Summer Training at
Child Rights and You (CRY),
New Delhi
(April - June, 2013)

AN EVALUATION STUDY ON INFANT AND MATERNAL DEATH AUDITS IN HARYANA

By
Bhavna Nahata

Under the guidance of
Dr. Tanju Saxena

Post Graduate Diploma in Hospital and Health Management
2012-2014

Institute of Health Management Research,
Jaipur
2013

INSTITUTE OF HEALTH MANAGEMENT RESEARCH
1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : http://www.iihmr.org
Gram : HEALTHINST

CERTIFICATE

This is to certify that, Bhavna Nahata, student of Post Graduate Diploma in Health and Hospital Management (PGDHM), from the Institute of Health Management and Research (IIHMR), Jaipur has undergone summer training in Child Rights and You (CRY), New Delhi from April 8 to June 7, 2013.

The project undertaken by her was:

Process Documentation of "An Evaluation Study on Infant and Maternal Death Audits in Haryana."

The candidate has successfully carried out the aforementioned project during the summer training and her approach to the project has been sincere, scientific and analytical.

I wish her success in all her future endeavors.

Ms. Tanjul Saxena
Faculty and Mentor
IIHMR, Jaipur

Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
IIHMR, Jaipur

CHILD RIGHTS AND YOU

Ensuring lasting change for children

08th June 2013

TO WHOEVER IT MAY CONCERN

This is to certify that Ms. Bhavna Nahata, student of Post Graduate Diploma in Health care Management, Institute of Health Management Research, Jaipur, has successfully completed two months of internship i.e. 8th April- 8th June 2013 under the guidance of Mr. Nabhojit Dey, Manager for Research. During the course of internship she worked in following areas:

- Process documentation of **"An Evaluation Study on Infant and Maternal Death Audits in Haryana"**
- Interaction with the external and internal stakeholders of the aforementioned study to understand the project thoroughly.
- Data Entry and Analysis of Kurukshetra district under the sample districts of the aforementioned study.
- Represented CRY as volunteer in a special talk show on NDTV, where the speakers like Bill Gates and Aamir Khan had an interactive discussion with the audience on topics like maternal and child health.

We hope that the experience has helped sharpen her overall understanding on child rights and she will be able to perform well in any similar future assignments and remain an advocate of child rights.

We trust she will continue to keep in touch with CRY and work towards the building of a Child Rights movement.

We wish her all the Best!

Ditto Joy
Asst. Manager

CRY - Child Rights and You, 632, 2nd floor, Lane No. 3, Westend Marg, Saiyad-ul-Ajaib, New Delhi - 110 030.
Tel - 91-11-30174700 Fax - 91-11-30174777 Email:cryinfo.del@crymail.org **www.cry.org**
Registration No. Public Trust Reg.No.F-5208 (Mumbai)

ACKNOWLEDGEMENT

Any accomplishment requires the effort of many people and this work is no different. It has been my proud privilege to work with Child Rights and You (CRY), New Delhi.

I take this opportunity to express my profound gratitude and deep regards to Mr. Ditto Joy (Asst. Manager) for giving me an opportunity to work with the organization. I also express my profound gratitude and deep regards to my mentor Mr. Nabhojit Dey for his exemplary guidance, monitoring and constant encouragement throughout the course of this project. He inspired me greatly to work in this project and his willingness to motivate me contributed tremendously to my project. This project gave me an opportunity to learn about the various aspects of process documentation.

I am obliged to staff members of CRY for the valuable information provided by them in their respective fields. I am grateful for their cooperation during the period of my assignment.

I am deeply grateful to Dr. S.D Gupta (Director IHMR) and Dr.(Col.)Ashok Kaushik (Dean, Academic and students affairs) and specially my mentor Dr. Tanjul Saxena (Asst. Professor) for her guidance and timely monitoring my work, because of which I am able to perform my task so well.

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Abbreviations

ANM	Auxillary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Aanganwadi Worker
CSS	Cacading Style Sheets
HSHRC	Haryana State Health Resource Centre
HTML	Hyper Text Markup Language
IMR	Infant Mortality Rate
LHV	Lady Health Visitor
MMR	Maternal Mortality Ratio
MO	Medical Officer
MoA	Memorandum of Association
MoU	Memorandum of Understanding
MYSQL	My Structured Query language
NFHS	National Family Health Survey
NGO	Non Government Organization
NRHM	National Rural Health Mssion

BRIEF PROFILE OF THE ORGANIZATION

The Beginning

In 1979, Rippan Kapur, a young purser with India's national airline Air India, and 7 of his friends contributed Rs.7/- each to register an organisation in Mumbai, India in response to the unjust situation of children in the country. Thus, CRY was born, with just Rs. 50/- (just little more than 1$ at today's exchange rates), a dining table for an office, and most importantly, a dream for India‟s children. Rippan was an ordinary person, with an extraordinary dream – that no Indian child would be deprived of rights as basic as an education, a healthy life, a nurturing environment or the right to participate in decisions affecting one's life.

CRY – The Catalyst

CRY decided from inception to play the role of a catalyst or a facilitating entity by providing people/organisations that have resources, avenues for participation to bring about change for children and link them with several nascent grassroots initiatives who are working towards bringing about that change. Through this approach, CRY has been able to achieve greater outreach and the ability to enable hundreds of individuals/organisations to influence much larger change than they would have ordinarily been capable of. CRY has nurtured these initiatives over a number of years to build the sustainability of the interventions by investing in both the people and the organisation.

CRY's Vision

A happy, healthy and creative child whose rights are protected and honoured in a society that is built on respect for dignity, justice and equity for all.

CRY's mission is: *"To enable people to take **responsibility** for the situation of the deprived Indian child, and so motivate them to confront the situation through **collective action** thereby giving the child and themselves an opportunity to **realize their full potential**."*

CRY Today

In more than three decades of its existence CRY has grown from 7 individuals, Rs.50 and one man's vision to becoming the premier child rights organisation in India. Over this period CRY has been directly instrumental in changing the lives of over 2 million of India's most

underprivileged children with the active participation of over 300 grassroots level child development initiatives and 200,000 individuals and organisations.

ORGANIZATIONAL STRUCTURE

People are the core of this foundation. Be it the trustees who are the guardians of CRY's ethos, or the members of its Managing Committee (MANCOM) who steer the organisation to its designated goals, or the employees and volunteers who use their commitment, time and skills to enable CRY's work or our NGO partners, people who make extraordinary change possible through their work. Accomplishing the milestones CRY has achieved in last three decades has been possible due to the organisation's ability to continually attract, retain and develop a cadre of talented, committed professionals who come from all walks of life and backgrounds. Chartered accountants, post-graduates in Social Work, communications professionals, bankers, HR specialists, salespeople, MBA from every ethnic, linguistic, religious and ideological persuasion. This diversity, coupled with an unrelenting commitment to building a culture of openness, transparency, accountability and democracy within the organisation is what makes CRY.

CRY is governed by a leadership structure made up of two bodies, a Board of Trustees, and the Management Committee headed by the CEO. In principle, members of the Board serve in their individual capacity, and not as representatives of any organisation or institution, to ensure complete independence in policy making. The key role of the management committee is to provide direction and leadership to the organisation, evolve and implement strategy, create relevant organisational policy and efficiently run operations.

Process Documentation

of

An Evaluation Study on Infant and Maternal Death Audits in Haryana

INTERNSHIP OBJECTIVES

- **General:**

- To attain complete in depth understanding of the aforesaid study, with a practical exposure to the research process involved in planning, conducting, analysing, documenting and reporting the project.
- To determine and analyze the reasons behind Infant and Maternal deaths in the state of Haryana and contribute my findings in CRY's project for making appropriate recommendations to the state government to reduce the cases of IMR and MMR.

- **Specific:**

- To understand the infant and maternal death audit system and its importance.
- Understand the need of evaluation and the complete process adopted by CRY for the same.
- Identify the key stakeholders of the research.
- Interactions with the stakeholders to get insight about their needs.
- Qualitative data analysis and interpretation of the data to draw a final conclusion for the research.
- Understand the process related to process documentation of the aforementioned study and give a valuable input in the formation of same.
- Writing of a report and research paper on the study.

PROJECT STAGES

1. **Initial**
    - Preparation of Plan of action:
    - Review of secondary data
2. **Intermediate**
    - Identification of the internal and external stakeholders
    - Preparation of Prompts/ Questionnaire

- Interaction with the stakeholders to collect primary data

3. **Final**

- Compilation of primary and secondary data
- Report writing
- Editing
- Approval from stakeholders

REVIEW OF SECONDARY DATA

– MoU between CRY and HSHRC
– MoA with Resource person
– Technical proposal
– Minutes of the meetings
– Background of Verbal Autopsies
– Inception Report

STAKEHOLDERS

INTERNAL (CRY)	EXTERNAL
Director	Executive Director, HSHRC
Director-Policy & Research	Sr. Consultant M&E , HSHRC
Program Head, Development Support	
AGM, Finance	
Senior Manager, Volunteer Action	
Manager, Research	
Senior Manager, Development Support	
Manager, Development Support	
Resource person	

Table 1 Stakeholders

SAMPLE QUESTIONS FOR STAKEHOLDERS:

- How did the entire idea of third party evaluation evolve.
- How was the study designed.
- Stakeholders role during the different phases of process i.e. Conceptualization, Planning, Implementation, Revision, Monitoring etc.

BACKGROUND

The two major health indicators of a country are infant mortality rate and maternal mortality rate; they indicate the strength of a country in maintaining the health status of the two most vulnerable groups of population. In this respect India has appalling rate of infant and maternal deaths, according to the stats (Source: Association of Health care Providers India, AHPI) three lakhs children die on the day they are born and India takes 29 percent of infants that die within 24 hours of birth in the world. Every ten minutes a lady dies following child birth and 20 percent of the maternal deaths in the world happen in India. The health machineries in India are working on various plans and policies to reduce infant mortality and improve the maternal health care. However, despite of the efforts, the infant and maternal deaths continues to be high in many of the states.

In the state of Haryana, as per NFHS-3 data, the infant mortality rate is as high as 42 deaths per 1000 live births and as far as maternal mortality is concerned, as per NFHS-3 data, Haryana has a maternal mortality rate of 153 per 1,00,000 live births. Although it is lower than national average of 212 per 1, 00,000 live births still it is higher at its present rate.

In order to reduce infant and maternal deaths in the state it is important to ascertain the actual causes of deaths. One of the leading reasons behind a large proportion of maternal and infant deaths is poorly managed deliveries and many such deaths can be avoided if suitable care can be given. Infant and maternal death audit is one of the important strategies to improve the quality of child and maternal care and reduce infant and maternal mortality. Since audits are the standard method of establishing infant and maternal deaths, it is pertinent to strengthen the analysis process in the state as much as possible. Analysis of these deaths not only inform about the medical causes of death, but also identify the gaps in health service delivery and other social factors including the delays at various levels that can contribute to infant deaths.

The Haryana state NRHM has established State Health Resource Centre to take care of all the technical issues and therefore it is responsible to carry out the audit process in the state. Presently, this data is summarized and presented to the National Rural Health Mission (NRHM).

However, it is necessary to confirm the authenticity and effectiveness of a process and one of the ways to strengthen it is to constantly improve upon the process through regular monitoring and evaluation. Therefore, monitoring of the process is undertaken by HSHRC

however evaluation of the process had not taken place and been decided to get done independently. Since evaluation process was to be external and undertaken by an independent organization to provide objective and unbiased findings, Child Rights and You (CRY) came into the picture, it has been working on issues of children for more than 30 years. HSHRC decided to collaborate with CRY wherein based upon a Memorandum of Understanding between the two entities CRY played the role of an independent evaluator of the audit process in Haryana

RATIONALE:

Evaluation Study

Since Haryana has a high IMR and MMR there was a need to analyze the causes for both through verbal autopsies at the village level which form a part of infant and maternal death audit. In order to improve the quality of data collected it was pertinent to conduct an evaluation of the present process of data collection through verbal autopsies, identify gaps and take up measures to remove those gaps.

Process Documentation

Earlier, CRY was not involved in such kind of evaluation study, and it was a new learning experience for it. Also it provided a great opportunity to engage with government of Haryana, and work on the issues related to infant and maternal health.

This document was required to get a clear idea about the whole process involved during the study. The drawn information can be used to replicate and scale up similar kind of evaluation study at different levels. It would help in briefly depicting the plan of action and related measures requires to be followed for evaluating and identifying the gaps and in intervening the possible solutions to bridge the gaps at community and health service level. Consequently, it will also help in optimizing the resources and time. Therefore, the document can be considered as an amalgamation of all the details of the steps involved during the entire process and the learning acquired at various stages.

OBJECTVE

Evaluation Study

The overall objective of the study was to identify gaps in the present audit process in the State and provide suggestive actions to plug those gaps. Further, the specific objectives of the evaluation study were:

1. To assess the present process of Infant and Maternal Death audit in Haryana by undertaking independent verbal autopsies, observations of verbal autopsies and interview with various stake holders in sample districts
2. To compare findings of independent verbal autopsies and observation with existing data on reviewed maternal and infant deaths in sample districts
3. To identify gaps/problems in the audit process of Infant and Maternal Deaths and recommend corrective measures
4. To assess the current practice of use of related data in planning/review process at different level and recommend possible corrective actions.

Process Document

The general objective behind documenting the process is to concisely capture and share the critical study concepts, plans and information as they are developed, so that impacted parties can share this information, make informed decisions, and scale up the study at different levels.

The basic aim of process documentation is to learn from implementation experience and in the light of this modify the strategy and ultimately, policy of the study.

SCOPE OF THE STUDY

- Orientation of various key stakeholders on the process of evaluation of infant and maternal death in the State
- Translation of verbal autopsy format for infant death from English to Hindi
- Identify supervisors and data enumerators and train them for undertaking verbal autopsies of reviewed cases of infant and maternal deaths in the aforementioned districts

- Conduct verbal autopsies of 5% reviewed infant deaths and all reviewed maternal death cases (based upon reviewed data provided by HSHRC for the year 2012) in 4 sample districts namely, Gurgaon, Hisar, Karnal and Kurukshetra which represent the regions of the State
- Observe actual verbal autopsy being conducted by the health functionaries identify gaps, if any, in the process of conducting verbal autopsies
- Conducting interviews with district level health officials to identify possible areas of improvement in the audit process
- Analysis of data which includes comparison of verbal autopsy/reviewed cases data provided by State health administration
- Based upon findings of the evaluation propose mechanism for quality assurance in data collection and for generation of regular quality reports on infant and maternal deaths in the State
- Provide recommendations to strengthen the audit process in the State.

PROCESS PHASES: To understand the occurrence of all the events, the entire process was divided into different phases:

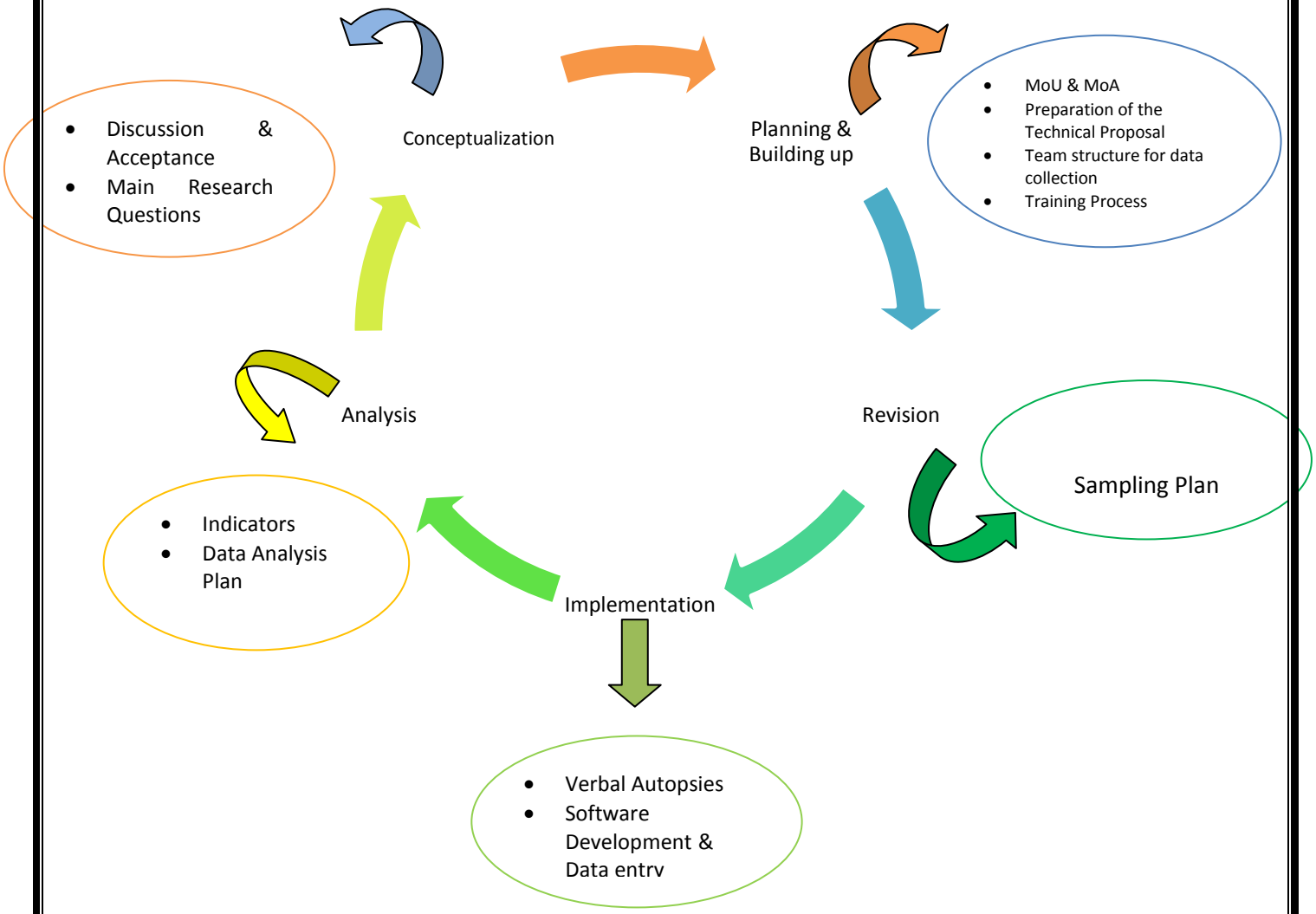

Fig.1. Process Cycle

➢ CONCEPTUALIZATION

Audit is a newly adopted system in India and requires strengthening by constantly improving upon the process through regular monitoring and evaluation of the process. Monitoring of the process is undertaken by HSHRC however it is a new organization to carry out independent evaluation and not doing any collection of data or analysis at present. Therefore, HSHRC suggested to Government of Haryana that in order to make an independent evaluation of maternal and infant deaths it wants to involve a third party.

Third party evaluation is a concept that involves an external body to conduct the evaluation study and to find out the gaps in the system. The HSHRC team preferred third party evaluation because it also assures exemption of any kind of bias during the study process. By this technique together HSHRC and the evaluator can analyze the data which the field formation is collecting on monthly basis in all the districts and supposed to take corrective actions. The major advantages of this kind of PPP (Public-Private Partnership) model are:

1. It would be an independent analysis of cause of Infant & Maternal Deaths.
1. It would give feedback on the authenticity of the entire process and suggest improvement in the process

Presently, the two major challenges in our country are reduction in infant and maternal mortality rates for achieving the set targets, and many actions are taken by the health machinery to achieve it

The HSHRC, the NRHM and the field formation are the three major entities forming a holistic system involved to work for it. Audit/Review of maternal and infant deaths is one of the measures taken by the system to improve the quality of health care compare the care given with an agreed standard.

Verbal autopsy is a research method that helps to determine probable causes of death in cases where there was no medical record or formal medical attention given. It offers a solution to the challenge of generating cause of death information and asks about signs and symptoms of the deceased person, risk factors and health care sought prior to death, clarifies social, economic, behavioural, and health system issues that may have contributed to death. The contextual knowledge obtained from this process is invaluable to health care managers, planners, communities, researchers, and policy & decision makers.

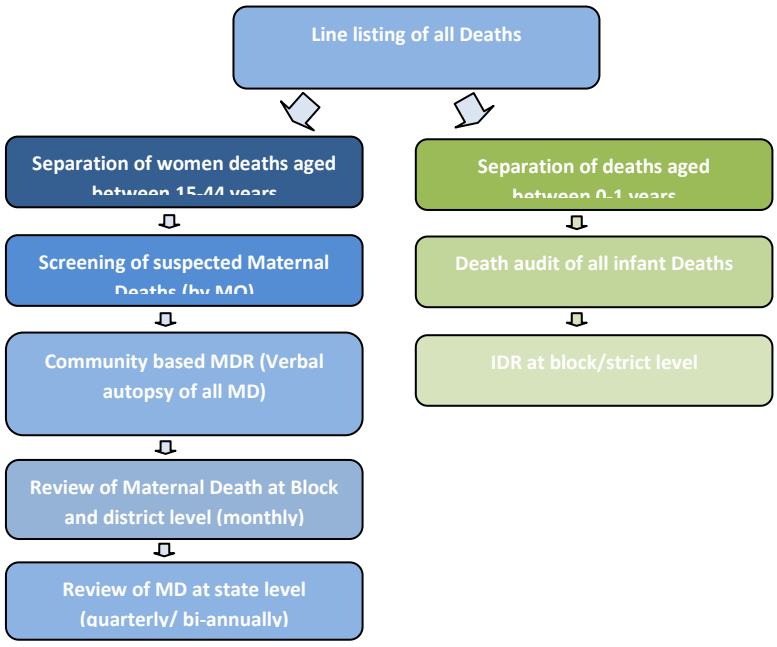

Fig.2. Audit Process

DISCUSSION & ACCEPTANCE

The HSHRC executive director, proposed the idea of third party evaluation to CRY's Development Support function. The idea was further discussed during a meeting at CRY, New Delhi office with him. All the possible variables and related issues were mooted to get a clear picture about the study concept and the role of CRY and HSHRC in the process.

Ideally, tenders issuance technique is followed by the government authorities to identify the best possible organization or body that can efficiently conduct the study. However the HSHRC did not want to follow long time consuming method and therefore finalized CRY's name for conducting the study and optimized the resources.

CRY accepted the proposal because it was a great opportunity to collaborate with the government body and gain a deeper understanding of their working techniques. Also it was the first time CRY was collaborating with a government body on health issues. It was a breakthrough to provide advocacy to Haryana government and getting into policy level details. Since the organization had never undertaken such a study earlier so it thought to be an opportunity to learn and use the experience in future. The study results and outcomes can be used in determining the probability of replicating the process in other states as well. Therefore, CRY itself principally agreed to fund this study.

CRY AS A THIRD PARTY EVALUATOR

CRY, a reputed organization working on child issues came into the picture as a possible third party evaluator because it has been working on various issues related to infant and maternal healthcare from last 30 years and has in depth knowledge about the ground level realities. It is not only capable of determining the gaps in the system but also in providing required interventions to bridge the gaps.

Earlier, CRY had done voluntary work for the Haryana government, in 2009, the state government approached CRY to prepare a draft related to Indra Bal Poshan Mission and CRY did it successfully. Currently, CRY has its programmatic presence in Haryana and working on a project Naidunia, in Panipat district among dalit children. During the course of conceptualization and finalization of the evaluation study, CRY has also been included as a member of high level task force in the state of Haryana to monitor trends of malnutrition, infant and maternal mortality, anemia and other issues related to health.

MAIN RESEARCH QUESTIONS

As such the main research questions in this assignment was whether the reported cause of death to HSHRC through government health functionaries is the exact cause of death. The various sub questions were:

1. What is the exact cause of infant and/maternal death?

2. Are there variations in the reported data and the data collected through an independent third party?

3. Are there any gaps in the present verbal autopsy process carried out through government health functionaries and what are the ways in which these gaps, if any, can be plugged?

4. What are the present systems of data inputting and data analysis and if the same can be improved for better analysis and report generation?

- **PLANNING & BUILDING UP PHASE**

Planning of any process requires synergism of all the participatory personnel and authorities, the inputs received from all the departments and individuals are responsible for building up an efficient work plan. The HSHRC and CRY jointly conducted the study and decided their responsibilities according to the need of the study.

- *Responsibilities undertaken by HSHRC:*

  They provided all the required documents, forms and data as necessary and required for undertaking the evaluation process.

- HSHRC conducted an orientation workshop on 5th April 2013 in Panchkula, Haryana at the initiation of the evaluation for multiple stakeholders involved in the study to bring clarity in the entire process of the study as well as bring the expectations from the district health administration. Stakeholders who attended the meeting were:
  a. Deputy civil surgeon, NRHM (Kurukshetra, Karnal, Hisar, Gurgaon)
  b. Deputy civil surgeon, Immunization (Kurukshetra, Karnal, Hisar, Gurgaon)
  c. Deputy Director, Maternal Health, MO and Consultant
  d. Deputy Director, Child Health, MO and Consultant

e. CRY's stakeholders

The agenda of the workshop was to throw light on following domains:

- Presentation on introduction and rationale of the evaluation
- Presentation on procedure and methodology to be adopted in the evaluation
- Discussion on ongoing process of audit in each district

It was required that all the stake holders have a common understanding of the evaluation process. This exercise ensured that there is greater ownership as well as involvement in the process.

Arranged the lodging facility for the data enumerators and supervisors during the data collection process, and provided infrastructure and equipment support to CRY team.

- Training to all the data enumerators and supervisors was given in IIPH, Delhi and the Senior Consultants of M&E, contributed in the process from HSHRC.

Preparation of Memorandum of Understanding

A Memorandum of Understanding was prepared to ascertain a bilateral agreement between HSHRC and CRY included all the clauses related to the purpose and agreements between both the parties. Also it included the work that is to be done and who would be undertaking the responsibilities for a particular work. It was forwarded to the Head office of CRY, Mumbai to get a legal opinion about the terms and agreements. After 2-3 rounds of questions and doubts clarification, the MoU was finalized and approved by both the parties. However, later another clause was added in the MoU, i.e. due credits should be given to CRY as "Study conducted by CRY" in all publications of the study or any part of the study by HSHRC.

Preparation of Memorandum of Association

An agreement was signed between CRY and the CRY resource person/public health expert for undertaking the evaluation study process. It included all the responsibilities that the resource person would undertake and complete within the time frame of the study. The agreement covered the scope of work, timeline of the study, payment and expenses related information, conditions of copyright, patent and other proprietary rights and confidentiality of the information and data.

Preparation of the Technical Proposal

To start the study a draft technical proposal was prepared by the Research Manager. The proposal was prepared keeping in mind the concept of establishment of a technical cell, which was supposed to assist HSHRC for conducting verbal autopsies and monthly evaluation of the process involve in the audit. However, the misconception got clear after a meeting with the Executive Director of HSHRC, he clarified that it is not practical to establish a cell and they only want to evaluate the ongoing audit process. Then, the proposal was prepared in a manner desired by the HSHRC and included the study plan with following study tools:

Research tool	**Respondent**	**Explanation**
Observation Checklist	Govt. District Audit Team conducting verbal autopsy at the community level (MO, ANM, ASHA,LHV)	The observation checklist was used to identify the present process of data collection undertaken by medical officer at the block level, primary care givers or community level health functionaries through verbal autopsies. Few such observations were made to understand the actual process of verbal autopsy.
Verbal Autopsy Format	Family Members	Enumerators independently carried out verbal autopsies through standardized formats including but not limited to the indicators on which data was already collected (Confidentiality clause was included in the verbal autopsy format and verbal autopsies were undertaken if the respondent permitted for the same)
Structured Questionnaire	Secondary health functionary	Separate data collection formats were prepared for health service providers to understand their perspectives on infant and maternal death audit process

Table 2 Tools for data collection

The draft research proposal after performing the aforementioned changes was forwarded to the technical expert to include the financial budget in it. Further the technical proposal with the budget plan was forwarded to finance department of CRY for approval, simultaneously CRY followed its routine Regional Committee meeting process to discuss all the possible challenges and opportunities involved in the study project, to get suggestions and clarify the doubts of all the RC members. After completing this regular exercise of sanctioning the evaluation study project got approved.

Since, this study was not budgeted in the yearly budget plan, therefore the money had to be disbursed from the undisbursed funds of CRY and it got sanctioned under Development and Support function. The proposal was finalized except the sample plan for the evaluation.

TEAM STRUCTURE FOR DATA COLLECTION:

Composition & Qualifications

Research Head: Public Health Expert lead the entire team of data enumerators

Supervisor – 2 supervisors were in charge for data collection teams of 4 districts. The supervisor was post-graduate in social work, development studies or public health with at least 1 year of experience in related field.

Data Enumerator- For each of the districts there were 6 teams of data enumerators comprising 2 enumerators in each team. Therefore in total 12 enumerators were involved in conducting verbal autopsies.

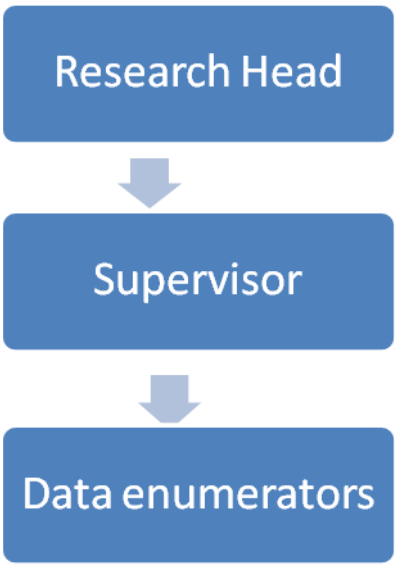

Fig.3 Team Structure

Roles & Responsibilities:

Position	Roles and Responsibilities
Expert	• Detect possible errors in diagnosis, treatment, judgment or technique. • To check the statement of prognosis & results (discharge or death) • Analyze the verbal autopsy reports sent by the ANMs against medical reports from health institutions • Identify exact causes of infant and maternal death and validate the same • Suggest corrective measures for quality improvement in verbal autopsies • Provide evidence to NRHM for decision making on program interventions
Data Entry Operator	• Generate district-wise tables on infant and maternal death cause indicators
	• Develop database for all incoming verbal autopsy reports from the field • Provide sample for data enumeration from the field • Enter verbal autopsy data on infant and maternal mortality on customized software on a regular basis • Compile back-checking data • Match evaluation findings with original reports • Prepare district-wise fact sheets based on original data
Supervisor	• Connecting link between the audit cell and data enumerators • Management of data enumerators • Collect data from supervision districts and forward to audit cell • Collect medical data from district level health institutions in infant and maternal death
Data Enumerator	• Undertake verbal autopsies as part of evaluation or triangulation process based upon agreed sample • Trace cases at the village level with the help of village health functionaries (ANM/ASHA)

Table 3. Roles & Responsibilities

TRAINING PROCESS

Based upon the timeline for data collection of one month 6 teams of 2 enumerators each was constituted. 3 teams of 6 enumerators were led by a supervisor. Further, each team of data enumerators consisted of a medical professional and researcher. The data collection team went through a must required 3 days long training process, to make them thoroughly aware about the study, sample plan, data collection method, verbal autopsies and other related details. Training was held in the Indian Institute of Public Health, Gurgaon. All the data enumerators were trained on the use of verbal autopsy formats. The training included discussion on each of the indicators on which data was to be collected. Further, role plays were conducted among the enumerators to give them a feel of the various situations under which they had to conduct verbal autopsies. On the second day of training the resource persons from HSHRC, visited the training venue. They assessed the enumerators, ran through the verbal autopsy format with the enumerators and also explained them the entire process of verbal autopsy. The third day of training was planned to be dedicated to field practice, but the plan did not work out due to the short notice and the arrangements could not be made. Therefore, the team did the mapping and listing of the infant and verbal autopsy cases on map and prepared field plans for reaching to the households where the cases had taken place.

- **REVISION PHASE**

SAMPLE DESIGN: Initially, the research proposal included 5 districts(Faridabad, Hissar, Palwal, Kaithal and Bhiwani) based on the statistics with highest number of infant and maternal deaths However, on consulting the HSHRC they recommended to modify the sample design because all the districts chosen were bordered line, and the sample would not have been homogenous in that case. Finally, a district from each of the regions with highest maternal and infant death reviews was selected(Hisar, Karnal , Gurgaon and Kurukshetra).This ensured geographical representation as well as numerical representation. In case of infant deaths each district undergone 5% random back checking and all the maternal deaths in the aforesaid 4 districts covered under the evaluation study. The selection of the samples in a particular district was based on population proportionate to size (PPS) method to remove any biasness in selection of sample from a particular district.

District	**Maternal Death**	**Infant Death**
Kurukshetra	8	18
Karnal	25	14
Hisar	18	50
Gurgaon	15	16
Total	**66**	**98**

Table 4. Sample size

And as per suggested by the health expert more current review cases in both the categories were taken up on a random basis for reducing the recall bias. The sample size for conducting verbal autopsies was finalized as all the reviewed cases of maternal death (since maternal death cases are less in number) and 5% of all the reviewed infant death cases in the selected districts

- **IMPLEMENTATION PHASE**

Verbal Autopsies

Based upon the field plans the verbal autopsies had to be conducted at the household level. For preparation of field plans the maternal and infant death verbal autopsy formats and list respectively was used. The reviewed maternal death verbal autopsy formats for Gurgaon and Hisar were scanned and provided to the external resource person whereas list of reviewed infant deaths for the aforementioned districts were provided to the external resource person. It was further decided during meeting with HSHRC as well as during training that in the other

two districts the teams would receive reviewed maternal and infant death formats directly for the district health administration. HSHRC had taken the responsibility of coordinating with district health administration for arranging transport and accommodation for the data enumeration team. Further, apart from conducting verbal autopsies observation of actual verbal autopsies conducted by health functionaries would be undertaken to identify any gaps in the process of conducting verbal autopsy itself. In addition, interview with district health officials would be conducted which would provide insight into the process of audit in the State as well as their inputs to strengthen the process.

Problems faced: Addresses were not accurate, faced problem in finding the exact address, some of the families in which the deaths had occurred had migrated to other districts and states and their whereabouts could not be ascertained

Reason: Handwriting error, error in database provided to the enumerators. In 4-5 cases the village level health functionary was not aware of the addresses

General factors identified behind maternal and infant deaths

- Iron deficiency
- Incompliance to iron supplements as it turns the stool black in color hence, they think that the baby will be dark complexioned: SUPERSTITIONS
- Work burden: Even during the 8^{th}-9^{th} months of pregnancy the lady works in field. NO AWARENESS
- In rich families also cases were identified, in spite of access to every possible facility death occurred
- Carelessness at Sub centers and PHC's: cases of drop of child from nurse hand, careless attitude in handling the child
- Staffs are target bound at PHC's
- Non-availability of doctors in night.
- Transportation: distance to medical health facility is long (more PHC's should be established), not aware of the 108 emergency ambulance service.
- Facilities are good at district level but PHC's are in bad condition, non availability of equipments, staff.

Date Entry

In order to make sense of the collected data, it must be analyzed, but working with original data can be very cumbersome. For this reason data are often coded and then enteredon software for data analysis, where it gets compiled up at one place.

Software Development:

CRY approached one of its volunteer to undertake the responsibility of creating appropriate software for data entry that would be exclusively used to enter data. Initially, the development approach was to have offline based software that will rule out internet dependence. However during implementation the creation took place on online based program. CRY volunteer with the help of his friends planned to have HTML 5 pages, with CSS 3 (Cascading Style sheet, used to control the style and layout of web pages) to design the data entry online form. Also to use java script to get the database entries in tables, from HTML page to table in MYSQL and directly export it to excel sheet. However, the final forms for data entry were developed on Google docs. This was regarded to be simpler than to create offline data entry application using Java, .NET or any other software. It was also suggested by the volunteer that since google docs provides the facility to convert the Google database into an excel database it was easier to work on the same than on a relational database. Further, it was decided that post-coding of the indicators the data in the excel sheet would be accordingly coded using software such as Python for purpose of analysis on any statistical software.

Data Analysis

Indicators: For data analysis certain indicators were identified to compare the primary and secondary data. Indicators are enlisted below:

IDR:

a. District
b. Block
c. Village
d. PHC
e. Sub-centre
f. Name of the respondent

g. Caste
h. BPL Card
i. During the illness that leads to the death, did you seek care outside the home for the infant?
j. Did ASHA/AWW/VHN/ANM advice on hospital treatment?
k. What was the condition of the infant at the time when it was decided for medical consultation?
l. First Health Facility: Specify in which hospital you took the baby first and then where was the baby taken thereafter? (Name, type of the institution/hospital/health centre)
m. First Health Facility: Specify the problem/complication with which baby was taken to this facility
n. First Health Facility: Total time taken from the onset of the problem to reach this facility
o. First Health Facility: Whether the referral institution had facilities to treat the complication
p. First Health Facility: Mode of transport from one institution to other (Govt./Private) and distance in Kms.
q. First Health Facility: Time taken to initiate treatment in the institution on reaching the hospital
r. Do you know the danger signs when a new born or infant should be taken to health facility
s. Do you know about the government hospitals where newborns/infants can be admitted and treated?
t. Can you tell us regarding the total amount that you had to spend on your child?
u. How did you (the family) arrange this money?
v. Deceased Sex
w. Age of the deceased
x. Place of death
y. Where was s/he born?
z. What did the respondent think the newborn died of?
aa. Mother's age
bb. Was the child single of multiple birth?
cc. Who attended the delivery?

dd. When was s/he first breast fed?

ee. Was this the first child?

MDR:

a. Name of the District
b. Name of the Block
c. Name of the PHC
d. Name of the Sub-centre
e. Name of the Village
f. Name of pregnant woman/mother's name
g. Name of husband/others (Father/Mother)
h. Possible cause of death
i. Type of death
j. Place of death
k. Which were the institutions where the woman was taken before death
l. Reasons for referral
m. Religion
n. Community
o. BPL
p. Place of delivery
q. Who conducted the delivery- if at home or in institution (Not applicable for transit delivery)
r. Type of delivery
s. Where
t. Mode of transit
u. Total expenditure
v. Source of expenditure
w. Total duration of transit

- **ANALYSIS PLAN**

Data on maternal and infant deaths was collected from the four districts of Haryana chosen by methods explained in the inception report. The four chosen districts from the four regions of Haryana were: Kurukshetra (North), Karnal (East), Hisar (West) and Gurgaon (South). All analysis of data on maternal and infant deaths will essentially involve three components: 1. Assessing the actual cause of deaths; 2. Shortcomings in healthcare delivery that might have led to the deaths; and 3. Comparing our data with the data obtained from reviews by the health system of Haryana.

The analysis of data of maternal and infant deaths will be done in different ways to accommodate the differences in various factors related to such deaths. All analysis will also be done district-wise to tease out the differences in each districts (or regions) with respect to various factors related to maternal and infant deaths.

Data on maternal deaths was collected from all the four districts. Based on the data the following analysis is proposed for maternal death audit.

Comparison of Data from Maternal and Infant Death Audits with Data Obtained from State Health Department

Data which CRY have collected on maternal and infant deaths was planned to compare with the data on the same individuals collected by the state health department. All data would be compared for completeness and accuracy. Any lack of data or inaccurate data would be noted and subsequently summarized to provide an overall picture of the quality of data collected by the state health department.

In addition, the processes of collecting data in each district would be reviewed especially in case of high discrepancies between their data and the data collected by the state. Based on these further recommendations would be made regarding ways to improve data collection by the state.

LEEARNING:

- About the Audit Process in Haryana.
- Concept of third party evaluation/PPP

- Importance of Process Document
- Preparation of prompts for interaction
- Insight about the variables related to process document.
- Writing a process document.

CONCLUSION

- ❖ Process Documentation in the context of health research and evaluation studies is about finding and documenting the occurrence of events related to study and any deviations in the study plan and factors behind the deviations.
- ❖ Ideally, it should be done in an ongoing manner to cover all the variables related to process.

REFERENCES

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- Maternal Death Review Guide Book
- Operational Guidelines on Infant Death at Community and Facility Level
- Validity of verbal autopsy for ascertaining the causes of stillbirth, Arun K Aggarwal [a], Vanita Jain [b] & Rajesh Kumar [a]
- A report on Maternal and Perinatal Death Inquiry and Response by UNICEF
- Perinatal death audit, Manandhar DS1 1Head, Department of Paediatrics, Kathmandu Medical College, Sinamangal

ANNEXURE 1

Topic and Action Plan

Name of Intern: BHAVNA NAHATA

College/ Institute: Institute of Health Management Research, Jaipur

Period of internship: 2 months

Topic: Evaluation study of Infant and Maternal death audit in Haryana

Aim/ Objectives of the study: To learn the various activities involved in process documentation of the aforesaid study.

S.No.	Specific Goals	Activities/ Tasks	Timeframe	Remarks
1.	Understanding the assignment	Review of study material	2-3days	Completed
2.	Identification of the stakeholders	Identify and meet the stakeholders	1 month	Completed
3.	Interactions with the stakeholders	Interactions with the help of questionnaires		Completed
4.	Qualitative data analysis	Analysis & interpretations	15 days	Completed
5.	Analysis of process	Qualitative analysis	1 week	Completed
6.	Recommendations	Report writing		Completed

General Guidelines/ ethical reminders:

- Confidentiality of the data.

- Data use in the external world with the approval of supervisor in CRY

- Final report/ paper based on report, if gives out in public domain should provide due credit to CRY.

ANNEXURE 2

QUESTIONNAIRE/PROMPT

Name of the Respondent:

Designation :

1. Why you preferred third party evaluation over inter system assessment (for external SH only)

2. What was your role/ How were you involved during the planning of the study?

3. What was your feedback on the research proposal? and which points did you suggest for revising the proposal?

4. Were you involved in the process of resources generation, allocation, budgeting or in any other related domain by any way? If yes, then how?

5. What was your role during the training process planning and implementation for the data collectors and supervisors?

6. Which method according to you would be the most appropriate for analyzing the collected data?

7. Who could be the possible external stakeholders for the study?(for internal SH only)

8. What are your expectations from the project and the final result?

9. Do you think the process document of this study could help in conducting such studies in other EAG states also? If yes, then how?

10. Any other suggestions, if any.