IFMR LEAD

LEVERAGING EVIDENCE FOR ACCESS AND DEVELOPMENT

A Study of Kerala's Healthcare Quality Standards to Reduce Infant and Maternal Mortality

7th October, 2015: New Delhi

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Background in Brief – MMR Standards

- Developed in partnership with
  - NICE International
  - Kerala Federation of Obstetricians and Gynecologists (KFOG)
- 10 Quality Standards (QS)
  - Reduce Maternal Deaths associated with
    - Post-partum Hemorrhage (PPH)
    - Pregnancy Induced Hypertension (PIH)
- Training for Labor and Delivery Ward staff
    - Active management of third and fourth stage labor
    - QS flow charts
    - Supplemental assistance for implementation

Background in Brief – IMR Standards

- Developed in partnership with
  - ACCESS Health International
- 12 Quality Standards (QS)
  - Reduce Infant Deaths
    - Respiratory disorders, preterm birth, hypoglycaemia, hypothermia, sepsis
  - Training for Labor and Delivery Ward staff
    - Antenatal and post-delivery care
    - QS flow charts
    - Supplemental assistance for implementation

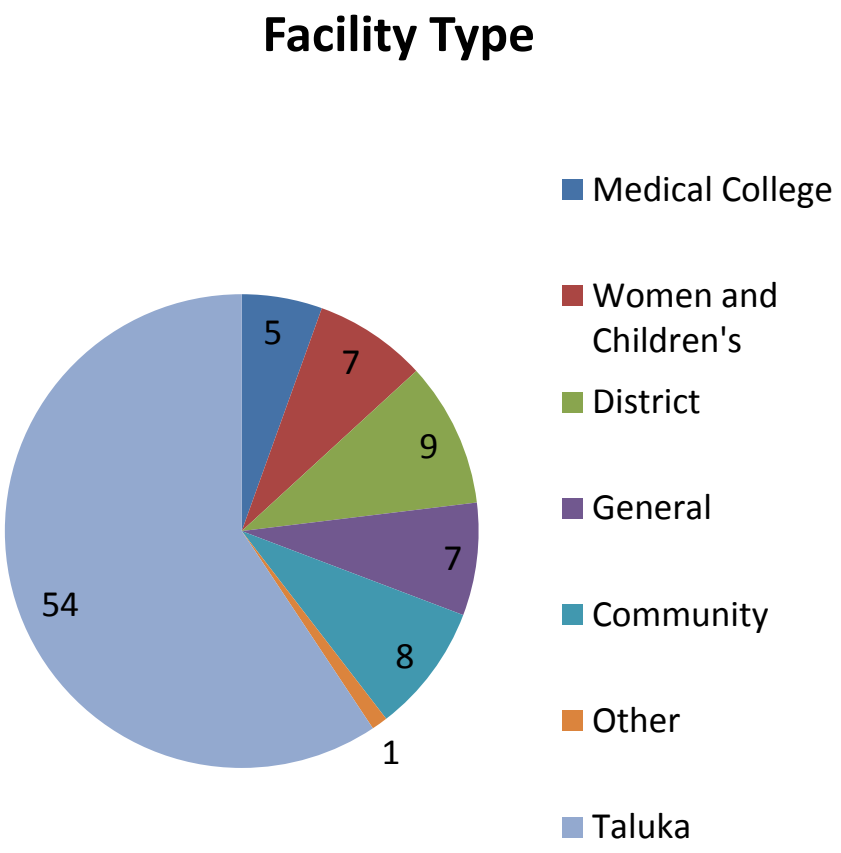
Key Persons Involved

- Principal Investigators
  - Rohini Ghosh, PhD (IIT Kanpur)
  - Shannon Maloney, PhD (IFMR)
- Medical Consultant
  - Dr. Krishnamurthy J. (U of Manitoba/Karnataka Health Promotion Trust)
- Research Associates
  - Monisha Mason (IFMR)
  - Jithin Jose (IFMR)
- Supported By
  - International Initiative for Impact Evaluation (3ie)
- With Approval From
  - Secretary, Department of Health and Family Welfare
  - Director of Health Services
  - State Mission Director, National Health Mission

91 Government Delivery Institutions

District	No.
Alappuzha	7
Eranakulam	9
Idukki	5
Kannur	8
Kasargode	3
Kollam	5
Kottayam	6
Kozhikode	5
Malappuram	7
Palakkad	8
Pathanamthitta	4
Thiruvananthapuram	11
Thrissur	7
Wayanad	6

91 Government Delivery Institutions



MMR: 22 Rollout Hospitals

District	No.
Alappuzha	1
Eranakulam	2
Idukki	1
Kannur	3
Kasargode	2
Kollam	2
Kottayam	1
Malappuram	2
Palakkad	1
Pathanamthitta	2
Thiruvananthapuram	3
Thrissur	1
Wayanad	1

Facility Type	No.
Women and Children's	1
General	4
District	4
Taluka	13

IMR: 12 Pilot Hospitals

District	No.
Alappuzha	1
Eranakulam	1
Idukki	1
Kannur	1
Kasargode	1
Kollam	1
Malappuram	1
Palakkad	2
Pathanamthitta	1
Thrissur	1
Wayanad	1

Facility Type	No.
Women and Children's	3
General	2
District	5
Taluka	1
Tribal	1

Study Overview

- Demonstrate Impact
  - Direct Observation
  - Hospital Survey
  - Medical Record Abstraction
  - Cost-Effectiveness Analysis
- Improving Implementation
  - Focus Groups with Doctors and Nurses
  - Interviews with Mothers
  - Technical Assistance

Direct Observation & Hospital Survey

- Pre/post Design
- Structural Outcomes
  - Infrastructure: cots, equipment, drug supplies
  - Staffing: obstetricians, nurses, assistants
  - Policies and Procedures: flow charts, manuals
  - General Statistics: births, deliveries, deaths

Quality Standard Example

Quality Standard 2: PPH Prevention – 4th Stage Management

Quality statement
All women, who have given birth vaginally or by caesarean section are monitored for a minimum period of two hours for evidence of excessive vaginal bleeding.

Quality Measures

Structure:
a) Evidence of agreed guidelines or protocols in the hospital and place of delivery for estimating blood loss during delivery and caesarean section

Direct Observation - Sample

SECTION-I START TIME:		
I.01	Does the hospital use blankets to measure blood loss?	Yes……1 → I.02 No……0 → I.03
I.02	Count the number of unused blankets to measure blood loss	Number [ ][ ][ ][ ]
I.03	Is there a scale for measuring blood loss?	Yes……1 → I.04 No……0 → J.01
I.04	If you place an item on the scale, will it register a weight?	Yes……1 No……0

Hospital Survey - Sample

SECTION-D START TIME:		
D.00	"What do you do to measure blood loss?" Follow up: "Do you use any materials to measure blood loss?"	
D.01	Does the hospital keep blood products available for transfusion?	Yes……..1 → E.01 No……..0 →D.02
D.02	Does the hospital have a source that provides blood products to the hospital when needed?	Yes……..1 → D.03 No……..0 → E.01
D.03	Distance of the source from the hospital	[ ][ ][ ] kms
D.04	Type of source:	Another hospital……..1 Blood bank/storage facility….2 Other (specify)……..3
SECTION-D END TIME:		

Medical Record Abstraction

- Medical Record Abstraction
  - Difference in Difference Design
  - 22 Rollout Hospitals + 22 Comparison
    - Matched by facility type, patient load
  - Process and Clinical Outcomes:
    - Treatment/Care Practices
      - Were recommended standards of care followed?
    - Clinical Outcomes
      - Complications and death

Quality Standard Example

Quality Standard 2: PPH Prevention – 4th Stage Management

Quality statement
All women, who have given birth vaginally or by caesarean section are monitored for a minimum period of two hours for evidence of excessive vaginal bleeding.

Quality Measures

Process:
Number of women giving birth vaginally who were monitored for blood pressure, pulse rate, pallor, abdominal palpation for the consistency of uterus and expressed blood loss per vaginum and fundal position every 30 minutes for a period of 2 hours.

Clinical Outcomes:
Proportion of women who develop significant blood loss (arbitrarily 500 ml) during the two hour observation period (4th stage) after completion of delivery.

Medical Record Abstraction - Sample

SECTION D: PARTOGRAM		
Please enter the following information using the Graphic Chart or Partograph. If the information is not recorded in the graphic chart, or there is no graphic chart, please search other sections for indication of monitoring and record the information below. Other possible sections where vital signs might be recorded include Nurses Record and Report, Additional Sheets		
D.01	Has at least one measurement of blood pressure been recorded post-delivery?	Yes……1 -> No…….0 -> D.02
D.01b	Count the total number of blood pressure recordings. Enter here:	
D.01c	Are the recordings spaced 30 minutes apart? (Allow +/- 5 minutes)	Yes……1 -> D.01h No…….0
D.01d	Are the recordings spaced at regular intervals?	Yes……1 -> No…….0 ->D.01f
D.01e	How many minutes apart are the recordings?	(minutes) ->D.01h
D.01f	Enter the number of minutes between recordings for the longest gap	(minutes)
D.01g	Enter the number of minutes between recordings for the shortest gap	(minutes)
D.01h	Enter the time of first recording	(military format)
D.01i	Enter the time of last recording	(military format)

Medical Record Abstraction - Sample

SECTION E : OUTCOMES		
Please enter the following information using the Nurses Record & Report		
E.01	Was placenta expelled completely?	Yes……1 No…….0 Not Mentioned…..-777
	Check: Vaginal Delivery?	Yes……1 No…….0 -> E.03
E.02	Is blood loss greater than 500ml recorded?	Yes……1 No…….0
	Check: Caesarean Delivery?	Yes……1 No…….0 -> E.04
E.03	Is blood loss greater than 1000ml recorded?	Yes……1 No…….0
E.04	If amount of blood loss not documented, is there any other indication of excessive blood loss?	Yes……1 (Specify indication) No…….0 Amount Documented….-777
E.05	Was patient referred to ICU or higher level hospital?	ICU Higher Center (SPECIFY) No Referral

Timeline

	2015		2016				2017			
	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC
MMR		INTERVENTION								
IMR		PILOT					INTERVENTION			

Success Factors

- Supportive Partner
- Communication
- Location/Proximity
- Piloting/Local Context
- Flexibility

Supportive Partner

- Values evaluation and research
  - Asks for inputs on decision-making
- Facilitates access to data
  - Hospitals and cost data
- Includes research team in meetings
  - Direct Interaction with Stakeholders
- Makes time for research team
  - In-person meetings and calls

Communication

- Regular updates on the research
  - Keep NHM apprised of our requirements/timelines
    - E.g. Scheduling baseline and QS training dates
- Regular updates on the program
  - Learn about new developments on program side
    - E.g. Physicians' strike
    - E.g. Additional funds for IMR
- Identify and correct pitfalls before they happen
  - Comparison hospitals had signed up for training

Piloting/Local Context

- Observe hospitals
  - Learn which documents contain information for MR abstraction
- Pilot data collection tools
  - Reorganize for better flow
    - Group DO questions by location in labor ward
  - Reword questions to context
    - E.g. How and where medicines stored
- Vet tools with partners
  - KFOG

Location/Proximity

- Field office in Trivandrum
  - Facilitates communication
  - Observe and monitor data collection
  - Attend stakeholder meetings
    - Confidential maternal death review
  - Observe intervention
    - Detailed understanding of QS training
    - Verify which hospitals attended training

Flexibility

- Adapt to the changing circumstances
  - Planned MMR rollout scaled down: 91 to 27 hospitals
  - Delays in both projects
  - Change in personnel
- Meet the partner's needs
  - Advice for better utilization of labor room register data
  - Improving uptake/implementation of QS before rollout

Questions?


പ്രസവ വാർഡ്
Maternity Ward
പ്രസവമുറി
LABOUR ROOM

Maternal and Infant Mortality, Kerala

- Live Births:15,410*
- MMR: 61*
  - per 100,000 live births
  - Lowest of all Indian states
  - High Income Countries^: 24
- IMR: 12+
  - per 1,000 live births
  - Lowest of all Indian states
  - High Income Countries^: 6.6

+Census of India, Sample Registration System SRS Bulletin September 2013
*Census of India, Sample Registration System Maternal Mortality Bulletin 2011-2013

^ World Bank Databank, 2010