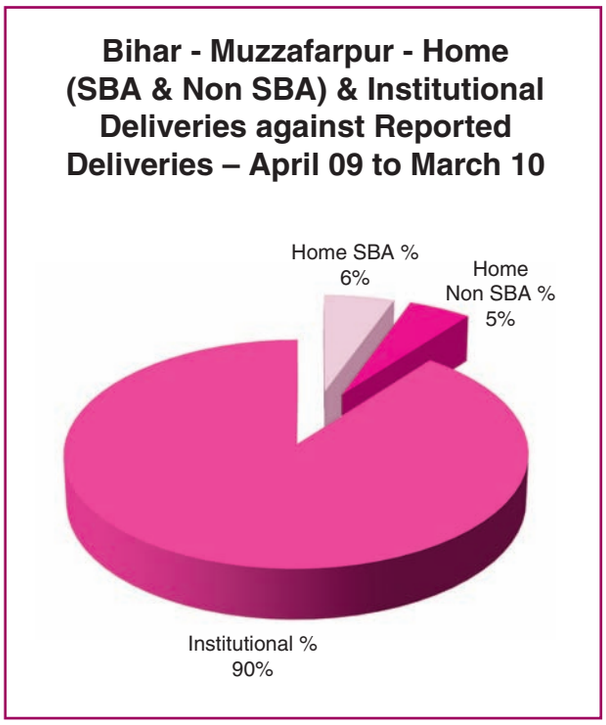
False Reporting and Falsification:

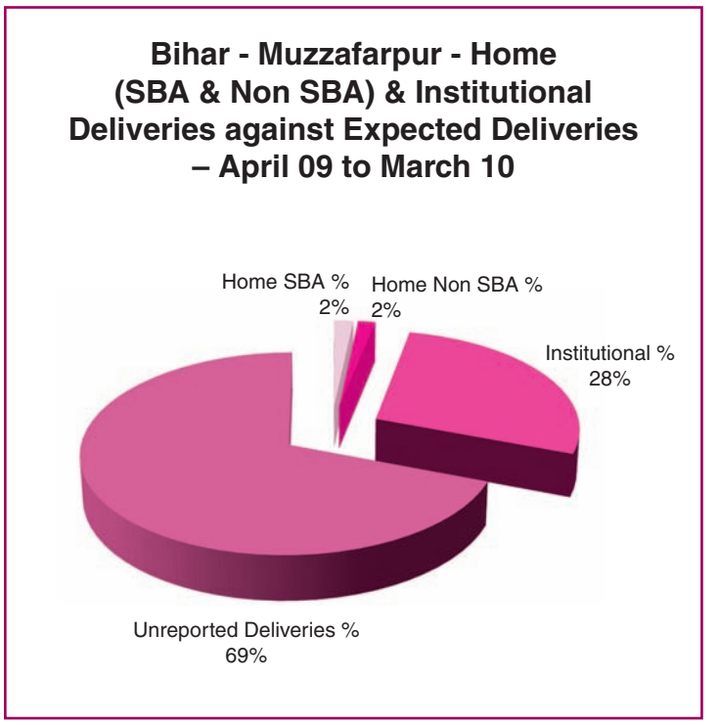
- False reporting and Falsification:
- False reporting: Not as common as expected. Only a 1% over-reporting at primary level. Also it affects some data elements more than others.- those highly monitored, those that beg it- eg no of cases of ANC, no of ANC cases where BP taken!!!
- Falsification- usually more at district and higher levels. Though recent trend is to give each block/each facility a target number for each data element and encourage reporting accordingly. Also done to compensate for data quality errors- which really confuses the picture.

HMIS in District Planning

- HMIS in District Planning
- Despite all these problems – any district planner could use this data as a more useful source of information- than any other existing source of data
- Because Information could be interpreted in context. This is not possible at the state or national level- but the /block officer, could explain data gaps. Thus it is a great tool of decentralised programme management, but a very poor tool for enforcing accountability, or even as information for casting policy.
- Could be used for setting targets/outcomes- but greater use in understanding patterns across facilities – with regard to access and quality of care.

1. Service delivery coverage–the gap between what isreported and what is expected...

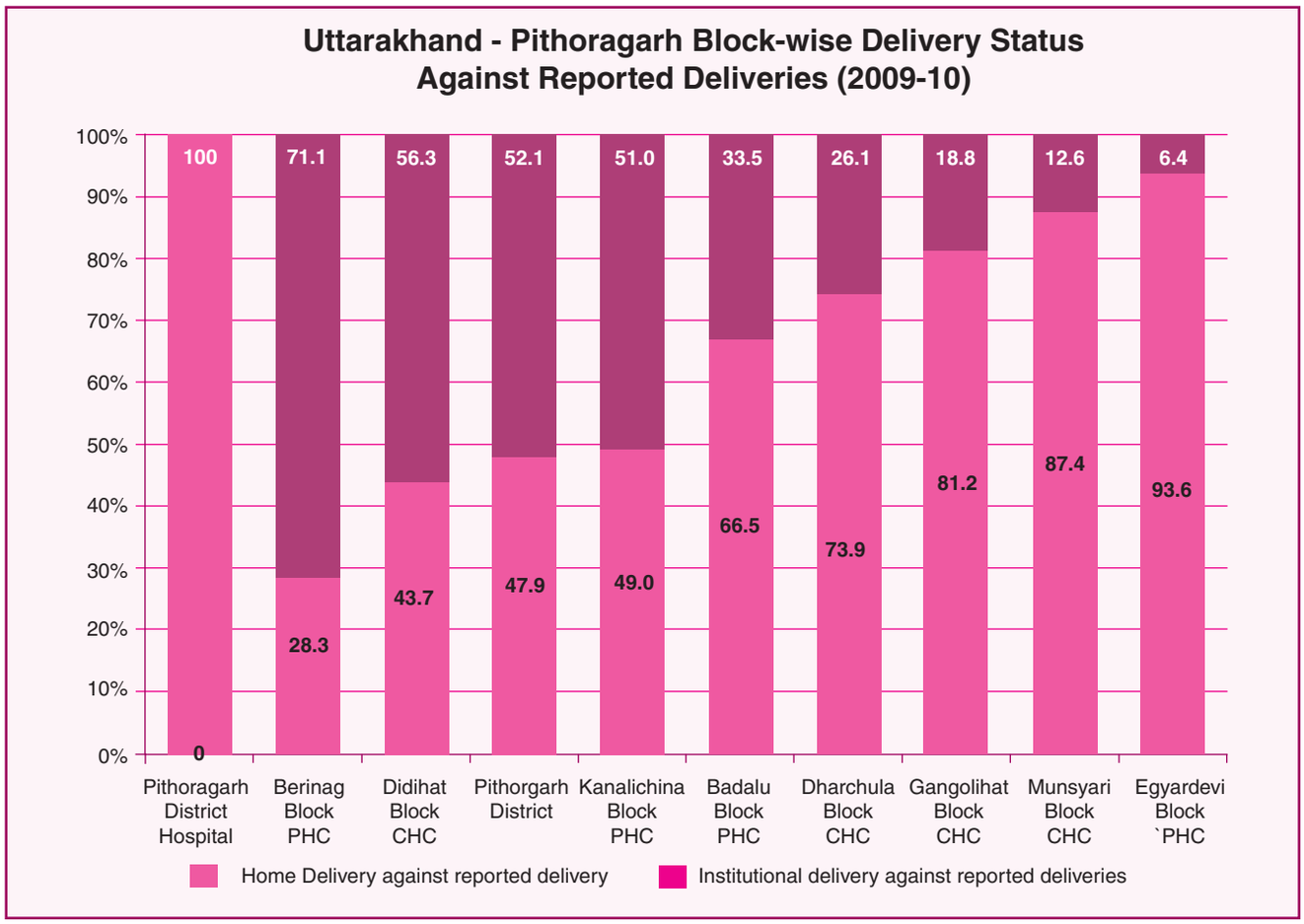


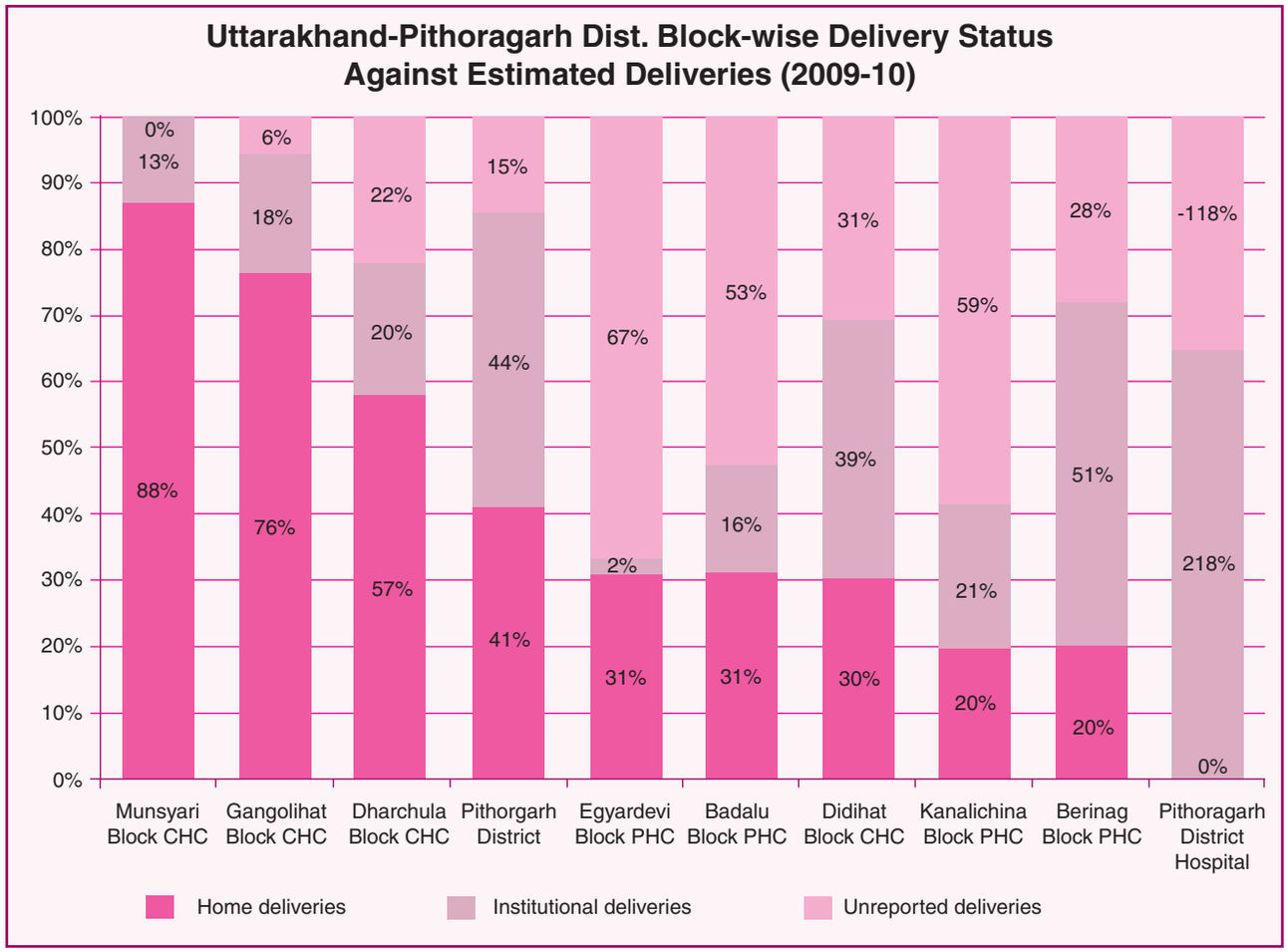


Muzzafar pur- 2009- 10 HMIS data				
Total Population	43,04,074		Expected Deliveries	1,30,444
Home SBA	Home Non SBA	Institutional	Total Deliveries Reported	Unreported Deliveries
2,217	1,976	35,941	40,134	90,310
Home SBA %	Home Non SBA%	Institutional %	Total Deliveries Reported %	Unreported Deliveries %
2%	2%	28%	31%	69%

2. Facility Development Planning

- Which facilities are managing the case loads? For any given service? How they need to be strengthened.
- What is the population that is unable to access services- what facilities need to be built up/revitalised?
- What is the range of services offered? Are there gaps between service guarantees and what is available?
- This has implications on which facilities to take up for strengthening and for differential financing …..





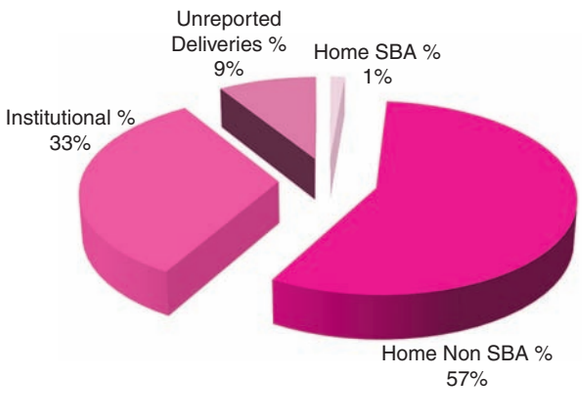
Facility Development Barwani District (MP) 2009-10

BARWANI DISTRICT	SCs	PHCs	CHCs	SDH/DH	Other State owned institution	Private Facilites
Deliveries conducted	1%	31%	39%	28%	0%	0%
Complicated deliveries managed	-	18%	21%	49%	0%	12%
C Sections Conducted	-	0%	0%	81%	6%	13%
Sterilisations conducted	-	9%	55%	36%	0%	0%

BARWANI DISTRICT	SCs	PHCs	CHCs	SDH/DH	Other State owned institution	Private Facilites
Deliveries conducted	1%	31%	39%	28%	0%	0%
Complicated deliveries managed	-	18%	21%	49%	0%	12%
C Sections Conducted	-	0%	0%	81%	6%	13%
Sterilisations conducted	-	9%	55%	36%	0%	0%

Delivery status 2009-10

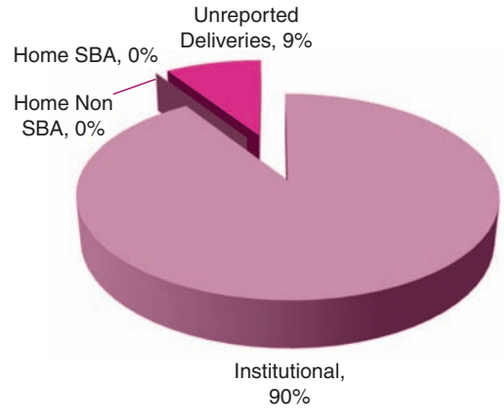
West Bengal - South 24 Parganas - Home (SBA & Non SBA) & Institutional Deliveries Against Expected Deliveries – April 09 to March 10



Reported Deliveries	125497 (91%)
C- sections	4355(3%)
Other Compl. pregnancies	4244(3%)
PNC complications	16019
Still births	1501
Iv antibiotics	1237
Iv hypertensive	86
Iv oxytocics	1137
Blood transfusion	65
severe anemia treated	1304
Abortions managed	2156(1%)
RTI/STI- per lakh OPD cases	33508(810)

South 24 paraganas- West Bengal

Kerala - Palakkad Dist. Home (SBA & Non SBA) & Institutional Deliveries Against Expected Deliveries – April 09 to March 10



Reported Deliveries	**37689 (91%)**
C- sections	10219(27%)
Other Compl. pregnancies	11602(26%)
PNC complications	2
Still births	121
Iv antibiotics	11938
Iv hypertensive	241
Iv oxytocics	1343
Blood transfusion	157
severe anemia treated	99
Abortions managed	1963(5%)
RTI/STI –per lakh OPD cas.	5838(150)

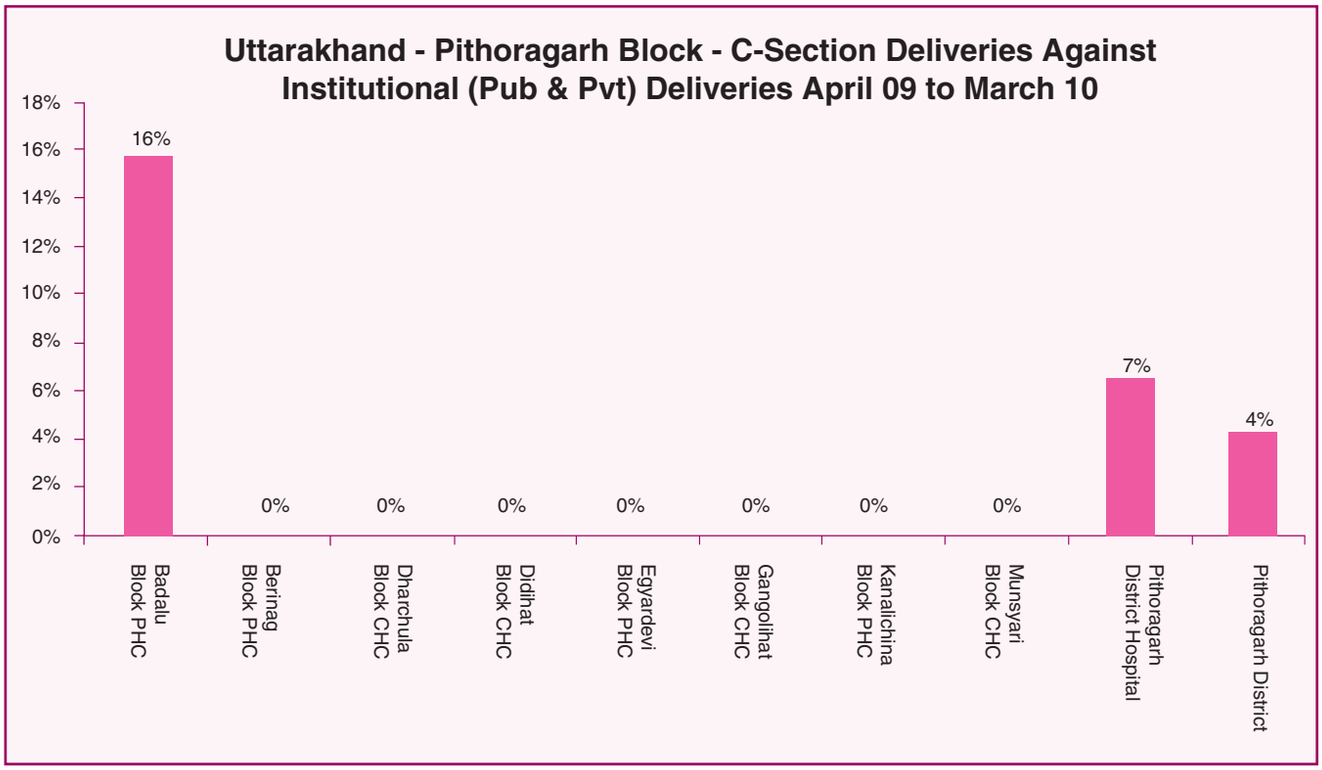
Pallakkad - Kerala

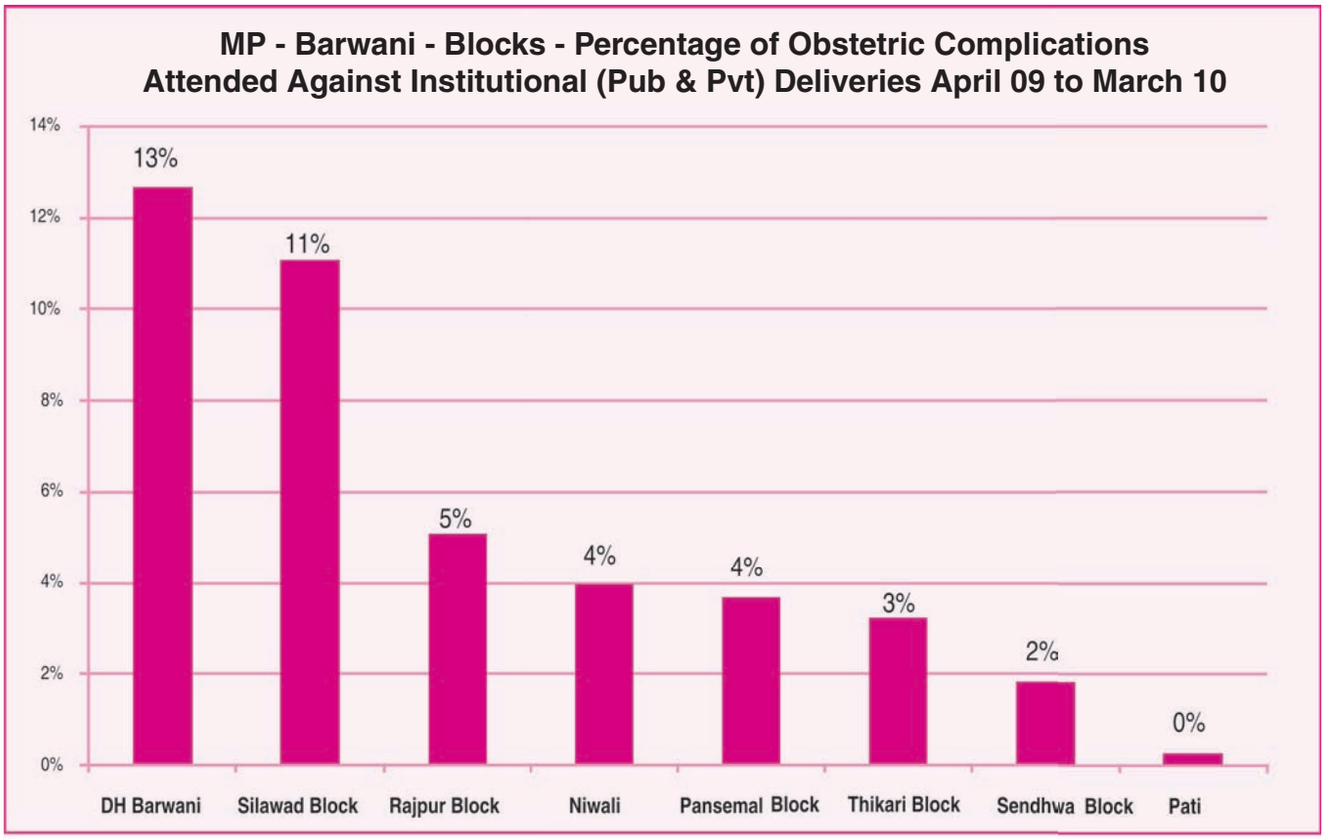
Facility Based maternal care indicators

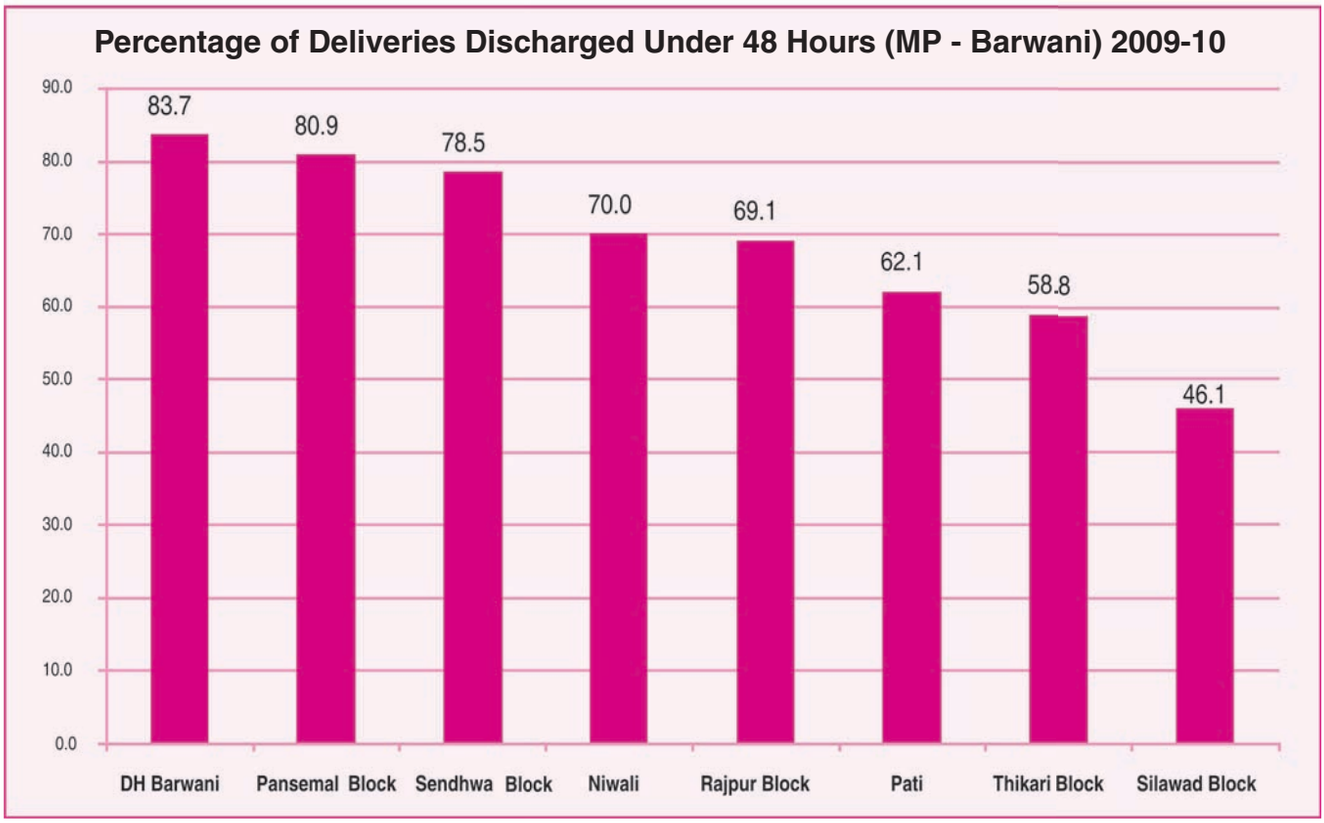
Delivery

- Unreported Deliveries against Estimated Deliveries
- Institutional Deliveries against Estimated Deliveries
- Home Deliveries(SBA& Non SBA) against Estimated Deliveries
- Institutional Deliveries against Reported Deliveries
- Home Deliveries(SBA& Non SBA) against Reported Deliveries
- C Section Deliveries against Institutional Deliveries (Pvt & Pub)
- Percentage of complicated Pregnancies attended against institutional delivery
- Stay beyond 48 hours as percentage of institutional delivery
- Abortion rate

UTTARAKHAND - PITHORAGARH - BLOCKS - DELIVERIES - APR'09 TO MAR'10										
	Badalu Block PHC	**Berinag Block PHC**	**Dharchu-la Block CHC**	**Didihat Block CHC**	**Egyarde-vi Block PHC**	**Gangoli-hat Block CHC**	**Kanalichi-na Block PHC**	**Munsyari Block CHC**	**Pithoragarh District Hospital**	**Pithor-garh District**
Estimated Deliveries	1,047	1,146	1,443	945	1,319	1,600	1,027	1,058	1,263	10,848
Home SBA	**191**	**66**	**639**	**200**	**245**	**888**	**179**	**756**	**-**	3,164
Home Non SBA	**137**	**166**	**189**	**85**	**164**	**333**	**27**	**170**	**-**	**1,271**
Total Home Deliveries	**328**	**232**	**828**	**285**	**409**	**1,221**	**206**	926	-	4,435
Uttarakhand - Pithoragarh - Blocks- % Home Deliveries against expected Deliveries -Apr'09 to Mar'10	31%	20%	57%	30%	31%	76%	20%	88%	0%	41%
Instituional (Pub)	**165**	**589**	**292**	**367**	**28**	283	214	133	2,756	4,827
Instituional (Pvt)	**-**	**-**	**-**	**-**	-	-	-	-	-	-
Total Institutional Deliveries	**165**	**589**	**292**	367	28	283	214	133	2,756	4,827
Uttarakhand - Pithoragarh - Blocks - % Institutional Deliver-ies against expected Deliveries -Apr'09 to Mar'10	16%	51%	20%	39%	2%	18%	21%	13%	218%	44%
Total Reported Deliveries	**493**	821	1,120	652	437	1,504	420	1,059	2,756	9,262
Uttarakhand - Pithoragarh - Blocks - % Unreported Deliver-ies against expected Deliveries -Apr'09 to Mar'10	53%	28%	22%	31%	67%	6%	59%	0%	-118%	15%




MP - Barwani - Blocks - Percentage of Obstetric Complications Attended Against Institutional (Pub & Pvt) Deliveries April 09 to March 10
14%
12%
10%
8%
6%
4%
2%
0%
13%
11%
5%
4%
4%
3%
2%
0%
DH Barwani
Silawad Block
Rajpur Block
Niwali
Pansemal Block
Thikari Block
Sendhwa Block
Pati


Percentage of Deliveries Discharged Under 48 Hours (MP - Barwani) 2009-10
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
83.7
80.9
78.5
70.0
69.1
62.1
58.8
46.1
DH Barwani
Pansemal Block
Sendhwa Block
Niwali
Rajpur Block
Pati
Thikari Block
Silawad Block

Facility Development Indicators

1. Family Planning
   - Male Sterilisation as percentage of total sterilisation
   - Female sterilisation as percentage of total sterilisation
   - NSV as percentage of total sterilisation
   - Laparoscopic sterilisation as percentage of total sterilisation
   - Minilap as percentage of total sterilisation
2. RTI/STI rate per lakh OPD cases
   - Male…Female…Total

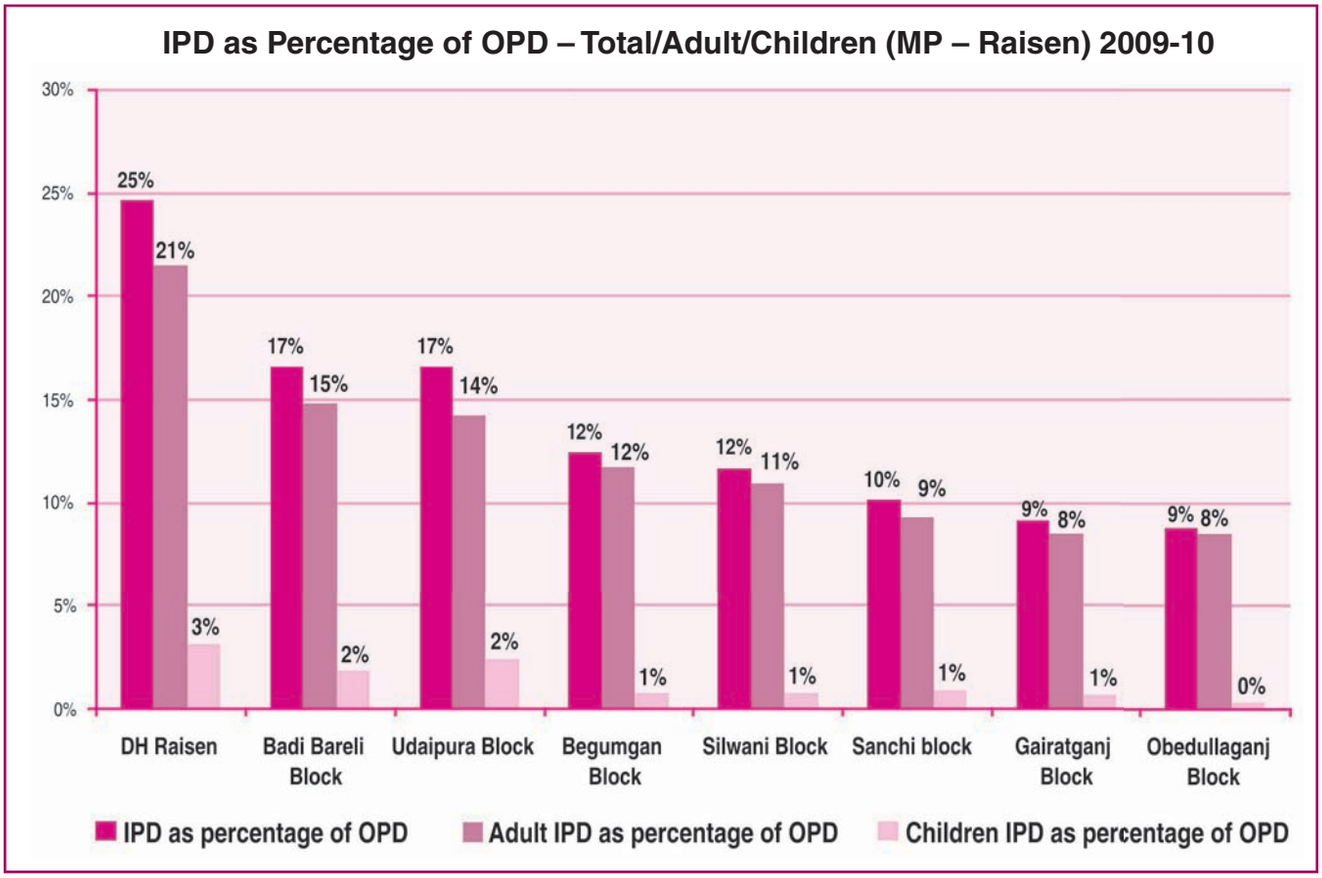
RTI/STI cases per Lakh OPD (Khargone – MP) 2009-10

	RTI/STI per lakh OPD	Male RTI/STI per lakh OPD	Female RTI/STI per lakh OPD
Jhirniya Block	8655	4668	3987
Barwah Block	1849	689	1160
Gogawa Block	899	445	455
Oon Block	591	218	373
CH BARWAH	444	149	295
CH SANAVAD	209	97	112
DH KHARGONE	154	25	129
Bhagwanpura Block	154	79	75
Maheshwar Block	50	19	31
Kasravad Block	47	19	28
Segoan Block	27	0	27
Bhikangoan Block	0	0	0

List of indicators used in Dist. Analysis

- OPD/IPD
  - Total OPD cases and per capita OPD attendance
  - IPD as percentage of OPD
  - Operation major as percentage of total OPD
  - Operation minor as percentage of total OPD
  - AYUSH as percentage of total OPD
  - Dental procedures done as percentage of total OPD
  - Adolescent counseling services as percentage of OPD

- Lab
  - Hb test conducted as percentage of OPD
  - Hb<7gm as percentage of Hb tested
  - HIV test conducted as percentage of OPD
  - HIV positive as percentage of HIV tested
  - Blood Smear Examined as percentage of Population



Other OPD services as percentage of Total OPD (Katni–MP) 2009-10

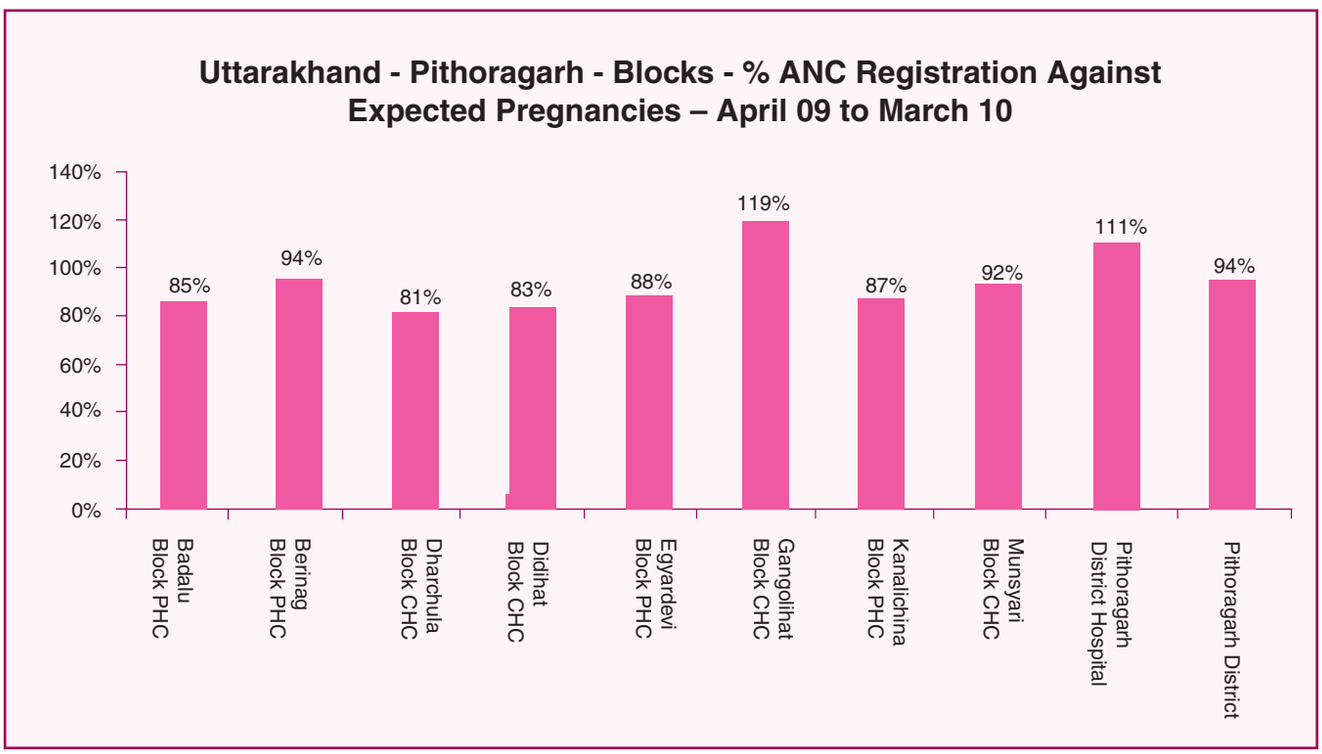
	kanhwara block	DH Katni	Bahorib-and Block	Dhi-markheda Block	Vijayrag-hogarh Block	Barhi Block	Katni Urban	Rithi Block	Badwara Block
Operations Major as percentage of OPD	0%	0.3%	0%	4%	0%	0%	0%	0%	0%
Operations Minor as percentage of IPD	0.3%	0.2%	0%	0.9%	0%	0%	0%	0%	0.1%
AUYSH OPD as percentage of total OPD	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adolescent counselling sessions as percentage of total OPD	0%	0%	0%	0%	5.8%	0%	0%	0.1%	0%
Dental procedures as percentage of total OPD	0%	1.3%	0%	0%	0.7%	0%	0%	0.1%	0%

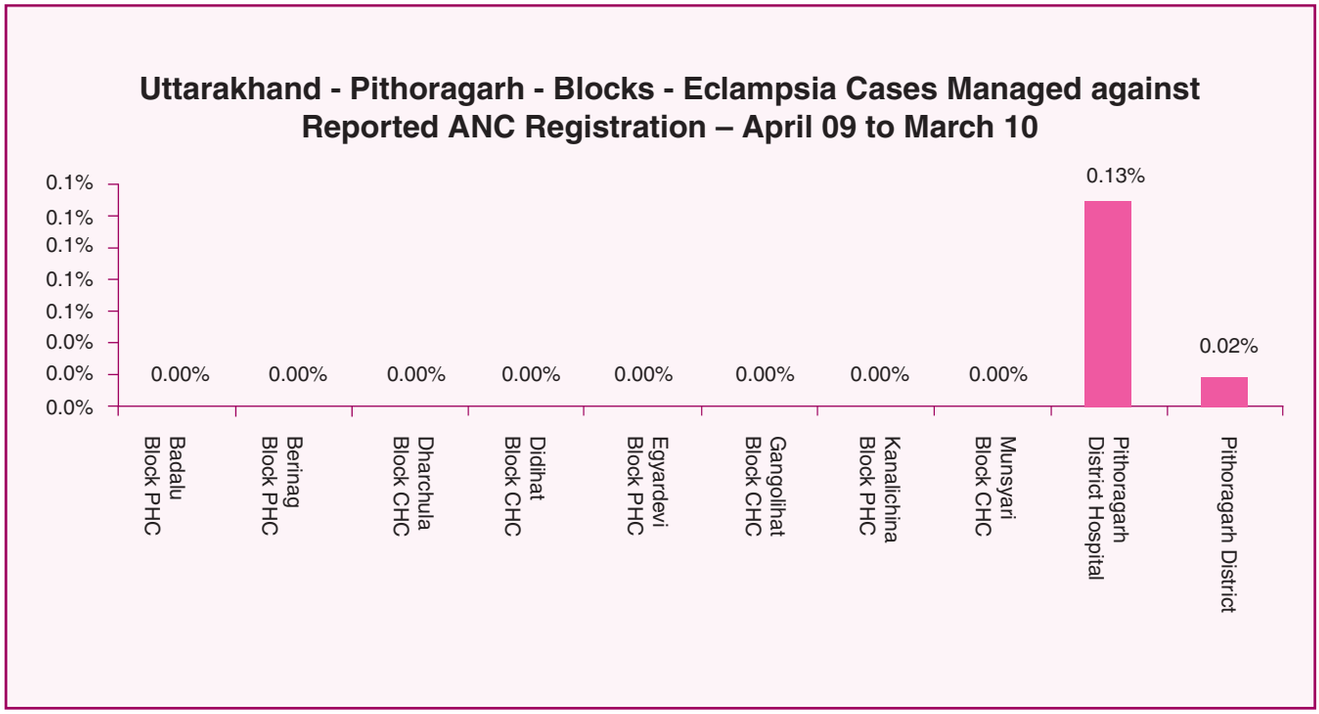
Lab Services Indicators (MP-Jhabua) 2009-10

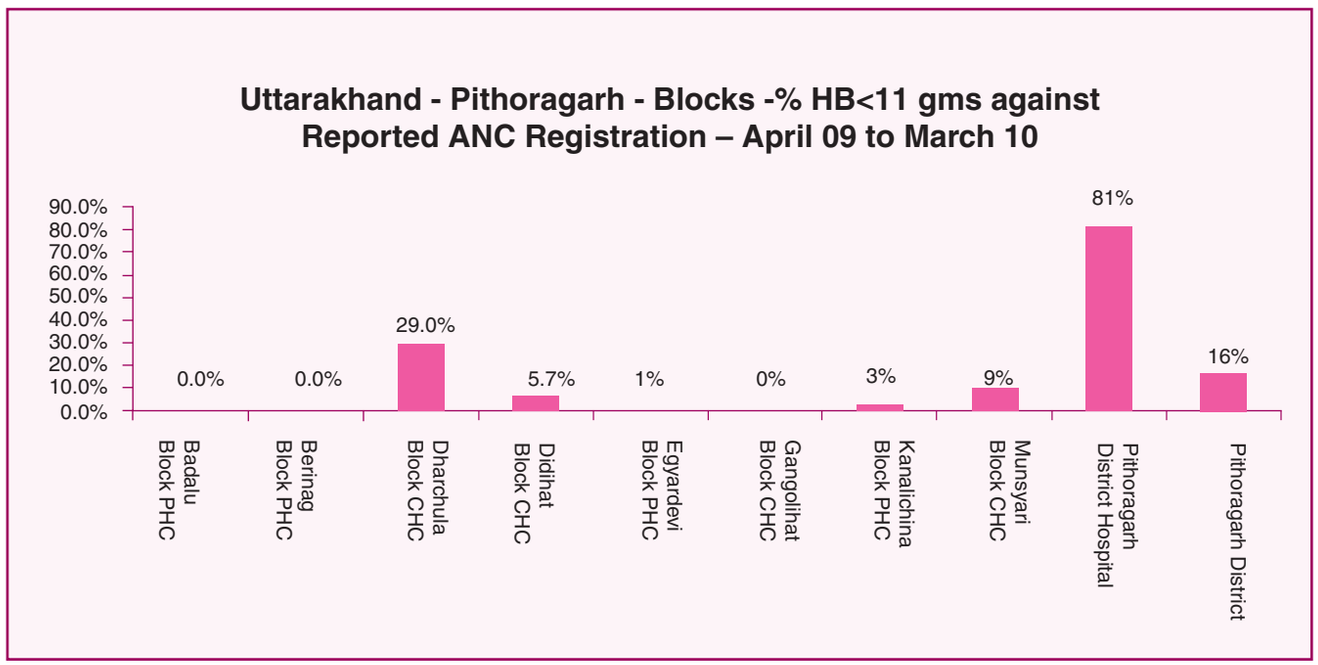
MADHYA PRADESH- JHABUA Dist.- Lab Services - Apr'09 to Mar'10				
Total OPD	Total HB tested	Total HIV Tested	Total Population	
219,993	31,882	1,024	1,656,802	
HB test conducted as %age of OPD	HB<7gm as %age of HB tested	HIV test conducted as %age of OPD	HIV positive as %age of HIV tested	Blood Smear Examined as % of Population
14.5%	9.2%	0.5%	0.8%	6.2%

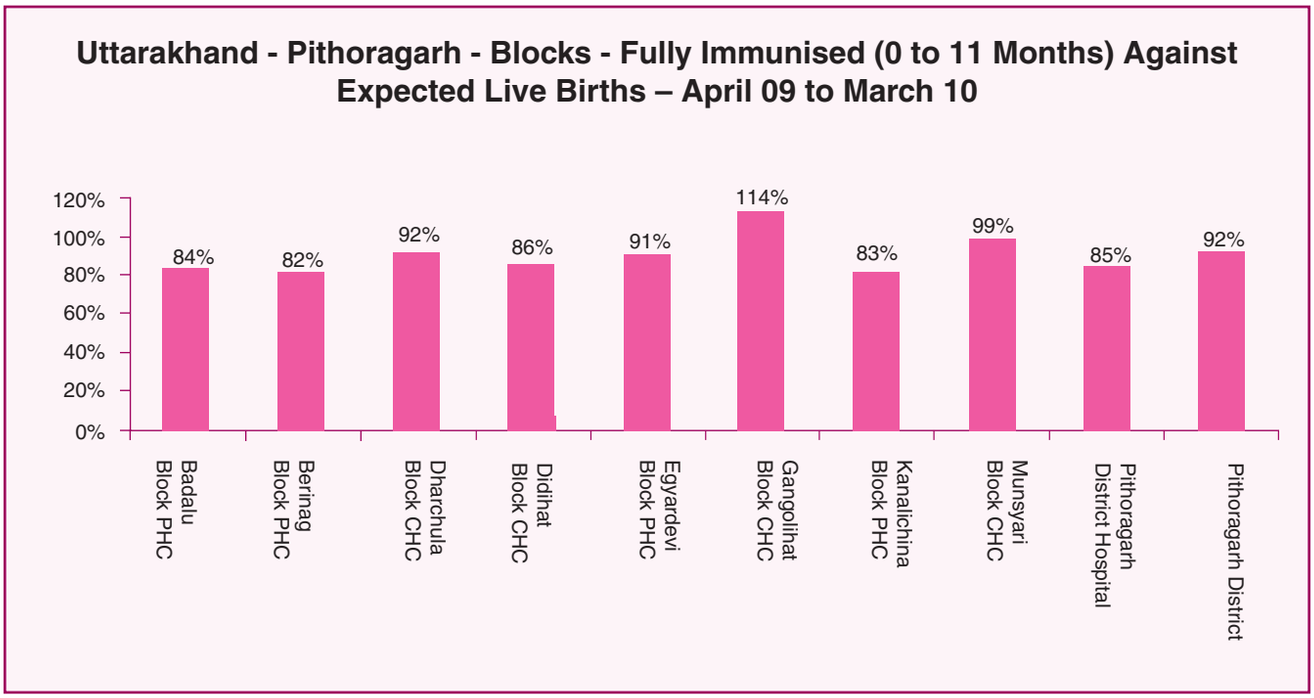
3. Outreach Services

- What is the extent of population coverage- where are the gaps? Eg ANC
- What is the quality of outreach care?
- What are the determinants of poor coverage?
- Quality of services provided
- For immunisation-
  - too few immunisation points, or many sessions being missed?
  - Or adverse facility to immunisation points ratio.
  - Sub-centers without staff?




Uttarakhand - Pithoragarh - Blocks - Eclampsia Cases Managed against Reported ANC Registration – April 09 to March 10
0.1%
0.1%
0.1%
0.1%
0.1%
0.0%
0.0%
0.0%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.00%
0.13%
0.02%
Badalu Block PHC
Berinag Block PHC
Dharchula Block CHC
Didihat Block CHC
Egyardevi Block PHC
Gangolihat Block CHC
Kanalichina Block PHC
Munsyari Block CHC
Pithoragarh District Hospital
Pithoragarh District


Uttarakhand - Pithoragarh - Blocks -% HB<11 gms against Reported ANC Registration – April 09 to March 10
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0.0%
0.0%
29.0%
5.7%
1%
0%
3%
9%
81%
16%
Badalu Block PHC
Berinag Block PHC
Dharchula Block CHC
Didihat Block CHC
Egyardevi Block PHC
Gangolihat Block CHC
Kanalichina Block PHC
Munsyari Block CHC
Pithoragarh District Hospital
Pithoragarh District



Outreach Service Indicators

- ANC
  - ANC Registration against Expected Pregnancies
  - ANC Registration in First trimester against Total ANC registration/ Expected pregnancies
  - 3 ANC Checkups against ANC Registrations
  - TT1 given to Pregnant women against ANC Registration
  - 100 IFA Tablets given to Pregnant women against ANC Registration
  - Hypertension cases detected against ANC registration
  - Eclampsia cases managed against ANC registration
  - Percentage of ANC moderately anemic (Hb<11) against ANC registration
  - Percentage of ANC severe anemia treated (Hb<7) against ANC registration
- Postpartum Care
  - PNC within 48 hours as percentage of reported delivery
  - PNC between 48hours to 14 days as percentage of reported delivery

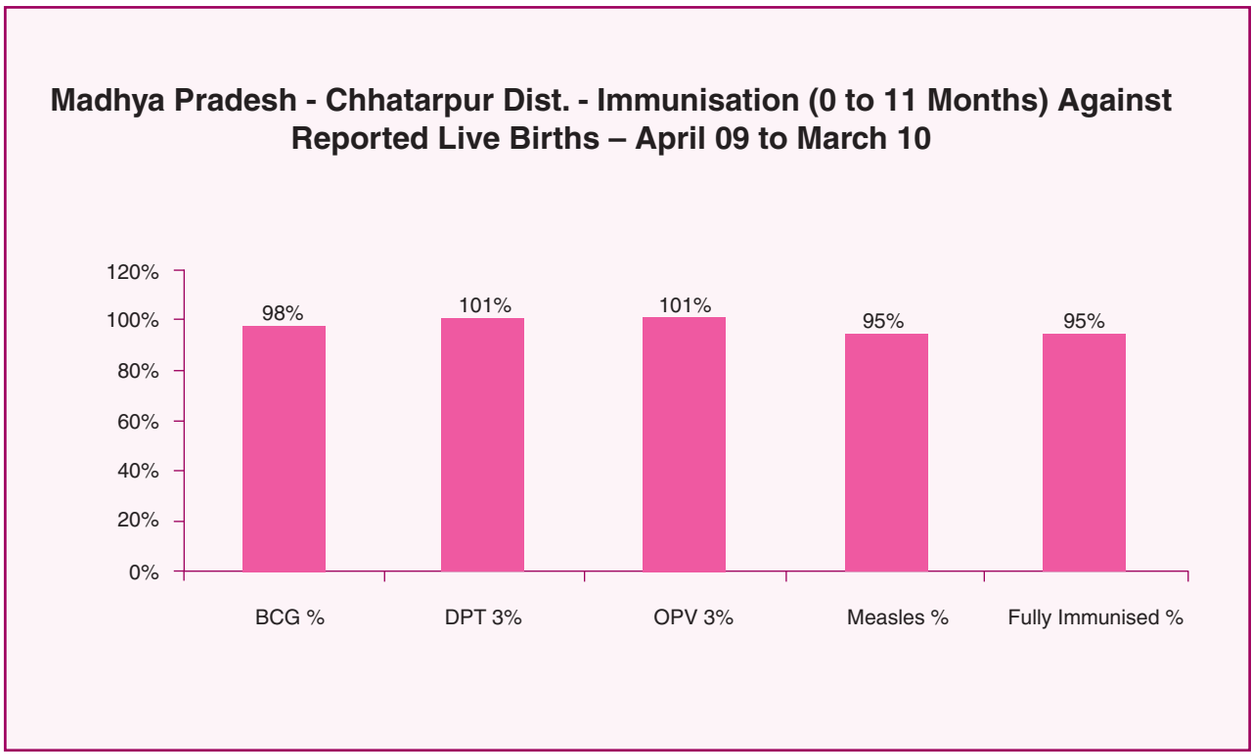
Outreach Service Indicators

- Immunization
  - BCG given against Expected Live Births
  - OPV3 given against Expected Live Births
  - DPT3 given against Expected Live Births

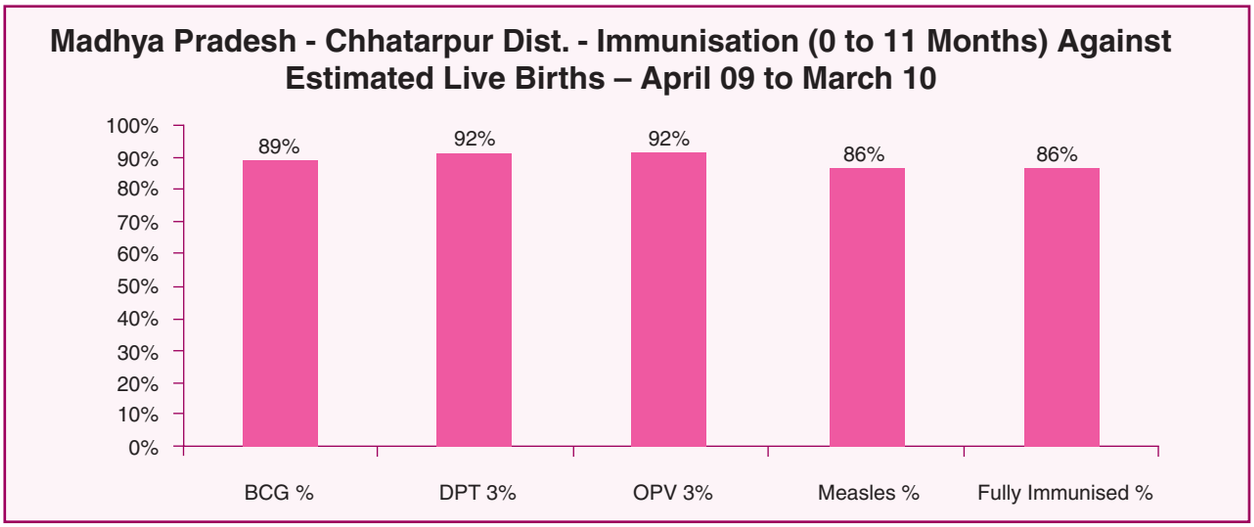
- Measles given against Expected Live Births
- Fully Immunized Children against Expected Live Births- by sex and totals
- Percentage of immunisation sessions held against planned
- Percentage of immunisation sessions attended by ASHA against sessions held

• Family Planning :
- All Methods Users (Sterilizations(Male &Female)+IUD+ Condom pieces/72 + OCP Cycles/13)
- Percentage of sterilizations against reported FP Methods
- Percentage of IUD Insertions against reported FP Methods
- Percentage of Condom Users against reported FP Methods
- Percentage of OCP Users against reported FP Methods

Immunisation status against reported live births (MP – Chhatarpur) 2009-10



Immunisation status against estimated live births (MP – Chhatarpur) 2009-10



Immunisation sessions (MP-Ratlam) 2009-10

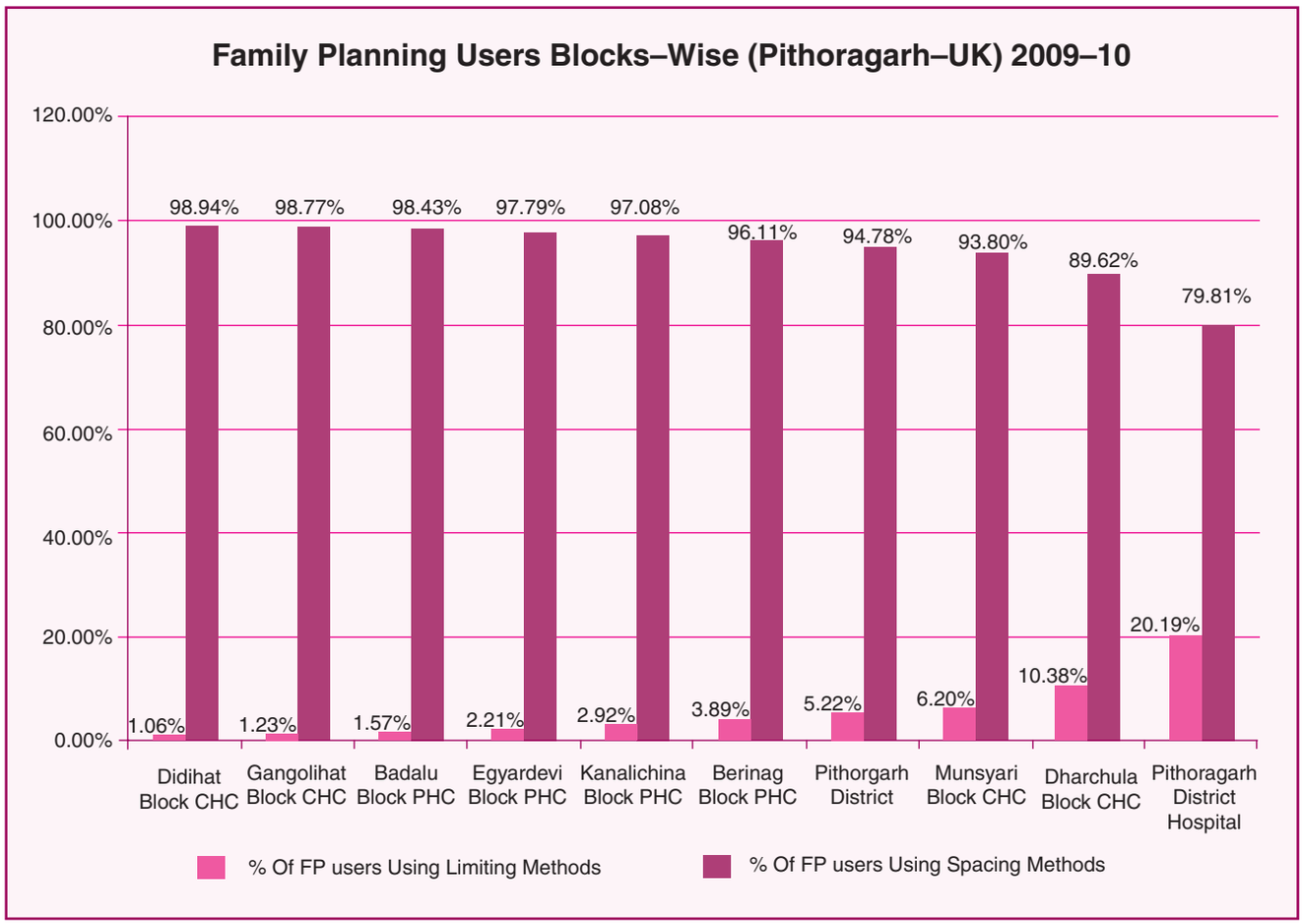
	Immunisation sessions Planned	Immunisation sessions held	Immunisation sessions at-teneded by ASHAs
Ratlam District	11857	11502	8979
Billpank Block	2334	2334	2334
Kharwa Kala Block	2158	2148	1810
Bardiagoyal Block	2144	2025	1392
Sailana Block	1735	1634	1128
Piploda Block	1386	1386	1018
DH Ratlam	1280	1176	928
Bajna Block	820	799	369

Family Planning Services (MP-Dewas) 2009-10

MADHYA PRADESH- DEWAS Dist.-Sterilisations - Apr'09 to Mar'10			**MADHYA PRADESH- DEWAS Dist.-FP Methods - Apr'09 to Mar'10**		
	Reported	%age of Reported Sterilisation		Reported	%age of All Reported FP Methods
Total Sterilisation	8,522	-	Total Reported FP Methodd (All types) Users	52,192	-
NSV	187	2%	Sterilisations	8,522	16%
Laproscopic	5,856	69%	IUD	7,406	14%
MiniLap	1,773	21%	Condom Users	26,361	51%
Post Partum	706	8%	OCP Users	9,903	19%
Male Sterilisation	187	2%	Limiting Methods	8,522	16%
Female Sterilisation	8,335	98%	Spacing Methods	43,670	84%

List of indicators used in Dist. Analysis

- Family Planning
  - Postpartum sterilisation as percentage of total sterilisation
  - Limiting method users as percentage of total family planning users
  - Spacing method users as percentage of total family planning users
  - Sterilisation users as percentage of total family planning users
  - IUD users as percentage of total family planning users
  - Condom users as percentage of total family planning users
  - OCP users as percentage of total family planning users



4. Community Level Interventions

- Functionality of ASHAs(immunisation sessions attended, paid for JSY)
- Effectiveness of ASHAs: BF in first hour, newborn weighing efficiency.
- Health Practices in the community
- JSY payments.

Newborn care status (Mandla-MP) 2009-10

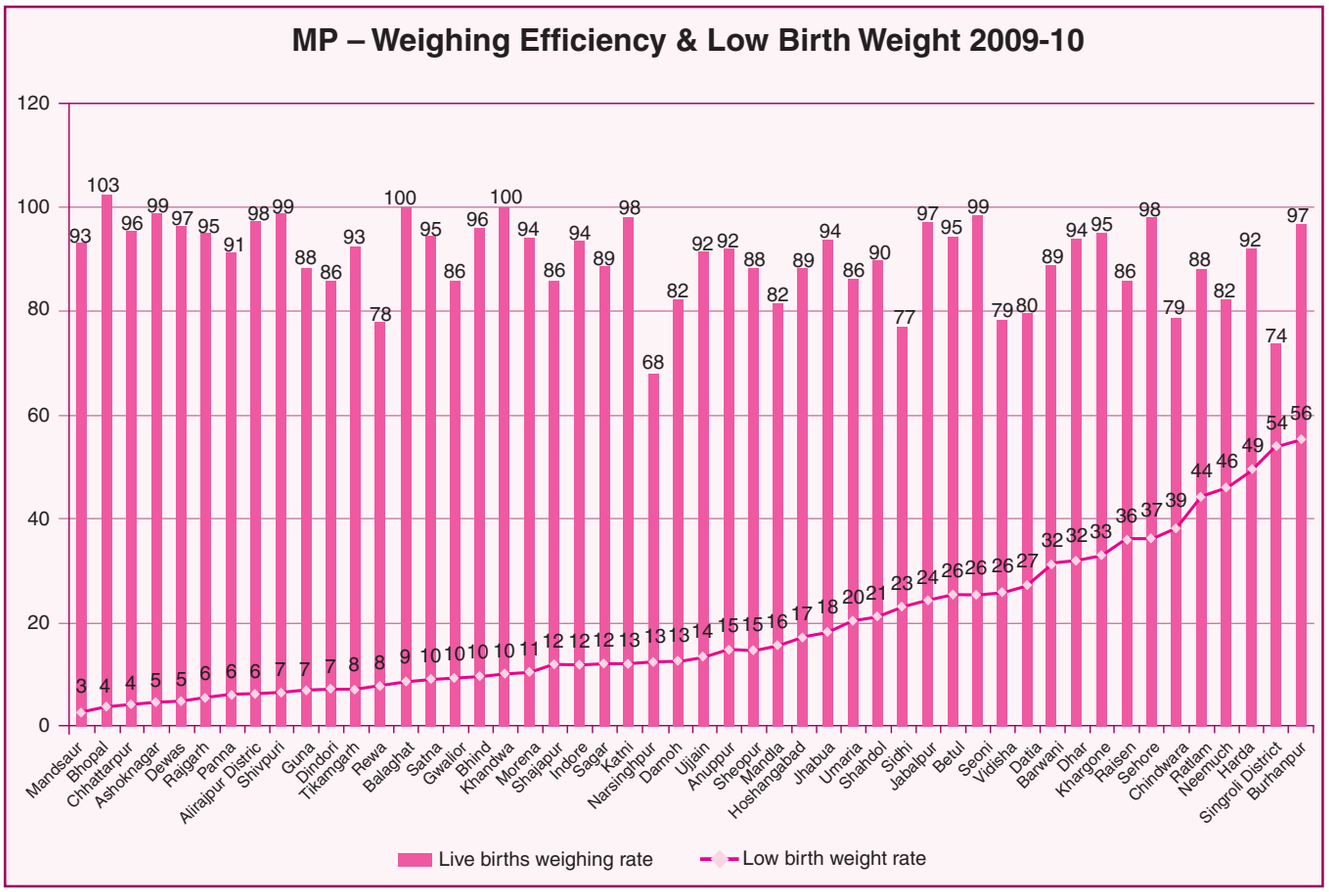
	Live Births	Breastfeeding in first hour	Birth weighed	Percentage of Breastfed in first hour	Percentage of births weighed
Niwas Block	1203	857	810	71%	67%
Nainpur Block	2892	2302	3321	80%	115%
Bichhiya Block	3919	1528	2650	39%	68%
DH Mandla	408	0	408	0%	100%
Bamhani banjer block	3169	2602	2266	82%	72%
Mohgaon Block	1633	1116	1435	68%	88%
Narayanganj Block	1368	1115	1245	82%	91%
Mawai Block	1604	404	713	25%	44%
Ghughari Block	2007	1767	1794	88%	89%
Bijadandi Block	1373	1045	1375	76%	100%

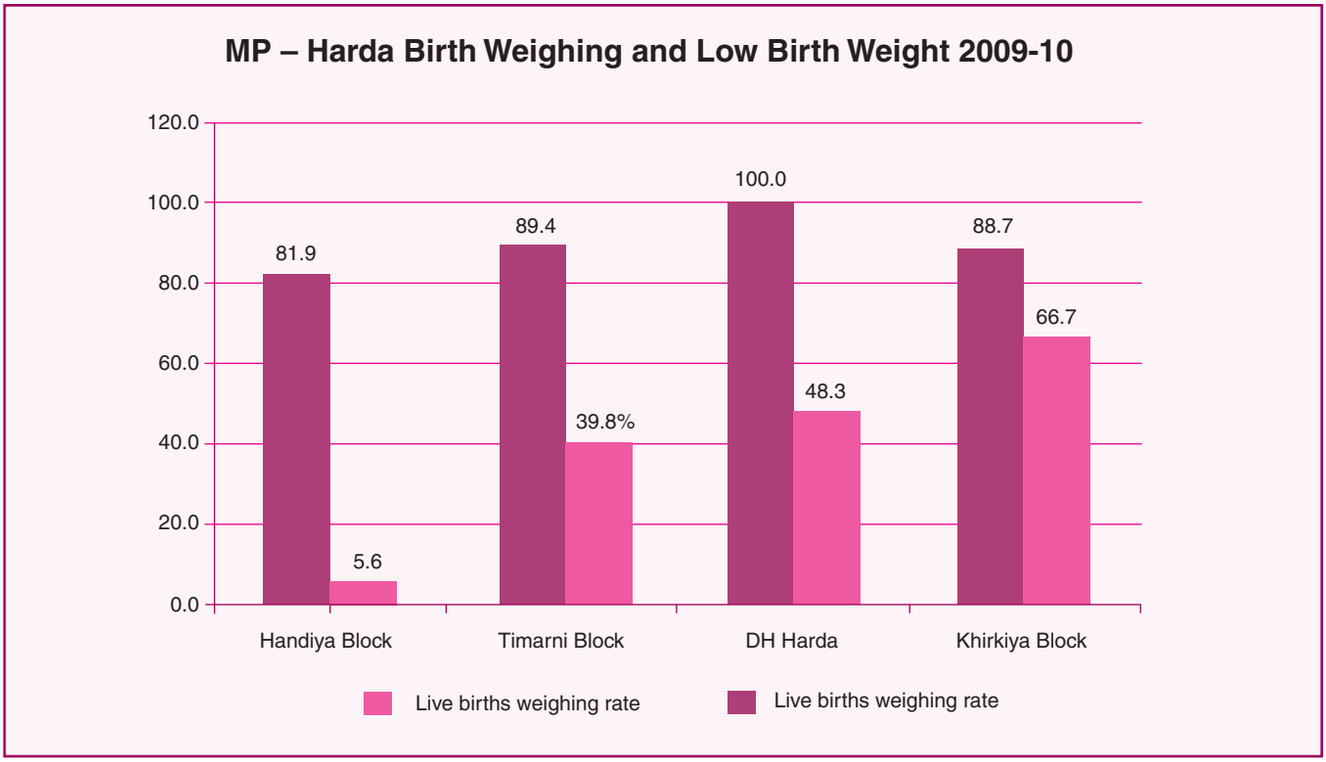
Monitoring ASHA programme

Output indicator	Process Indicator	Data source and frequency
% of Institutional delivery+ % of home SBA delivery	JSY payment to Mother/ To ASHA	HMIS
	proportion of pregnant women who had a birth plan	ASHA divas/ monthly
	proportion of pregnant women who were streamed appropriately for a complication.	ASHA divas- monthly
% of pregnant women who received three ANCs	Immunisation sessions held as % of required/planned	HMIS
	Attending immunisation day	
Quality of ANC-cases of HT detected, anemia detected, severe anemia treated		HMIS

Monitoring ASHA programme

Output Indicator	Process Indicator	Data Source
% Newborns Breastfed in first hour	% of newborns visited by ASHAs- within first hour.	HMIS + AD
% of LBW	% of newborn weighed in the last month	HMIS+ AD
% of newborns referred / admitted as sick	% of newborns who received full complement of visits % of newborns referred as sick. % of ASHAs who made visit to last three newborns in their area.	HMIS+ AD
% of children admitted for ARI % of children severe dehydration in diarrhoea	% of children with diarrhoea who got ORS % of children who got appropriate care for ARI % of children or pregnant women with fever for whom testing was done	HMIS+ AD


MP – Weighing Efficiency & Low Birth Weight 2009-10
120
100
80
60
40
20
0
93 103 96 99 97 95 91 98 99 88 86 93 78 100 95 86 96 100 94 86 94 89 98 68 82 92 92 88 82 89 94 86 90 77 97 95 99 79 80 89 94 95 86 98 79 88 82 92 74 97
3 4 4 5 5 6 6 6 7 7 7 8 8 9 10 10 10 10 11 12 12 12 13 13 13 14 15 15 16 17 18 20 21 23 24 26 26 26 27 32 32 33 36 37 39 44 46 49 54 56
Mandsaur
Bhopal
Chhattarpur
Ashoknagar
Dewas
Raigarh
Panna
Alirajpur Distric
Shivpuri
Guna
Dindori
Tikamgarh
Rewa
Balaghat
Satna
Gwalior
Bhind
Khandwa
Morena
Shajapur
Indore
Sagar
Katni
Narsinghpur
Damoh
Ujjain
Anuppur
Sheopur
Mandla
Hoshangabad
Jhabua
Umaria
Shahdol
Sidhi
Jabalpur
Betul
Seoni
Vidisha
Datia
Barwani
Dhar
Khargone
Raisen
Sehore
Chindwara
Ratlam
Neemuch
Harda
Singroli District
Burhanpur
Live births weighing rate
Low birth weight rate


MP – Harda Birth Weighing and Low Birth Weight 2009-10
120.0
100.0
80.0
60.0
40.0
20.0
0.0
81.9
5.6
89.4
39.8%
100.0
48.3
88.7
66.7
Handiya Block
Timarni Block
DH Harda
Khirkiya Block
Live births weighing rate
Live births weighing rate

List of indicators used in community care analysis

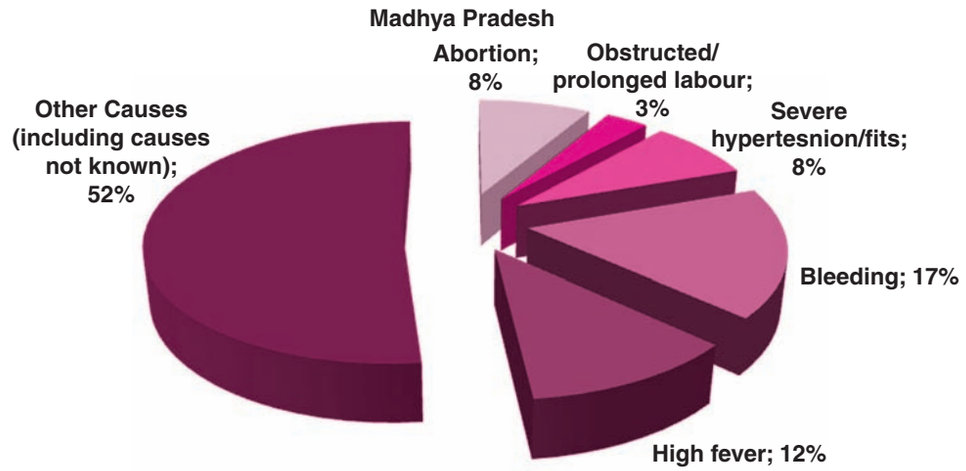
- Births & Neonates Care
  - Live Births Reported against Estimated Live Births
  - New born weighed against Reported Live Births
  - New born weighed less than 2.5 kgs against newborns weighed
  - New born breastfed within one hr of Birth against Reported live Births
  - Sex Ratio at Birth
- JSY
  - JSY incentives paid to mothers as percentage of reported delivery
  - For home delivery
  - For institutional delivery
  - For private institutional delivery

5. Health Outcomes

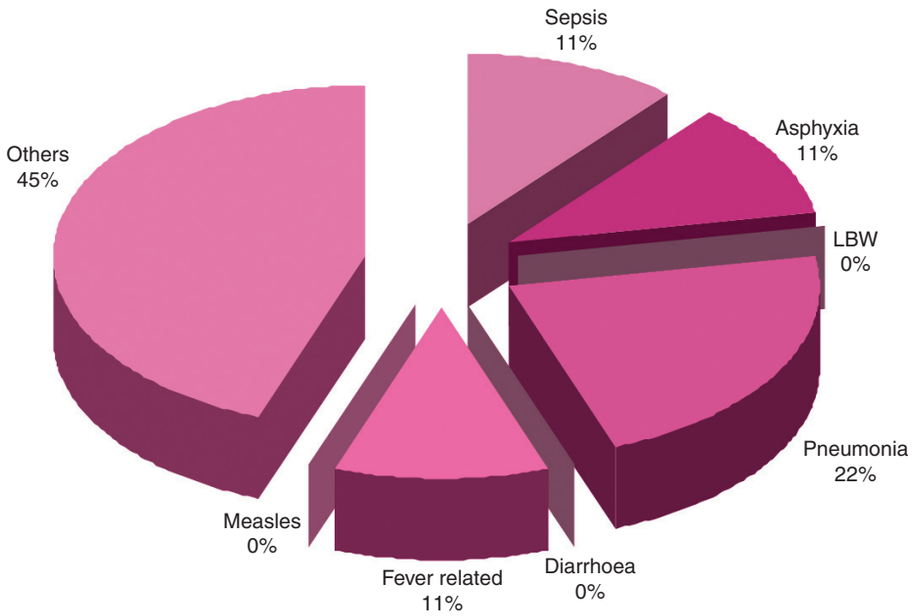
- Maternal Deaths and their causes
- Child deaths and their causes
- Perinatal mortality rate- neonatal mortality rate and still birth rates.
- Low birth weight.
- Deaths in all age groups.

MP – Cause of Maternal Death 2009-10

	Abortion	Obstructed/pro-longed labour	Severe hyper-tesnion/fits	Bleeding	High fever	Other Causes (includ-ing causes not known)
Madhya Pradesh	45	17	42	91	61	274

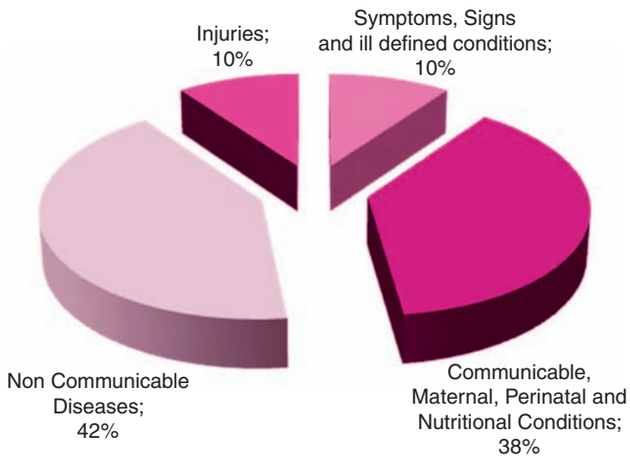


Nagaland-Mokokchung Dist.Causes of Infant & Child Deaths Against Total Reported Causes of Infant & Child Deaths – April 09 to March 10

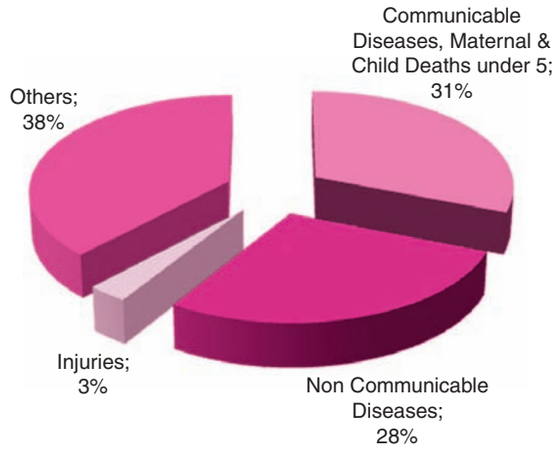


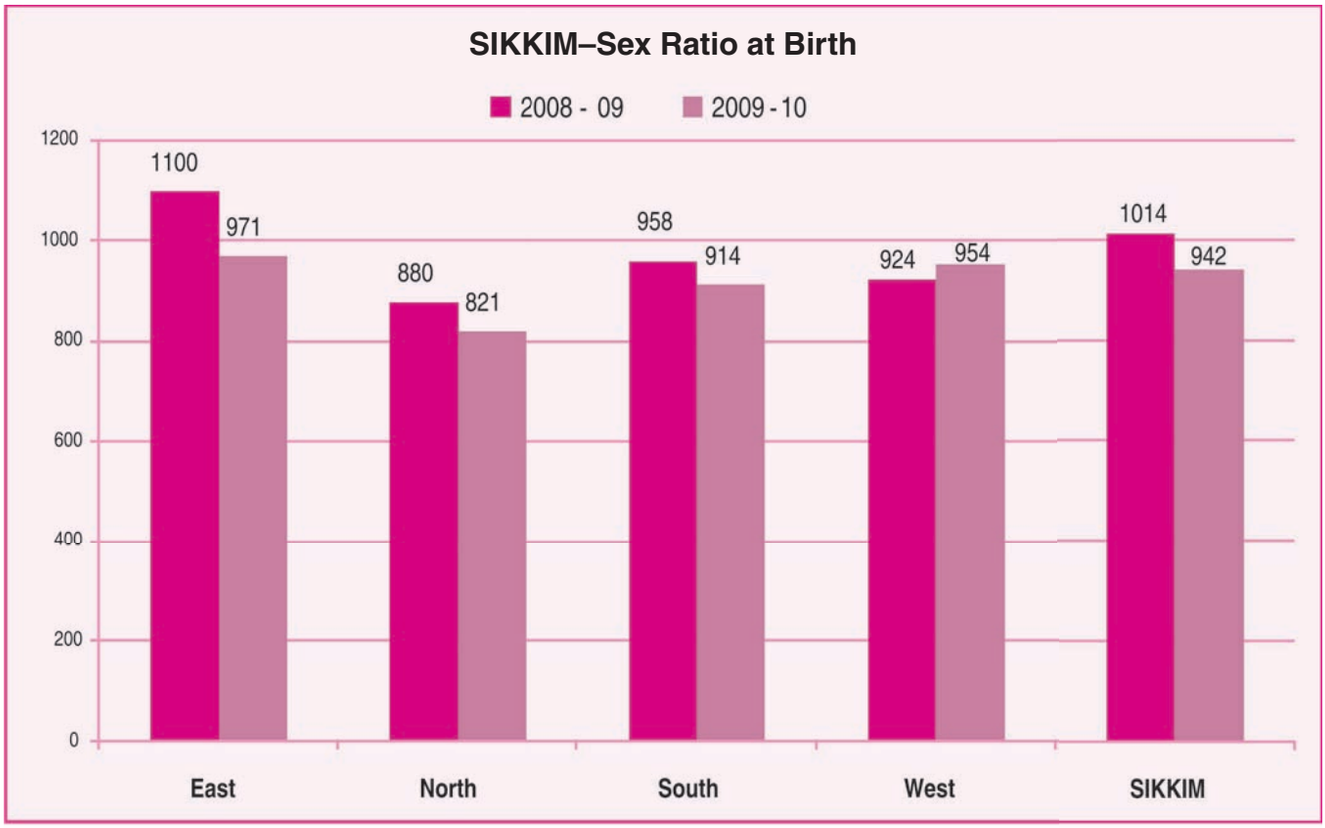
Death Profile - Comparison of HMIS data with RGI

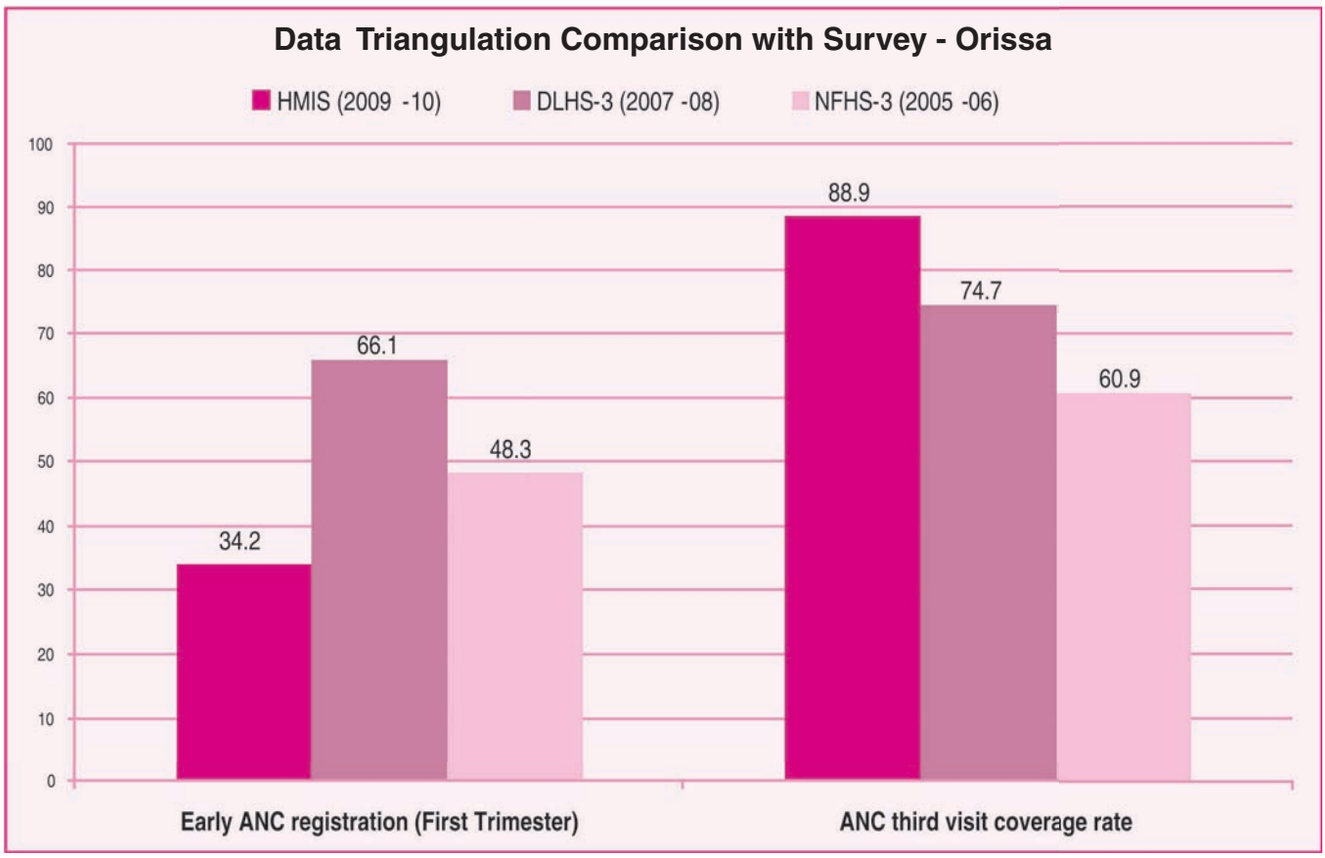
RGI, Causes of Death India 2002-03

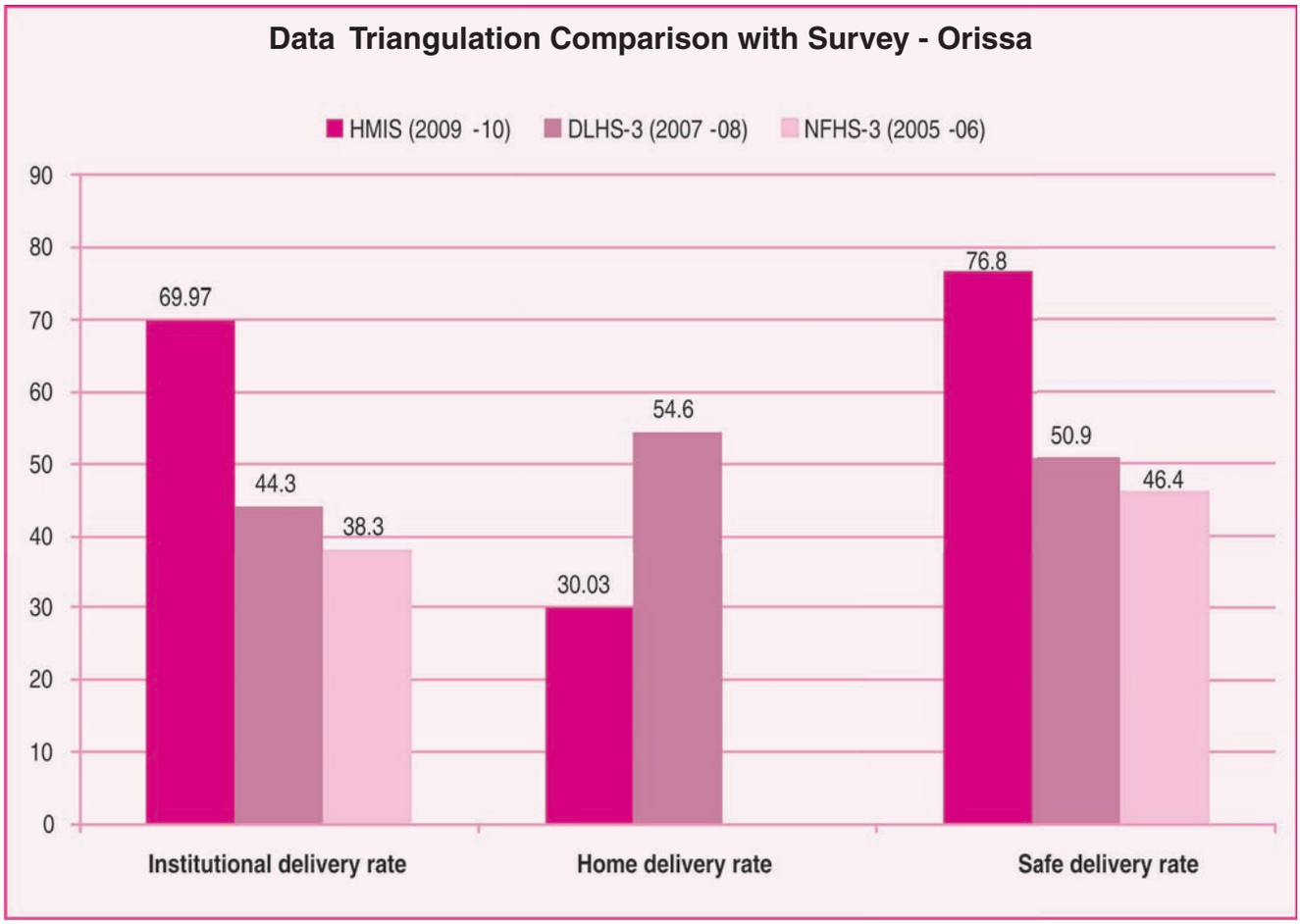


Kerala, Causes of Death (HMIS – April 10 to September 10)




SIKKIM–Sex Ratio at Birth
2008 - 09
2009 - 10
1200
1000
800
600
400
200
0
1100
971
880
821
958
914
924
954
1014
942
East
North
South
West
SIKKIM


Data Triangulation Comparison with Survey - Orissa
HMIS (2009 -10)
DLHS-3 (2007 -08)
NFHS-3 (2005 -06)
100
90
80
70
60
50
40
30
20
10
0
34.2
66.1
48.3
88.9
74.7
60.9
Early ANC registration (First Trimester)
ANC third visit coverage rate



Commissioned Studies

- Cluster Sample Surveys- for immunisation coverage- skill development
- Qualitative Studies- for understanding determinants of poor coverage of services eg home delivery, ANC, PNC etc.
- Qualitative studies for understanding high prevalence of diseases,
- Exit interviews and sample surveys for understanding costs of care.
- Inpatient surveys – for referral transport use.
- Hospital Based Epidemiology – case –control studies for understanding determinants and risk factor relationships to disease

Information from Participatory Processes

- Perception of health problems and priorities.
- Reasons for poor utilisation of services- of ASHA, of outreach services, of facility based services.
- Suggestions on strategies of health care provision.
- Determinants of health behaviour.

National Rural Health Mission
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi