

Summer Training

in



Jaipur, Rajasthan

(1st April to 15th June, 2015)

A Report on

**[Data Quality of Maternal Section under PCTS and
Analysis of Determinants of Maternal Mortality in
four High Priority Districts of Rajasthan]**

By

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Under Guidance of

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MBA Hospital and Health Management

2014-2016



CERTIFICATE

This is to certify that the project work titled **“Data Quality of maternal section under PCTS and Analysis of Determinants of Maternal mortality in four High Priority Districts of Rajasthan”** has been done entirely and submitted by **Dr. Sarang Goel**, student of MBA 1st year in Hospital and Health Management, from IIHMR University, Jaipur.

The study project is his original work and was prepared during the internship period from April 1 to June 15, 2015 at UNICEF, Jaipur.

I wish him all success for future endeavors.



Col (Dr.) Ashok Kaushik

Professor & Dean (Academics & Student Affairs)

IIHMR University



Dr. Neetu Purohit

Associate Professor

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Dated : 30 June 2015 :

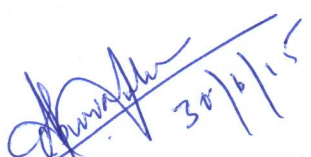
TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Sarang Goel**, student of Institute of Health Management Research University, Jaipur has successfully completed her internship with UNICEF Office for Rajasthan, Jaipur from 1st April to 15th June 2015. During his internship he has managed the data available through Pregnancy & Child Tracking System and prepared reports on the following subjects:

Study of "Data Quality of maternal section under PCTS and Analysis of Determinants of Maternal Mortality in four High Priority Districts of Rajasthan".

He has successfully completed the study assigned to him during the training and his contribution to the study has been sincere, scientific and analytical.

I wish him success in all his future endeavors.


Dr Apurva Chaturvedi
Health Officer
UNICEF, Rajasthan

Institute of Health Management Research, Jaipur

Acknowledgement

I would like to express my heartfelt gratitude to UNICEF for providing me the opportunity to work in such an esteemed organization and for making all the facilities available and giving support in every way for completion of Summer Internship.

I would like to express great indebtedness to Dr. Apurva Chaturvedi and Dr. Anil Aggarwal without whom this training could not have been accomplished. I would like to extend my sincere regards for Dr. Sanjeev Gupta, Mr. Vinod and Mrs. Poonam, who despite other preoccupation and busy schedule, were there to help me on the project.

I attribute this success and thanks to Dr. Ashok Kaushik (Dean), Dr. Neetu Purohit (Associate Professor and Mentor IIHMR) for their constant motivation and valuable guidance.

Thanking you

Dr. Sarang Goel

19th Batch MBA-HM

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List of Acronyms:-

ANC	=	Ante Natal Care
ANM	=	Auxiliary Nurse Midwife
AHSA	=	Accredited Social Health Activist
AWW	=	Anganwadi Worker
AIDS	=	Acquired Immunodeficiency Virus
APH	=	Ante-Partum Haemorrhage
BMO	=	Block Medical Officer
BMI	=	Body Mass Index
BPL	=	Below Poverty Line
CHC	=	Community Health Center
DNA	=	Data Not Available
DLHS	=	District Level Health Survey
Hb	=	Haemoglobin
HIV	=	Human Immunodeficiency Virus
ICMR	=	Indian Council of Medical Research
IFA	=	Iron and Folic Acid
JSY	=	Janani Suraksha Yojana
LHV	=	Lady Health Visitor
MCH	=	Maternal and Child Health
MMR	=	Maternal Mortality Rate

NFHS =	National Family Health Survey
NHM =	National Health Mission
NRHM =	National Rural Health Mission
PCTS =	Pregnancy Child Tracking System
PHC =	Primary Health Centre
PPH =	Post-Partum Haemorrhage
RCH =	Reproductive and Child Health
RTI =	Reproductive Tract Infection
SRS =	Sample Registration System
STI =	Sexually Transmitted Infection
TB =	Tuberculosis
UNICEF =	United Nation Children's Fund
UNFPA =	United Nations Population Fund
WHO =	World Health Organization

Purpose of summer training

Practical exposure is an integral part of post graduate diploma in health and hospital management. As a part of curriculum, I had a privilege to get hands on experience in UNICEF Jaipur where I learnt the functioning of healthcare organization. During my internship I visited UNICEF Jaipur and SHIFW where I observed the functioning of health system and worked in a project under their guidance.

1. To understand functioning of CHC, PHC SC, Aganwadi, DH and Tertiary care Centre and learn various managerial inputs required in an organization.
2. To understand the ongoing activities and my responsibility so as to contribute in the best possible manner to the organization and project given to me.
3. Develop skills in scrutiny of secondary data, operations and its management to analyze different aspects.
4. The above objective required extensive reading and interaction with persons to get knowledge about State health system and its functioning style.
5. Literature review by reading journals, reports and presentations about a given subject and relate them to project for reference purpose.

Executive Summary

Millennium Development Goal- 5 talks about maternal health. Estimate of WHOM, UNICEF and UNFPA for the years 1990, 1995 and 2000 states that more than half a million women die every year from complications related to pregnancy and delivery, of which more than 50% take place in Africa and 40% in Asia. [4] Millennium Development Goal- 5 aims to reduce the worldwide maternal mortality ratio by 75% between 1990 and 2015 which has been attained by Kerala, Tamil Nadu and Maharashtra, but Rajasthan is still fighting the battle with MMR of 244 [6].

Maternal mortality is the death of a woman who dies from pregnancy related causes while pregnant or within 42 days of termination of pregnancy. There are direct and indirect causes of maternal mortality. Direct causes include Ectopic Pregnancy, Eclampsia, Sepsis, Obstructed Labour, Ante partum Hemorrhage, Postpartum Hemorrhage, Abortion complications, Anaesthetic Complications and Embolism. Some indirect causes are Anaemia, Malaria, HIV/AIDS, Heart diseases, Substance abuse, Diabetes etc.

Maternal mortality ratio is the number of women who die from pregnancy related causes while pregnant or within 42 days of termination of pregnancy, per 100,000 live births. India has a MMR of 167 whereas Rajasthan has a MMR of 244 [SRS, 2011-2013] which shows a fall in pattern from previous counts. But this information is not to be cheered as this number still outreaches that of many states in India. [1] Maternal Death Review (MDR) as a strategy has been stated in the RCH – II National Programme Implementation Plan document. It aims to improve the quality of obstetric care and reduce maternal mortality and morbidity.

PCTS (Pregnancy , Child Tracking and Health Services) management system is an online software used as an effective planning and management tool by medical , health and family welfare department , government of Rajasthan implemented since 2008 . The system maintains online data base of more than 13000 government health institution. It provides an integrated system for online tracking of pregnant women and monitoring of institutional delivery.

Definitions

Maternal mortality is the death of a woman who dies from pregnancy related causes while pregnant or within 42 days of termination of pregnancy. There are direct and indirect causes of maternal mortality.

Section-1

ABOUT THE ORGANIZATION

1. UNICEF, Jaipur

The **United Nations Children's Fund (UNICEF)** is a United Nations Program headquartered in New York City that provides long-term humanitarian and developmental assistance to children and mothers in developing countries.

UNICEF is working with a range of government departments in Rajasthan to provide technical support for programmes aimed at improving child survival, growth and development. It is focusing on improving the health and nutrition status of newborns, children, adolescents and women and adequately addressing water, sanitation and hygiene (WASH) issues, particularly by working to eliminate open defecation.

The state office has been fostering collaboration between UNICEF's Education, Child Protection and Policy Planning and Evaluation sections to create a protective and learning environment for boys and girls so that they are able to have equitable access to, and utilize, quality education and protection services.

Adolescent participation is another area where a range of UNICEF sections have come together to bring about change. In this case, the Education, Child Protection, Communication for Development, and Advocacy and Communication sections have jointly come up with initiatives to empower adolescents. Both boys and girls are being supported to make informed decisions that affect their lives, create opportunities to come together in forums and for peer learning, exercise rights and access services, take informed decisions to complete their education, better plan their own futures and take steps to realize their dreams.

In the advocacy sphere, UNICEF has developed advocacy briefs for use by relevant stakeholders and will be implementing programmes for the political leadership in the Rajasthan State Legislative Assembly. It has also conducted public advocacy on critical areas of programming such as sanitation and open defecation-free communities, Routine Immunization and elimination of child labour and child marriage. UNICEF is planning sustained media advocacy on several issues, particularly on Routine Immunization and Child Protection.

UNICEF initiatives include:

As a partner of choice for the Government of Rajasthan, UNICEF is working on a set of models and pilot interventions, particularly in tribal areas in the districts of Udaipur, Dungarpur, Barmer and Baran. The intent is to ensure the survival, growth and development particularly of children belonging to marginalized communities.

Child Survival

- Setting up and scaling up Special Newborn Care Units, with a focus on real time monitoring and quality of services.
- Supporting improvements in the care of women and their babies during childbirth through increasing the quality of services.
- Health system strengthening through supportive supervision and capacity-building.
- Demonstrating a mechanism to improve the quality of services in the most deprived blocks to address the issue of inequity.
- Innovations for real-time monitoring of survival and development outcomes.

Nutrition

- Offering a facility and community-based support and tracking mechanism to improve breastfeeding and complementary feeding. The special Haju Suru (healthy well-nourished child) strategy in the tribal districts of Banswara and Dungarpur promotes family empowerment in feeding through community monitoring and tracking.
- Supporting a high rate of dose for vitamin A supplementation, with two doses every six months.
- Working with the government towards universal salt iodization and tracking access and use of iodized salt at the family level.
- Improving care and treatment for children with severe acute malnutrition (SAM) and providing facility and community-based strategies to help support children with SAM.

Education

- Enhancing learning outcomes of children through transforming the teaching learning process, making it more student-centric, activity-based, learning-focused and equity-oriented.
- Introducing a continuous comprehensive assessment as part of the pedagogy in all schools by 2018. In 2014, 22,000 schools will implement Continuous and Comprehensive Evaluation (CCE) as their assessment system.

- Providing technical support to monitor learning outcomes in real time.
- Offering a school leadership programme to complement the quality improvement initiative in schools.
- Lending technical support to create an enabling environment for early childhood education (ECE); putting in place a curriculum, syllabus and a state policy for ECE and facilitating coordination with the state Education Department for capacity development of Anganwadi workers and their continuous support on ECE.
- Supporting capacity enhancement of School Management Committees.
- Supporting capacity-enhancement of academic institutes, the State Institute for Education, Research and Training (SIERT) and District Institute for Education Training (DIET), to ensure all interventions to improve education standards can be realized.

Child protection

- UNICEF in Rajasthan is working to strengthen systems for Child Protection by ensuring quality education to all children with a special focus on out-of-school, never-enrolled and drop-out children.
- It is building the capacities of and mobilizing families and the community to take collective action to protect their children and help them develop.
- To increase families' adult incomes and prevent child labour, UNICEF is enhancing access to service providers and social protection schemes for vulnerable families and children such as the widow pension, old age pension, Aap ki Beti Yojana, Palanhar and Mukhya Mantri Hunar Vikash Yojana.
- UNICEF is also helping to improve the state policy framework and delivery systems related to Child Protection; improve access to and the quality of social protection schemes and the Integrated Child Protection Scheme (ICPS); and assessing various Acts, policies and programmes related to Child Protection.
- It is strengthening and supporting the capacity of the ICPS to promote and deliver the best services to the most vulnerable children in the state.
- Designing interventions to reduce child marriage, child labour, out-of-school children and corporal punishment in schools.

Water, Sanitation and Hygiene

- UNICEF is building the capacity for the government and communities to eliminate open defecation by supporting the development and implementation of effective behaviour change strategies at the state level.
- Supporting the state to improve the quality of health care in health institutions by improving Water, Sanitation and Hygiene (WASH) facilities and practices through capacity-building of National Rural Health Mission (NRHM) stakeholders.

- Developing monitoring systems and providing access to evidence-based tools and guidelines and promoting key hygiene practices in schools through sustainable, simple and scalable models of WASH.
- Sharing scalable WASH approaches that address priority gaps and bottlenecks in delivering and promoting sanitation facilities and hygiene promotion.
- Supporting rural WASH sector development through improved management information systems (MIS) for WASH access and use, including identification and corrective action for the state's most marginalized areas.
- Creating an enabling environment for improved WASH facilities and practices in health centres through a convergence of Health and WASH programmes in 100 centres in four priority districts.
- Creating an enabling environment to adopt key WASH practices in schools, through innovative technologies and child-centred approaches in the tribal districts of Udaipur and Durgapur.
- Supporting the state's institutionalization of the WASH validation system to monitor WASH outcomes on a regular basis.

Disaster Risk Reduction

- Working with the State Disaster Management Authority to pilot risk-informed planning systems to improve disaster preparedness and response.

Communication for Development

- Developing strategic approaches to communication through the development of evidence-based and theory-driven communication strategies in the areas of the WASH (SHACS strategy), Health (RMNCH+A and RI), Child Protection (addressing social norms on the Prevention of Child Marriage and Child Labour), Education (community mobilization for the promotion of girls' education). These have been developed with the state government and UNICEF frameworks adopted by national flagships and have been customized for rollout across state.
- Building the capacities of frontline service-providers from government flagship programmes so they can effectively engage with families and communities to promote social and behaviour change in relation to key child survival and development issues.
- Using new technologies for Communication for Development (C4D): The potential of technologies such as the internet, digital tools, mobile phones and the like will be harnessed to communicate with families and frontline functionaries in a changing social and cultural context.

Review of Literature:-

Rajasthan is the largest state of Indian sub-continent. It has put in efforts to improve the health status of its population through various health development plans. But the job will not be applauded unless the maternal deaths are prevented. Millennium Development Goal- 5 talks about maternal health. Estimate of WHO, UNICEF and UNFPA for the years 1990, 1995 and 2000 states that more than half a million women die every year from complications related to pregnancy and delivery, of which more than 50% take place in Africa and 40% in Asia. [4] Millennium Development Goal- 5 aims to reduce the worldwide maternal mortality ratio by 75% between 1990 and 2015 which has been attained by Kerala, Tamil Nadu and Maharashtra, but Rajasthan is still fighting the battle with MMR of [6]. The international health community has repeatedly called for action to reduce the large number of preventable deaths and complications from childbearing and governments have formally committed themselves to act in order to achieve this. Just estimating the numbers are not enough, identifying the cause is the real struggle that health professionals should do. About 67% of maternal deaths occur in the states – Bihar and Jharkhand, Orissa, Madhya Pradesh and Chhattisgarh, Rajasthan, Uttar Pradesh and Uttarakhand and in Assam, and thus they are among the 18 high focus states under NRHM. [3]. In spite of the journey made so far, achievement of the Fifth Millennium Development Goal target seems difficult to achieve by 2015.[5]

Maternal mortality is the death of a woman who dies from pregnancy related causes while pregnant or within 42 days of termination of pregnancy. There are direct and indirect causes of maternal mortality. Direct causes include Ectopic Pregnancy, Eclampsia, Sepsis, Obstructed Labour, Ante partum Hemorrhage, Postpartum Hemorrhage, Abortion complications, Anaesthetic Complications and Embolism. Some indirect causes are Anaemia, Malaria, HIV/AIDS, Heart diseases, Substance abuse, Diabetes etc. Maternal mortality ratio is the number of women who die from pregnancy related causes while pregnant or within 42 days of termination of pregnancy, per 100,000 live births. India has a MMR of 210 whereas Rajasthan has a MMR of 255 [SRS, 2010-2012] which shows a fall in pattern from previous counts. But this information is not to be cheered as this number still outreaches that of many states in India. [1]Maternal Death Review (MDR) as a strategy has been stated in the RCH – II National Programme Implementation Plan document. It aims to improve the quality of obstetric care and reduce maternal mortality and morbidity. MDR yields information on various facets at community and facility level that are needed to be emphasized on to reduce maternal deaths. Detailed study on these facets can figure out the delays that lead to maternal deaths at various levels. Government of India has decided to take up Community based maternal death review (CBMDR) and the Facility based maternal death review (FBMDR) which would help in identifying the shortfalls in the present health care delivery systems and plan the interventions to be done accordingly. The

ASHA/AWW/ANM notify all women deaths in the age group of 15 to 49 years from her area telephonically to the BMO within 24 hour. The Block Medical Nodal Officer (BMNO) is the in charge of the Block PHC. The BMNO is responsible for the MD review process at the block level. [2]

Rationale of the Study:-

1. To study & understand the maternal death section under PCTS system.
2. To analyse the database and find out the possible causes of maternal deaths.
3. To determine the quality of data provided.

METHODOLOGY:

1. STUDY SETTING:

Out of the four selected districts two are tribal (Dungarpur and Banswara) and two are desert (Barmer and Jalore). A total of 153 maternal deaths were encountered in these districts during the financial year April 2014 to March 2015.

This paper describes the learnings and challenges from 153 maternal deaths over the period of 1 year (April 2014 to March 2015) in 4 districts of Rajasthan- Banswara, Barmer, Dungarpur and Jalore.

2. REVIEW TOOL & DATA COLLECTION:

Secondary data from social audit of maternal deaths was taken from the Pregnancy and Child Tracking System of Rajasthan.

Data entry for total of 153 maternal deaths were taken 67 from Banswara, 19 from Barmer, 36 from Dungarpur and 31 from Jalore.

3. DATA ANALYSIS:

First the data was checked for completeness and consistency, then after cleaning the data it was analyzed using appropriate statistical methods in Microsoft excel. Out of 153 entries, data for 9 was not found to be complete.

Hence, the study is based on 144 correct entire.

RESULTS:

	Jalore	Barmer	Dungarpur	Banswara	Total	%age
No. of Maternal Deaths.	29	18	35	62	144	
PCTS ID Generated	19	13	8	37	77	53
PCTS ID Not-Generated	10	5	27	25	67	47
Age						
</=20 yrs	0	2	0	0	2	1
20-25 yrs	10	1	6	23	40	28
>25 yrs	9	10	2	15	36	25
DNA	10	5	27	24	66	46
BPL						
Yes	3	5	5	32	45	31
No	16	8	3	6	33	23
DNA	10	5	27	24	66	46
JSY Registration						
Yes	0	0	0	0	0	0
No	18	9	8	38	73	51
DNA	11	9	27	24	71	49
Pregnancy						

Registration						
</=12 weeks	2	2	3	6	13	9
13 to 24 weeks	10	5	2	21	38	26
>24 weeks	4	6	2	8	20	14
DNA	13	5	28	18	64	44
IFA						
Given	15	11	7	26	59	41
Not-Given	14	7	28	36	85	59
Haemoglobin						
</=6gm/dl	0	1	1	0	2	1
6-9gm/dl	11	4	2	22	39	27
>9--11gm/dl	4	6	2	6	18	13
>12gm/dl	1	0	0	0	1	1
DNA	13	7	29	34	83	58
Complications						
Yes	0	0	0	0	0	0
No	16	11	7	29	63	44
DNA	13	7	28	33	81	56
RTI/STI						
Yes	0	0	0	1	1	1
No	14	14	7	35	70	49
DNA	15	4	28	26	73	51

Weight						
</=40 kg	0	2	1	8	11	8
40-50 kg	14	3	3	23	43	30
>50 kg	2	6	2	1	11	8
DNA	13	7	29	30	79	55

Findings:-

a). Registration in PCTS:

Out of the total 144 deaths reported in PCTS from four districts, 46% (n=67) did not have PCTS ID.

[Jalore15% (n=10), Barmer 7.5% (n=5), Dungarpur 40.3% (=27) and Banswara 37.3% (n-25)].

b). AGE GROUP :

Maximum deaths were reported for the age group 20-25 yrs i.e. 27% (n=40) followed by >25 yrs i.e. 25% (n=36) and <20 yrs i.e. 13% (n=22). 45% (n=66) the age was not mentioned in the database.

[Out of 66 missing entries 15.15% (n=10) data was missing from Jalore, 7.5% (n=5) was missing from Barmer, 41 % (n=27) from Dungarpur and 36.3% (n=24) from Banswara].

c). Economic Status :

31% (n=45) patients were below poverty line, 22% (n=33) were not below poverty line and in 47% (n=66) the data was missing.

[Out of 66 missing entries 15.15% (n=10) data was missing from Jalore, 7.5% (n=5) was missing from Barmer, 41 % (n=27) from Dungarpur and 36.3% (n=24) from Banswara].

d). JSY Registration:

51%(n=73) did not have JSY Registration while the data was absent for 49%(n=71)

[Out of 73 deaths that were not registered in JSY 52 %(n=38) were from Banswara followed by 24.6 % (n=18) form Jalore, 12.3 %(n=9) from Barmer, 11% (n=8) from Dungarpur].

e). Registration of Pregnancy:

26 % (n=38) of pregnancies were registered in second trimester followed by 14 %(n=20) in third trimester and 9 %(n=13) in first trimester. Data for 45 %(n=64) was missing.

[Late registration of pregnancy (i.e. in second and third trimester) was maximum for Banswara i.e. 50 %(n=29) followed by Jalore i.e. 24 %(n=14), Barmer i.e. 19 %(n=11) and Dungarpur i.e. 7 %(n=4)].

Missing entries were maximum from Dungarpur i.e. 43.7 %(n=28) followed by Banswara i.e. 28 %(n=18), Jalore i.e. 20.3%(n=13) and Barmer i.e. 7.8%(n=5)

f). Iron and Folic Acid Supplementation:

IFA was given to 41 %(n=59) of patients and was not given to 59 %(n=85).

[44% patients (n=26) received IFA in Banswara which is maximum followed by 25.4 %(n=15) in Jalore, 18.6 %(n=11) in Barmer and 11.8 %(n=7) in Dungarpur.

Moreover 42.3 %(n=36) did not receive IFA in Banswara followed 33 %(n=28). In Dungarpur, 16.4 %(n=14) in Jalore and 8.20 %(n=7) in Barmer.\

g). Haemoglobin Levels:

Out of the total 144 deaths 1% (n= 2) had Hb. <6gm/dl, 27% (n=39) had between 6 to 9

gm/dl, 13% (n=18) had 9-11 gm/dl and less than 1 % (n=1) had more than 12gm/dl. whereas 58% (n=83) had no record of hemoglobin for which the ,maximum was from Banswara 41% and Dungarpur 354

h). Complications:

44 %(n=63) did not have any complications during the pregnancy as per data. Whereas 56 %(n=81), the data was not given.
[Out of 63, 43%(n=29) did not have any complications in Banswara followed by 25.3%(n=16) in Jalore , 17.4%(n=11) in Barmer and 0.1%(n=7) in Dungarpur .

Out of 81, maximum missing entries were from Banswara 40.7 %(n=33) followed by Dungarpur 34.5 %(n=28), Jalore 16.4 %(n=13) and Barmer 8.6 %(n=7).

I). CASES OF RTI / STI:

Out of 144 deaths 48 %(n=70) did not have any RTI/STI for 51 %(n=73) the information was not given and less than 1 %(n=1) Had RTI/STI.
[Out of 73 missing entries 38.3 %(n=28) were from Dungarpur and minimum 5.4 %(n=4) were from Barmer.]

j). Weight During Pregnancy :

Out of 144 deaths 30 %(n=43) had weight between 40-50kg, 8 %(n=11) had weight >50kgs, 8 %(n=11) had weight less than 40 kgs .while the weight of 54 %(n=79) were not recorded.
[Every malnourished cases were from Banswara where 72.7 %(n=8) had weight less than 40 kgs and out of these 8 cases all had their ANC.]

Out of 79, both Dungarpur and Banswara [39 %(n=29) and (n=30) respectively] did not record the weight of the patients.

DISCUSSION:

Out of total 144 deaths 46% did not have PCTS ID which simply states that these women were not tracked before their death. PCTS ID is generated when a pregnant women is enrolled for the first antenatal checkup or when she arrives to the health facility for delivery or after the delivery. Tracking of every pregnancy is important as to prevent deaths due to obstetric cause.

Database shows that maximum mortality is in age group of 20-25 yrs. This is the most common age group period for pregnancy and moreover there are fewer complications in this age group in pregnancy.

JSY is a safe motherhood intervention under NHM. It is being implemented with the objective of reducing maternal and neonatal mortality by promoting institutional delivery among pregnant women. The role of ASHA/ANM/HW is to identify pregnant women as a beneficiary of this scheme and report them or facilitate their registration for ANC. also they must provide or help the women in receiving at least 3 ANC checkups. 51% of women who died were not registered for JSY and the data for 49% was missing.

WHO recommends that pregnant women should seek ANC within first 4 months i.e.12 weeks of pregnancy. Early ANC makes fairly accurate idea about the last menstrual period date and hence expected date of delivery can be calculated. Hence mother can be asked to visit the health facility around that period. This can help in avoiding many complications of pregnancy and related mortality. Registration of pregnancy is primarily the job of the couple but in developing country like India where majority is not acknowledged about ANC checkups, the responsibility rests on ASHA/ANM/AHW to find out pregnancies of their area and help them to register it within 12 weeks of conception. The results show that mortality is maximum 45% for those were pregnancy was not registered and 40% for those which were registered after first trimester.

There is 8 to 10 fold increase in MMR when Hb. fall below 5mg/dl. Early detection and effective management of anaemia in pregnancy can contribute substationally to reduction in maternal mortality. NFHS 2 and 3, DLHS 2, ICMR micronutrient survey showed that over 70% of pregnant female are anaemic. The major cause of anaemia is iron and foliate deficiency. For this purpose supplementation is provided when women approaches for antenatal checkup but the results show that it was not received by 59% female who died.

This again raises a question on the quality of antenatal checkups they are being provided. 28% of the deaths had haemoglobin recorded below 9 gm/dl. As already known PPH is the most common cause of potential maternal death. Hence, haemoglobin levels are indicators of potential PPH that can be prevented by supplements during ANC. the probable cause of deaths in our study could be low levels of haemoglobin because of not receiving Iron and Folic- Acid supplementation.

A woman dies from complication in childbirth every minute about 529000 each year, the vast majority of them in developing countries. Mostly the maternal deaths occur due to complications during pregnancy or labour. An interesting pattern in the results reveals that 44% cases did not have any complications and in 56% cases this category has not been entered. Even if the complications might have been there it has not been recorded in the database. This leaves us in a dilemma that all 100% cases did not mention any complication and still the maternal death was there.

Low body weight and BMI at conception or delivery is associated with maternal delivery complications and higher risk of infections during pregnancy. These can lead to indirect causes of maternal mortality. Results shows that 8% had weight less than 40 kgs and 30% had weight between 40 kgs to 50 kgs. On observing the data it was also found that all severely malnourished cases in Banswara (n=8) had antenatal checkups. It is required of health professional to counsel and guide the patients during ANC checkups about weight gain and nutrition. Unfortunately it seems that it has not been followed sincerely by both of them.

As far as the quality of data is concerned, the records have many categories that were not filled in the system. to view them grossly , all the missing entries of the data from 4 districts were summed up and it was found that 502 columns were not entered in the following Age of the patient, economic status, JSY Registration date of pregnancy haemoglobin level, RTI/STI cases and weight of the patient. 38.8 % of (n=194) missing entries were from Dungarpur followed by 35.8 %(n=180) from Banswara, 16.9 %(n=85) from Jalore and 8.3 %(n=42) from Barmer.

The quality of data has to be improved not only for this study purpose but also this affects the results and at times might lead us to put effort in wrong direction on the basis of missing values. If those were recorded could have led to more accurate results and interventions could have been more specific and fruitful.

LIMITATIONS:

Although the information was given on a single operating system but being a secondary data

it was a bit difficult to be analyzed or comment upon. Moreover, not all determinants were given for analysis.

CONCLUSION:

This study of data of 144 maternal deaths has clearly shown that we are still struggling in the battle of late registration of pregnancy, non-institutional deliveries, anaemia, malnutrition etc. to achieve the MDG we need to address these issues timely PCTS, in itself is one of the best software generated to assess the health indicators and aid in planning of interventions. Hence the quality of data is very essential in achieving the same.

Recommendations:

1. Systematic collection of data and review of maternal deaths should be there in order to know the real cause of death.
2. Early registration of pregnancy shall be encouraged.
3. Education for the benefits of institutional deliveries to all.
4. ANC facilities can be made available to remote areas as well, for this purpose monthly ANC camps can be conducted and the people should be well informed beforehand about the date and time.
5. ASHA & ANM should help in early registration of pregnancy and encourage ANC visits during pregnancy; moreover a regular vigilance over their productivity should be there.
6. Well-equipped ambulatory services for referred cases should be there.
7. Timely decision making for referrals to higher centers.
8. Training for handling emergency obstetric services to all health professionals at all levels of healthcare.

References:

1. Sample registration survey (SRS) 2011-2013, India
2. Maternal Death Reviews – guidelines and tools for Health professionals by FIGO (International Federation of Gynecology and Obstetrics), August 2013
3. NRHM, Department of Health & Family Welfare, Government of Punjab (July 2010) – guidelines for rolling out
4. World Health Organization. Reproductive Health Indicators: Guidelines for Their

Generation and Analysis for Global Monitoring. World Health Organization: WHO Press, 20 Avenue Appia, 2011, Geneva 27, Switzerland, 2006.

5. Rai RK, Tulchinsky TH. Addressing the Sluggish Progress in Reducing Maternal Mortality in India. Asia Pac J Public Health. 2012.
6. Ross L, Simkhada P, Smith WC. Evaluating Effectiveness of Complex Interventions Aimed at Reducing Maternal Mortality in Developing Countries. J Public Health (Oxf). 2005; 27(4):3317

Learnings from summer training:-

1. UNICEF, Rajasthan: - How they plan quality research, collect data to understand issues, implement innovative interventions.
2. SHIFW: - Learn about how they provide technical support in different plans and projects.
3. PCTS: - How does the system work what all aspects are considered and designed for data entry.

Annexure

ANC Format

विवरण				
यूनिट कोड व नाम 01010600406 Harpura				
गाँव का नाम Kasana				
महिला का I.D. No. 010106004060293				
महिला का नाम Mamta				
पति का नाम Sunil Regar				
जॉच की तारीख	I	II	III	IV
09-09-2010				
आखिरी माहवारी की तारीख 15-06-2010				
TT1 या बूस्टर की तारीख		TT2 की तारीख		
.....				
IFA देने की तारीख				
Hb स्तर				
जटिलता हो तो विवरण दें				
RTI/STI रोग से ग्रसित ? ☐ हाँ ☐ नहीं				

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ANC Format

चौथी जॉच	
यूनिट कोड व नाम 01010600406 Harpura	
गाँव का नाम Kasana	
महिला का I.D. No. 010106004060293	
महिला का नाम Mamta	
पति का नाम Sunil Regar	
जॉच की तारीख	
वजन (किलोग्राम)	
जटिलता(सही विकल्प पर टिक करें) ☐ हाईपरटेंसिव ☐ डाईबेटिक्स ☐ ए पी एच ☐ मलेरिया ☐ अन्य ☐ कोई नहीं	
RTI/STI रोग से ग्रसित ? ☐ हाँ ☐ नहीं	
हस्ताक्षर	

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ANC Format

तीसरी जॉच	
यूनिट कोड व नाम 01010600406 Harpura	
गाँव का नाम Kasana	
महिला का I.D. No. 010106004060293	
महिला का नाम Mamta	
पति का नाम Sunil Regar	
जॉच की तारीख	
वजन (किलोग्राम)	
जटिलता(सही विकल्प पर टिक करें) ☐ हाईपरटेंसिव ☐ डाईबेटिक्स ☐ ए पी एच ☐ मलेरिया ☐ अन्य ☐ कोई नहीं	
RTI/STI रोग से ग्रसित ? ☐ हाँ ☐ नहीं	
हस्ताक्षर	

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Maternal Death Cases

Report Taken At 07/05/2015 11:50:34 AM

Location : **Banswara**

Period : **April 2014 to March 2015**

नाम PCTS आईडी	मोबाइल नंबर	प्रसव		मातृ मृत्यु की दिनांक	मातृ मृत्यु का कारण
		स्थान	दिनांक		
Ghatol		प्राथमिक स्वास्थ्य केन्द्र : Devda			उप स्वास्थ्य केन्द्र : Odwadia
wadia					
<u>URMILA W/O MANGILAL</u> <u>0504010031299275</u>		District Hospital Banswara	28/12/2014	17/01/2015	अन्य कारण
Ghatol		प्राथमिक स्वास्थ्य केन्द्र : Khamera			
amera					
<u>KIRATI W/O DIPESH</u> <u>0504010050099489</u>			15/07/2014	21/07/2014	अन्य कारण
Ghatol		प्राथमिक स्वास्थ्य केन्द्र : Khamera			उप स्वास्थ्य केन्द्र : Rohania Maneng
Rohania Maneng					
<u>SURATA W/O PRAKASH</u> <u>0504010050499666</u>				05/02/2015	अन्य कारण
Ghatol		प्राथमिक स्वास्थ्य केन्द्र : Khamera			उप स्वास्थ्य केन्द्र : Bhagoro ka kheda
Bhagoro ka kheda					
<u>REENA W/O DEVILAL</u> <u>0504010050499375</u>			27/08/2012	27/02/2015	अन्य कारण
Ghatol		प्राथमिक स्वास्थ्य केन्द्र : Jegpura			
ther]					
<u>kanta</u>				25/12/2014	अन्य कारण

Dated : 30 June 2015 :

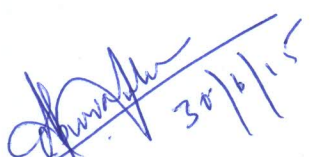
TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Sarang Goel**, student of Institute of Health Management Research University, Jaipur has successfully completed her internship with UNICEF Office for Rajasthan, Jaipur from 1st April to 15th June 2015. During his internship he has managed the data available through Pregnancy & Child Tracking System and prepared reports on the following subjects:

Study of "Data Quality of maternal section under PCTS and Analysis of Determinants of Maternal Mortality in four High Priority Districts of Rajasthan".

He has successfully completed the study assigned to him during the training and his contribution to the study has been sincere, scientific and analytical.

I wish him success in all his future endeavors.


Dr Apurva Chaturvedi
Health Officer
UNICEF, Rajasthan