Community-Based Interventions that Improve Newborn Health Outcomes: A Review of Evidence in South Asia

Evidence Review Series
5
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Context

With the decline in Infant Mortality Rate (IMR) in India, the proportionate contribution of newborn deaths (deaths in the first month of life) has been increasing. Due to the high percentage of newborn deaths, India can only meet the Millennium Development Goal for child survival if it achieves substantial reductions in neonatal mortality[29].

The National Rural Health Mission (NRHM) in India has set the objective of reducing IMR to 30 per 1,000 live births by 2012. Achieving this objective will require a reduction in newborn deaths of over 50 per cent in less than a decade[20]. In order to assist the NRHM in making evidence-based decisions about which MNCHN interventions and approaches to adopt to meet its national objectives, the USAID-funded Vistaar Project facilitated an evidence review of selected interventions in South Asia. This paper provides highlights of this review.

Evidence Review Process

From over 20 interventions identified on community-based newborn care (NBC), the Vistaar Project team selected 11 for review by Indian technical experts. The main selection criterion used was that the interventions should have sound evaluation data that showed results at the outcome or impact level (e.g., improved newborn care practices). In addition, due to the need to identify lessons that have a good chance of working at large scale, interventions implemented in very small geographic areas (areas with fewer than 30 villages or a population less than 25,000) were not included in the review.

The Vistaar Project team prepared summaries of each intervention that included available data in the areas of effectiveness, efficiency, and expandability. These summaries were provided to the lead implementing organizations for their feedback and then shared with the expert reviewers (See Table 1). (These summaries are available on the IntraHealth website: http://www.intrahealth.org)

The Vistaar Project team worked with Indian Government officials and recognized experts to form a panel of experts in the area of community-based newborn care. The expert group included Government officials and representatives from NGOs, academia, donors, professional associations, and other sectors. (See Table 2)

Over 25 technical experts met over two days on September 26-27, 2007 to review the 11 selected interventions. The experts worked primarily in small groups to achieve the following:

- An analysis of the available evidence
- Determination of the key lessons learned about achieving impact in the area of newborn health
- Identification of a list of several important evidence gaps where additional knowledge is needed
- Development of a list of priority components for community-based newborn care programming in India

Lessons Learned

The experts identified lessons based on the available evidence and grouped them according to the categories of Behaviour Change Communication (BCC), Services, Workers, Supportive Supervision and Others. Within the categories they followed a voting process to prioritize these lessons and recommendations for Government programming. These lessons are listed in priority order within the category.

Behavior Change Communication (BCC)

- Interpersonal communication seems be to be the strongest form of BCC
- The evidence indicates that BCC efforts help deliver results under the various packages of interventions
- Actively involving the community leads to results; community-based groups are a good platform to deliver BCC messages

Maternal, Newborn and Child Health Services

- Strengthening and capacity building of existing Government systems and services has shown results
- Integrated Child Development Scheme (ICDS) and Ministry of Health & Family Welfare (MHFW) systems working together produces better results
- Community-based models should have referral mechanisms (e.g., emergency transport) for better results
- Community ownership/involvement may require a focus on more than newborn care (broader health issues)

Government Functionaries

- A human resources planning unit seems to be needed, at least from the national to district levels, to focus on issues such as planning, recruitment, capacity building, supervision and motivation
- Capacity needs to be built for problem solving and decision making, especially at block and sub-district levels in order to decentralize successfully
- For better results, support should be provided to all front-line

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From Knowledge to Practice

Table 1: Overview of Interventions

Intervention Name	Lead Agencies	Focus Areas
ANKUR Project [26, 30]	Society for Education, Action and Research in Community Health (SEARCH); Save the Children, USA; Bill & Melinda Gates Foundation	Implemented with a population of around 87,000 people across 91 villages and six slums in Maharashtra, this project replicated community-based newborn care strategies, which involved training and supporting a community-based worker to provide skilled newborn care services, including management of sepsis, birth asphyxia and pneumonia. (2001-2005)
Community Led Initiative for Child Survival [1,2, 24, 25]	Mahatma Gandhi Institute of Medical Sciences, Sevagram (MGIMS); Aga Khan Foundation, USA	This intervention mobilized and empowered communities for newborn care, promoted behavior change communication strategies with a focus on antenatal and/or postpartum visits for newborn care, and improved access to maternal and newborn health services through a cadre of community health workers. This intervention was implemented in Wardha district of Maharashtra, covering over 88,000 people. (2003-2008)
Saving Newborn Lives Initiative (Pakistan) Aka the Hala Project [14, 15]	Department of Pediatrics & Child Health, Aga Khan University, Pakistan; London School of Tropical Medicine and Hygiene; Government of Sindh, Pakistan	Implemented across Sindh province of Pakistan and covering a population of 138,600, this project focused on community oriented strategies of behaviour change communication, increasing availability of and access to maternal and newborn health services and mobilizing the community to seek services for newborn care. (2003-2005)
Home-Based Newborn Care Project [4-12, 32]	Society for Education, Action and Research in Community Health (SEARCH); MacArthur Foundation; Ford Foundation	This intervention involved community-based care of newborns through interventions for asphyxia and sepsis prevention and management, provided through a community-based female health worker. It was implemented in Gadchiroli district of Maharashtra across 100 villages with a population of more than 40,000 people. (1995-2003)
Community-Based Participatory Intervention to Improve Essential Newborn Care Project [31]	Mother and Infant Research Activities (MIRA)	This is a community-based participatory intervention to improve the health of pregnant mothers and newborn infants in Makwanpur district, Nepal, where women facilitators worked with village development committees and addressed issues of pregnancy, childbirth and newborn health, motivated behavior change in the community and facilitated increased access to maternal and newborn care services. (1999-2003)
Projahnmo Project [13]	Johns Hopkins Bloomberg School of Public Health (JHSPH); International Centre for Diarrhoeal Disease Research, Bangladesh; Govt. of Bangladesh	Implemented in Sylhet district, Bangladesh and covering a population of 480,000, this project improved newborn health outcomes by addressing healthier practices. It created a cadre of community workers for home-based services and community mobilizers for community-based services (including management of newborn illnesses). (2003-2006)
Reproductive and Child Health, Nutrition and HIV/AIDS (RACHNA) program [16-19]	CARE India; State Govts. (Health and ICDS)	The program supported ICDS with additional interventions to improve maternal and child health and nutrition services, behaviours and outcomes. It strengthened a set of technical interventions including antenatal care, neonatal care, nutrition and immunization. The program was implemented across 78 districts in eight states of India and a population of 103 million people. (2001-2006)
Saksham Project [20, 22, 23, 28]	Johns Hopkins University, USA; Chhatrapati Shahuji Maharaj Medical University	This project was a community-based program in rural India to promote newborn care practices through community mobilization and behavior change communications. Implemented in 299 villages in Shivgarh Block, Raebareli District, Uttar Pradesh, covering 117,000 people. (2003-2007)
Saving Newborn Lives Initiative (Bangladesh) [35- 37]	Save the Children, Bangladesh; Bangladesh Rural Advancement Committee (BRAC); Bangladesh Population and Health Consortium (BPHC); CARE Bangladesh	This project monitored Low Birth Weight (LBW) babies as part of BRAC's nutrition facilitation program. It focused on reduction of LBW babies, detecting LBW babies properly and assuring that they get proper nutrition rehabilitation. Implemented in Bangladesh, the population covered is 1.15 million. (2002-2004)
Safe Motherhood Applied Research and Training (SMART) Project [3, 33, 38, 40]	Population Council, Pakistan; National Rural Support Program (NRSP)	The project tested the effects of introducing two service-delivery methods. It worked towards improving health care systems and providing community-based services, which included community empowerment and capacity building of community health workers and traditional birth attendants. Implemented in D.G. Khan and Layyah Districts of Pakistan. (2002-2005)
TBA Training and Integration on Perinatal and Maternal Mortality [27, 39]	Liaquat University of Medical and Health Sciences, Sindh, Pakistan	The intervention strengthened TBA training and integration with some reorganization of existing health services and tested its effectiveness in reducing peri-natal mortality. Implemented in rural Larkana district, Pakistan. (1998-1998)

workers in newborn care (AWW: *Aaganwadi* Worker, ANM: Auxiliary Nurse Midwives and ASHA: Accredited Social Health Activist), not just to the ASHA

- Workers perform better with support, on-the-job training, job aids and monitoring to retain their skills
- Roles and responsibilities of community-level workers need clarification
- Providing supplies for home-based skilled birth attendants who focus on the newborn is needed for results

Non-Government Community-Based Workers (CBWs)

- A trained newborn care provider is essential at childbirth, at institutional as well as home deliveries
- Performance-based remuneration is promising and should be tested further. Non-monetary incentives can also work
- There should be a newborn care team, not just one worker responsible; it is important to involve the Traditional Birth Attendants on the newborn care team so that they do not feel threatened by the CBWs
- All the interventions reviewed had a rigorous process of community worker selection that involved community consultation and a process to assess softer skill sets; these decisions should be decentralized
- CBWs need clear expectations and supportive supervision
- Use of a Village Coordination Committee (similar to a Village Health Committee) seems to be a good strategy for community mobilization and sustainability
- Use of community volunteers is effective for community awareness
- At the time of delivery results seem to be better if two trained people are present, one to care for the mother and the other to care for the newborn; the concept of working as a team should be promoted

Supportive Supervision

- Supportive supervision was provided under most of the packages of interventions reviewed and appears to help produce results
- Supportive supervision seems especially important in working with CBWs and volunteers

Cross-cutting Lessons

- Most non-Government pilots seem too intensive for Government adoption or scale up

Table 2: List of Experts

Dr. A.K. Nigam	Institute of Applied Statistics and Development Study, Uttar Pradesh
Dr. Anju Puri	UNICEF, New Delhi
Ms. Aradhna Johri	Ministry of Health and Family Welfare, Government of India
Dr. Aruna Narain	Department of Family Welfare, Government of Uttar Pradesh
Dr. Bernadette N. Kumar	Norwegian Embassy, New Delhi
Mr. Billy Stewart	DFID, New Delhi
Dr. Bulbul Sood	CEDPA, New Delhi
Ms. Dora Warren	CARE India, New Delhi
Mr. G.C. Chaturvedi	NRHM, Ministry of Health and Family Welfare, Government of India
Dr. G.K. Ingle	Maulana Azad Medical College, New Delhi
Dr. James Patterson	UNICEF, New Delhi
Ms. Jenny Amery	DFID, New Delhi
Dr. Jenny Ruducha	PATH, New Delhi
Mr. K.G. Venkateswaran	Population Foundation of India, New Delhi
Ms. Lalitha Iyer	Norway-India Partnership Initiative, New Delhi
Dr. M. Bhattacharya	National Institute of Health and Family Welfare, New Delhi
Dr. Meenakshi Jain	PATH, New Delhi
Dr. N.B. Mathur	Maulana Azad Medical College, New Delhi
Dr. N.K. Sethi	Planning Commission, Government of India
Dr. Neelam Singh	Vatsalya, Uttar Pradesh
Dr. P.P. Paranjpe	Society for Education, Action and Research in Community Health, Maharashtra
Dr. P.R. Deshmukh	Mahatma Gandhi Institute of Medical Sciences, Maharashtra
Dr. Paula Quigley	GTZ and Saving Newborn Lives Program, New Delhi
Dr. Pragati Chhabra	University College of Medical Sciences, New Delhi
Dr. Rajiv Tandon	USAID, New Delhi
Dr. Rajni Ved	Management Systems International, New Delhi
Ms. Reeta Rasaily	Indian Council of Medical Research, New Delhi
Dr. S.K. Pradhan	Lady Hardinge Medical College, New Delhi
Mr. S. Mohanty	Saksham Project, John Hopkins University, Uttar Pradesh
Dr. S. Vivekadhish	National Institute of Health and Family Welfare, New Delhi
Dr. Sangeeta Saxena	Child Health Division, Ministry of Health and Family Welfare, Government of India
Dr. Sanjay K. Rai	AIIMS, New Delhi
Dr. Sanjeev Upadhyay	USAID, New Delhi
Dr. Shanti Ghosh	Consultant, New Delhi
Ms. Shrabanti Sen	Population Foundation of India, New Delhi
Dr. Sridhar Srikanthiah	BASICS II Project, New Delhi
Dr. T. Sundararaman	National Health Systems Resource Center, New Delhi
Ms. T. Usha Kiran	Bill and Melinda Gates Foundation, New Delhi
Dr. V.K. Srivastava	KGMU, Uttar Pradesh
Dr. Vikas Bhatia	UNICEF, Uttar Pradesh
Mr. Vikram Rajan	World Bank, New Delhi

Note: Other invited experts were unable to attend.

- Most of these pilots worked outside the Government system–this makes it difficult for the Government to replicate the model or use their lessons in some cases
- District teams should use district data for prioritizing and making program decisions
- Integration of child health with maternal heath seems to be an effective strategy (using a continuum of care approach)
- Leadership at the top-by an individual or institution with commitment was present in all the interventions and strong leadership appeared important for success
- Coordination of community and facility-based workers can enable sharing workload and optimal service utilization
- Community-level functionaries need capacity building to make decentralization work
- Programs seem more successful when phased in over time; they should start simple, and gradually add more interventions
- For the short term, the most important interventions plus geographic areas should be prioritized to achieve results

Evidence Gaps

The technical experts identified the following key evidence gaps.

- There is evidence that investments in health infrastructure need to be matched with investments in human resources to yield results, but there is not sufficient information on the best balance between these two areas
- More information is needed about referral systems and the most effective ways to provide this support to primary level facilities
- More information is needed about how to engage *Panjayati Raj* Institutions and about how Village Health Committees can contribute to newborn survival and focus on equity
- Although NGOs and community-based organizations such as Village Health Committees and women's groups are often used for community mobilization and health education efforts, there is little information on how to sustain their work and the feasibility of similar efforts supported through Government systems and programs
- Many interventions have been successful at small scale, but more information is needed about how to implement similar efforts at large scale and which factors are most important to the successful scale up of an intervention
- Most of the interventions did not document specific approaches to ensure that they reached the poor and most vulnerable and there is a need to build an evidence base for improving equity in newborn care programming
- Although there is evidence that programs with a BCC component can produce results, it is not clear how much value the BCC component contributes, or which types of BCC are the most effective and efficient (e.g., more information is needed about specific issues like the optimal number of contacts and timing of contacts between mother and community workers to achieve desired behavior changes)

Components for Optimal Community-Based Newborn Care Package

In 2005, as part of global efforts to share knowledge about efficient means of decreasing neonatal mortality, the international journal, The Lancet, published a landmark series of systematic reviews on neonatal care and survival. These reviews identified 16 major interventions of proven efficacy (implemented under study conditions)[21]. An important conclusion of this review was that neonatal survival is more dependent on skilled personnel than on the availability of technologies and commodities. The ER experts identified priority components for community-based newborn care programming in India using The Lancet review of neonatal interventions [Darmstadt et al, 2005] (See Table 3).

Table 3: Interventions Recommended for Optimal Community-Based Newborn Care (Short Term Package – During the Next Five Years)

	Intervention
1.	Early and exclusive breastfeeding
2.	Prevention and management of hypothermia (including 'kangaroo' mother care at home)
3.	Clean delivery
4.	Tetanus toxoid immunization
5.	Community-based pneumonia case management
6.	Intermittent presumptive treatment of malaria in endemic areas*
7.	Community-based resuscitation of newborns*

** There was consensus among experts on interventions 1 to 5. For interventions 6 and 7, although the majority of experts recommended their inclusion, there was not consensus on these intervention for the short term package.*

In Summary

The evidence review process is a useful approach to build consensus among experts and program leaders, inform program planning, and assist with decision making. The Vistaar Project experience shows that this process is most valuable when:

- It is conducted in an open, inclusive and participatory manner
- The focus is on learning lessons, not identifying the "best model"
- The audience is clear, and the evidence is reviewed from their perspective (i.e., in this case, the evidence was reviewed for application in Government Programming)

The Vistaar Project greatly appreciated the opportunity to be a part of this evidence review and is honored to join with the technical experts, implementing agencies, and Government program leaders and implementers who are using evidence to improve MNCHN program impact.

INTRAHEALTH INTERNATIONAL

Vision

We believe in a world where all people have an equal opportunity for health and well-being.

Mission

To mobilize local talent to create sustainable and accessible health care

The Purpose of the Vistaar Project is:

To assist the Government of India and the State Governments of Uttar Pradesh and Jharkhand in taking knowledge to practice for improved maternal, newborn, and child health and nutritional status

IntraHealth International, Inc. is the lead agency for the Vistaar Project

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