

Contributions of Male Health Activists to Community-Based Maternal, Newborn and Child Health Service Delivery: Findings from a Pilot Project in Odisha, India

This brief presents the key findings from the evaluation of the *Innovations for Maternal, Newborn & Child Health* (“*Innovations*”) pilot project in Keonjhar District, Odisha State of India. The pilot, named Male Health Activists (“MHAs”), recruited and trained MHAs and paired them with Accredited Social Health Activists (“ASHAs”) with the aim of improving coverage of maternal, newborn and child health (“MNCH”) services delivered by the formal health care system, home-based management of MNCH, and care-seeking for prevention and treatment services.

Context

Demonstrating commitment to Millennium Development Goals (“MDGs”) 4 and 5, the Government of India has introduced ambitious policies to improve reproductive, maternal, newborn and child health (“RMNCH”), with special attention to rural residents and the poor [1, 2]. The creation

of the National Rural Health Mission (“NRHM”) and the introduction of ASHAs to extend services to hard-to-reach, rural communities [2, 3], have been seen as key milestones towards the achievement of MDGs 4 and 5. ASHAs, who are essentially women community health workers (“CHWs”), are conceptualized as both “service extenders,” “another pair of hands” and “cultural mediators” between the existing health system and rural residents [4].

Through emphasis on integrated service delivery along the continuum of care, India has made some encouraging progress in reduction of maternal deaths, showing an annual decline of 5.7% between 2005 and 2010 [5]. Neonatal mortality, however, has remained stagnant and constitutes an even higher proportion of total under-five deaths [6]. Disparities remain high between and within some states due to socio-economic and health system-related factors. The Government of India observed that “*the RMNCH packages*



Photo: MHAs attending a refresher training, Odisha, India © Ariel Higgins-Steele/Concern Worldwide

that are currently being implemented under the NRHM address the most common causes of maternal and child deaths. However, the coverage of key interventions, such as antenatal care, deliveries by skilled birth attendants, and use of oral rehydration solution (ORS) for the management of childhood diarrhea during the NRHM period has been slow and of variable quality across states”[1].

Odisha is among six states in India with higher rates of maternal and child deaths. A study conducted in eight districts of Odisha found that the husband played a dominant role as the decision-maker; in 69% of cases, care-seeking decisions were by the husband [7]. The study also found that 66% of maternal deaths could be attributed to delay in decision-making by the husband or his inability to assess the severity of symptoms related to complications. A subsequent report for the Government of Odisha on male involvement in maternal health care found that only 25% of men knew about the recommended four antenatal visits during pregnancy. Husbands’ knowledge of danger signs for pregnancy, delivery and post-natal care was also found to be very low [8]. These studies suggest there are current gaps in outreach, specifically to men, that constrain improvements in and demand for reproductive, maternal, newborn and child health (“RMNCH”) services in Odisha.

A New Idea

In collaboration with in-country partners and stakeholders in Odisha State, Concern Worldwide’s *Innovations for Maternal, Newborn & Child Health (“Innovations”)*, researched barriers to access MNCH care and issued a public call for innovative ideas to address MNCH barriers, encouraging submission of ideas from a wide range of community members and stakeholders. Of the hundreds of ideas submitted, the winning concept proposed to introduce male ASHAs, termed “Male Health Activists” (“MHAs”) to complement the work of female ASHAs and target outreach to men as a way to extend community-based delivery of health services for women, neonates and children.

Innovations and its partners designed and implemented a pilot based on this idea, which consisted of recruiting and training MHAs and pairing them with ASHAs with the aim of:

- Improving coverage of MNCH services delivered by the formal health care system; and
- Improving home-based management of MNCH, and care-seeking for prevention and treatment services.

The MHA pilot was designed to overcome some of the challenges ASHAs face in delivering their services, in particular encouraging men to take a more active role in the health of

mothers and children. MHAs were recruited and trained to conduct the following activities:

- Work with and support ASHAs at the village level in the referral of women and children to facility-based care;
- Coordinate with other community-level health workers for the delivery of other community-based RMNCH services (e.g., antenatal care, immunization, contraception, etc.);
- Counsel husbands/fathers on RMNCH health issues and encourage appropriate care-seeking; and
- Work with other village-level leaders to support the planning and implementation of other health-related activities at the village level.

Box 1 provides additional information on the pilot. Keonjhar District was selected as the pilot location, which is also one of the 264 “high focus districts” identified by the Government of India requiring priority action to fast track improvements and reduce disparities in RMNCH [9]. The pilot was launched in February 2011 for a period of approximately two years.

Purpose of the Brief

This brief summarizes the key findings from the evaluation of the MHA pilot. The evaluation, largely qualitative, sought to answer the following questions:

- Do MHAs influence (or contribute to influencing) knowledge levels and care practices among men, with respect to home-based care as well as formal (institutional) health care?
- Does engaging MHAs in community mobilization and support for service delivery contribute to overcoming gender barriers and in strengthening the work done by ASHAs?
- Does engaging MHAs increase uptake of MNCH services overall, especially among the most under-served communities?

Roles and Contributions of CHWs and ASHAs in India: Summary of Evidence

To set the results of the evaluation in context, we reviewed the research literature on roles and contributions of various CHW and ASHA initiatives in India. The evidence reviewed seems to suggest that while CHWs and ASHAs have contributed to improved MNCH outcomes, there are the following notable limitations:

- The ASHA program is remarkably successful in the delivery of two key MNCH services: escorting pregnant women to institutions for delivery, and getting pregnant women and young children to immunization sessions. However, the success of the program has been “limited” so far in terms of responding to the healthcare needs of the community and changing health behaviors [3].
- Poor supervision, insufficient levels of financial incentives and limited systemic support are frequently cited as explanations for CHWs’ failure to provide the required standard of MNCH services [10, 11].
- While CHWs were often driven by a “strong personal will to serve people,” the absence of professional development opportunities or promotion paths was associated with low retention [12].
- CHWs are strongly motivated on an individual level (e.g., social responsibility, intrinsic satisfaction, self-motivation) and a community level (e.g., participation, recognition, autonomy), but their increasing workload leads them to feel “overburdened” [13]. This appears consistent with trends across India (and all over the world), whereby CHWs are increasingly “expected to do more without necessarily receiving the needed support to do their jobs well” [14].
- Some ASHAs are unable to devote the time expected to their work due to their own family commitments, while insecurity at night forces ASHAs to be reluctant to escort pregnant women to health facilities for delivery after dark [15].
- Overall, in spite of the introduction of new CHWs such as ASHAs and the re-training of Auxiliary Nurse Midwives (“ANMs”), the provision of quality MNCH services in rural India is severely constrained by a “dearth of available skilled manpower” [16].

By contrast, little is known on the influence of male CHWs in addressing barriers to RMNCH in India. The research literature suggests that:

- When Male Multi-Purpose Health Worker (“MPWs”) carry out administrative work and provide health education services, female CHWs are able to devote more time to providing quality MNCH services [17].
- Beyond this “work-sharing” role, it is increasingly recognized that male MPWs could have an important role to play in providing MNCH services [18] and in educating men in order to improve MNCH outcomes [19, 20].

Additional findings from relevant studies are summarized in Annex 1.

Evaluation of the MHA Pilot

Methods

Qualitative data collection and review of facility records were conducted between October and December 2012, as described in Table 1.

Profile of MHAs

MHAs were mostly married, aged between 25 and 34 years (63%) and with secondary level education or higher (80%). This distribution is consistent with the profile of ASHAs in Odisha in terms of the age and marital status [4]. However, a higher percentage of MHAs had better educational levels as compared to ASHAs (62.5% of ASHAs had secondary or higher education), as a result of the availability of a relatively larger pool of educated men in the villages, who could be gainfully recruited for any community level work.

Table 1. Evaluation Methods for MHA Pilot

Method	Objective	# Inter-views
Rapid Participatory Ethnographic Evaluation and Research (Rapid PEER) with community members	Understand the role of MHAs in their communities; Elicit stakeholder views on process and outcomes	29
Semi-Structured Interviews (“SSI”) with MHAs SSI with other community health workers (ASHAs, ANMs and Angan-wadi Workers (“AWWs”))	Understand the role and relationship of the MHA vis-à-vis other CHWs Assess the type and extent of support provided by MHAs	16 MHA 19 Health Workers ¹
SSI with Key Informants	Elicit stakeholder views on process and outcomes	14
SSI with women and men	Assess knowledge, attitudes and behavior amongst men and women on RMNCH; and Understand MHAs’ involvement and support provided.	31 women ² 27 men ³
Facility data ⁴	Establish the levels of facility based deliveries in project villages	NA

¹ 12 ASHAs, 3 ANMs and 4 AWWs

² 19 women from project sites and 12 from non-project sites

³ 16 men from project sites and 11 from non-project sites

⁴ Not used in this Brief

Age group	%
Less than 25 years	15
25 to 30 years	39
31 to 35 years	24
36 to 40 years	12
41 to 45 years	7
More than 45 years	3
	100

Education	%
Less than Class 8	15.6
Classes 8 to 9	36.3
Class 10	35.4
Class 12	11.6
Undergraduate	2.1
Missing data	0.4
	100

Key Findings

Overall, the evaluation finds that MHAs are a welcome addition as community-level health workers. With similar purpose and goals as ASHAs, MHAs find ways to contribute towards improvements in community outreach and demand generation.

Support to families and ASHAs as an escort for facility deliveries. ASHAs and community members both report that one of most important forms of support provided by MHAs has been their role as escorts to pregnant women and their families to the facilities during the time of childbirth. Families value this support as MHAs help them negotiate an unfamiliar place (i.e., the health facility) during a major life event and provide psychological support, alongside ASHAs. ASHAs report that they value the additional security they have from MHAs as a trusted male who can accompany them for night-time deliveries and negotiate aspects of transport or facility care when the ASHA stays with the mother. In the majority of births in catchment areas covered by the pilot, ASHAs and MHAs indicate working together to escort women to health facilities. ASHAs and community members value MHAs as an additional hand to share workload when the ASHA is absent or is otherwise engaged, as illustrated by the following quotes.

MHA can move quickly in the hospital and arrange bloods [a blood transfusion], which ASHA cannot do because she is a lady. (Rapid PEER, Husband)

Now I feel safer to conduct my responsibilities related to night-time deliveries. MHA provides much support. My family members also feel good about it, as it is night-time and the medical facility is far away. (SSI, ASHA)

MHA is needed to provide support for night deliveries. It is safe to go with MHA. Yes, change has taken place. Previously male family members of the pregnant women used to quarrel and fight with me but now after engagement of MHA

they have stopped it. The road to our village is very bad. And alcohol is another big problem here in the Juang hamlets. When villagers are very drunk they do not allow me to enter their hamlet. Now, after engagement of MHA, who is from Juang tribe himself, we are having less issues conducting community health work. (SSI, ASHA)

Earlier there was only ASHA, now there are two persons, MHA and ASHA, which is good for the community. No one can predict exactly when an infant will be born, and when it happens suddenly one night, MHA can be called to help escort the woman and family members to the health facility. ASHA is sometimes not able to go in the night. As a male, MHA can react to quickly at night. (Rapid PEER, Husband)

Support in attendance of Village Health and Nutrition Day (“VHND”) and immunization days. MHAs have provided considerable support in villages for mobilizing women due for antenatal care checks and children due for immunization to attend VHND at which these services are provided. Health workers (ASHAs, ANWs and AWWs) report that attendance rates at VHND have improved due to the mobilization by MHAs and follow-up visits with individual families. This support is particularly valued in areas where there was previously low attendance at VHND due to a wide geographic spread of hamlets and where access is difficult for ASHAs. The two following quotes reinforce this sentiment.

I weigh the babies and MHA brings the children to the health center. We bring the babies together. Parents do not come at the first call, so as community health workers, we have to go repeatedly to remind them. MHA has taken up this responsibility. (SSI, ASHA)

During his one and half year of service, MHA has done a lot in covering the distant villages and hamlets for immunization and VHND. Previously, we were going to those households in a group (AWW, ASHA, family members) because it is in the forest and located on the hill top. But MHA goes alone to those households by bicycle. He puts the bicycle some-

where and climbs the hill to bring the babies and mothers for these community health events. (SSI, ASHA).

There is also evidence that more men in the project villages are aware of the importance of antenatal visits and care and of the support that pregnant women and newborns need. Men also report awareness about tetanus toxoid injections, iron folic acid and the importance of nutritious food and avoiding heavy work during pregnancy.

Spreading RMNCH knowledge and encouraging behavior change among men. MHAs emerge as the only local and direct source of RMNCH knowledge for men in the pilot villages. As peers, and in some cases as role models, MHAs have been able to establish rapport with men. Interviews show that a greater number of men in project blocks are aware of basic RMNCH issues; they encourage facility-based care, lend support within the household, and provide more food of higher nutritional content. ASHAs and other stakeholders report that the uptake of male contraception has increased in project villages. ASHAs report that they are now able to distribute condoms to men through the MHAs and do not have to do it through the wives as they did earlier in most cases. The voluntary uptake of non-scalpel vasectomy is also reported to have increased. ASHAs, ANMs, community members and other block and district-level stakeholders all value this support from MHAs in terms of promoting male contraception in the villages, as echoed below.

Take family planning for instance... we can tell women to take oral pill... ASHA and ANM have not been successful in some cases men resist... but MHAs are better at engaging some community members on these issues. We have instructed our ASHAs and ANMs to cooperate with MHA, work together. (KII, Medical Officer)

The ASHA talks to women and girls...but there has been no one who can talk to the men... so MHA is filling that gap. The men can make a difference... They have been motivating men to come for voluntary non-scalpel vasectomy. (KII, Block Program Officer NRHM)

I give oral pill to mothers to keep at least 3 years gap between children. MHA gets condoms from me and gives them to male community members. This form of outreach was not done before. (SSI, ASHA)

MHAs are reported to be very helpful in sensitizing and motivating some families to stop harmful newborn practices, particularly early bathing and head-shaving. These messages are delivered by all healthcare workers such as Medical Officers, ANMs, ASHAs and AWWs, and MHAs provide an additional voice reinforcing these messages, especially



Photo: MHA raising awareness of men on MNCH with pictorial diagrammes, Odisha, India © Ariel Higgins-Steele/Concern Worldwide

targeting the men. There are signs of some changes beginning to happen due to these multiple points of influence. Some families are now reported to have abandoned some of harmful practices, for example instead of the potentially harmful practice of bathing the baby in cold water soon after birth, some families are reported to bathe the baby with tepid water three days after birth. Here is what a husband had to say.

If the Munda [tribal group] don't shave the head of the child then no community member will carry that child. Other families will not carry the child. There is a superstition that the child is not pure, if you do not shave the head. When MHA tells this group not to shave the head or bath the infant they tell him that if we do not do this then our people will not touch us. If we do this the family will be purified. He visits the Munda community frequently. First they were very angry with him. After frequent visits some in the community have changed their minds and instead of shaving the baby's head they are now just cutting a few hairs. (Rapid PEER, Husband TB1)

The pilot faced some challenges while delivering on its objectives. Health system issues and distances are as much a challenge for MHAs as ASHAs. It is difficult for MHAs in some of the remote areas to overcome problems such as lack of available transport, limited ability to contact or arranging for such transport (e.g., very poor mobile network coverage) or if the system has been not adequately responsive (e.g., corruption, poor quality care, etc.).

Box 1. Key Information for MHA Pilot

Design:

- Aligned with ASHA model, e.g., selection, training (supplemented with MHA-specific content), incentives
- Supervisors recruited and trained by NGO partners

Location: Keonjhar, Odisha State, India

Coverage: 205 project villages in 6 blocks (project villages are 22% of the total vulnerable villages in project blocks and 11% of the vulnerable villages in the district)

Partners: WOSCA, WORD, RRO (implementation); Options Consultancy Services (independent evaluation); District and State Health Authorities

Implementation Start: October 2011

Evaluation data collection: September to December 2012

for MHAs as peer educators could help fill the existing gap in terms of addressing men's knowledge and behavior for men's health issues as well to influence RMNCH. A service delivery role for MHAs may also help, for example, in areas where ASHAs/women eligible to be ASHAs are unavailable (areas of low health worker density) and in remote areas which present security risks for women, or where an additional effort is needed.

Considerations related to complementarity and synergy between MHAs and ASHAs and the reinforcement of their work are of vital importance. In this pilot, with separate accountability and compensation structures, MHAs and ASHAs have worked in a complementary way rather than in competition. Any future introduction of MHAs should assess and mitigate the risks (if any) of ASHAs feeling that MHAs could diminish important and hard-earned status and enthusiasm within communities and among health professionals.

Implications

Findings from this outcome evaluation indicate MHAs can be a valuable addition to the health system in India as community-level workers, particularly reaching out to local men and influencing RMNCH through them. This becomes particularly relevant in light of the plans for additional community-level health workers as part of plans for Universal Health Coverage [21].

As ASHA roles get expanded to include other aspects of health or types of services, it opens the potential for work-sharing and task-shifting with MHAs. An expanded role

About *Innovations for Maternal, Newborn & Child Health*

Innovations for Maternal, Newborn & Child Health is an initiative that accelerates the discovery and testing of creative solutions to understand and overcome barriers that prevent essential health services from reaching women and children in India, Kenya, Malawi, Ghana and Sierra Leone. *Innovations'* global partners include UNICEF, Options, and JSI Research and Training Institute.

Contact email:
ariel.higgins-steele@concern.net

All images are copyright of Concern Worldwide's
Innovations for Maternal, Newborn & Child Health

Photo: Pregnant women and other community members, Odisha, India © Ariel Higgins-Steele/Concern Worldwide



Annex 1: Studies on Male CHWs in India

There have been a limited number of studies conducted in order to measure the impact of male MPWs on both general and MNCH-specific outcomes. In terms of general health outcomes, male MPWs were responsible for treatment observation under a “strikingly successful” pilot implementation of the Revised National Tuberculosis Control Programme (1993-1999, 15 districts of 20 states). However, male MPWs’ specific impact on the success of the program has not been evaluated [22, 23].

A study [24] on health service utilization and perception of services in rural Odisha provides important insights into rural populations’ perceptions of male MPWs. Main health problems reported in the four study districts included mild to severe fever and malaria, diarrhoea and vomiting, tuberculosis, and burns, fractures, bites and cuts. Although these are all issues which fall under male MPWs’ responsibilities for care and treatment, villagers’ overall perception of the male MPWs was that he was “rarely seen, and they were unsure as to his intended purpose” [24].

Some respondents indicated an awareness of the MPWs’ role in relation to the control and treatment of malaria, and as a helper for the ANM in terms of record-keeping, carrying vaccines and transport [18]. But overall, these findings are consistent with previous studies which report a general under-utilization of male MPWs, a widespread lack of interest among these workers in supporting female workers, and a lack of knowledge regarding their role among communities they serve [cited in 24].

In terms of MNCH outcomes, a recent study in Bihar and Jharkhand on the provision of early medical abortion found that male MPWs demonstrated a high level of interest in attending training on abortion, which indicates that male MPWs could also be involved to a greater extent in the provision of certain MNCH services for women [18]. However, this study did not gain insight into how women would feel about male providers of medical abortion [18]. Women in India have reported not seeking out health care if a female provider is not available, due to fear and embarrassment of being examined by a male health care provider [cited in 12].

Male MPWs were also involved in an operations research project in rural Maharashtra from 1993 to 1999, which aimed to strengthen the health system and the quality of service delivery of the RCH programme [15]. During the intervention period, male MPWs were therefore re-assigned from their initial tasks of attending Mother and Child Protection (“MCP”) clinics to assist ANMs in completing registers and providing health education at the MCP clinic. Male MPWs also approached village leaders and *panchayat* members to inform them about the importance of medical care during pregnancy, delivery and the post-partum period. These activities ensured that ANMs had more time to pay attention to pregnant women, address the needs of women wanting contraception, and so on. At the end of the intervention, a 30% increase in the attendance of pregnant women at the MCP clinic was noted, as well as improvements in the quality of care (over 60% of women receiving all components of antenatal care) and the services which were previously neglected (e.g., urine tests, blood pressure measurement) were administered to 89% of women attending the clinic [22]. However, the direct impact of male MPWs’ role in supporting ANMs on these outcomes is not discussed in the study.

References

1. Government of India, *A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health in India* (January 2013).
2. Ministry of Health & Family Welfare, The Government of India. *National Rural Health Mission (2005-2012): Mission Document*. Retrieved February 15, 2011, from http://www.mohfw.nic.in/NRHM/Documents/Mission_Document.pdf
3. National Health Systems Resources Centre (NHSRC), "ASHAs Which Way Forward? Evaluation of the ASHA Programme." (New Delhi: 2011).
4. Kerry Scott and Shobhit Shanker. "Tying Their Hands? Institutional Obstacles to the Success of the ASHA Community Health Worker Programme in Rural North India," *AIDS Care* 22, no. sup2 (2010): 1606–1612.
5. Maternal Mortality Estimation Inter-Agency Group, "Trends in maternal mortality: 1990 to 2010," (Geneva: World Health Organization, 2012).
6. Kenneth Hill, Danzhen You, Mie Inoue, Mikkel Oestergaard, "Child Mortality Estimation: Accelerated Progress in Reducing Global Child Mortality, 1990–2010." *PLoS Med* 9, no. 8 (2012): e1001303.
7. UNICEF, "Maternal and Perinatal Death Inquiry and Response: Empowering Communities to Avert Maternal Deaths in India" (New Delhi, 2008).
8. "Formative Research For Developing A Communication Strategy For Involving Men During Pregnancy, Delivery And Post Partum Care In Odisha," prepared for Department of Health and Family Welfare Odisha, by Technical and Management Support Team, Odisha Health Sector Plan.
9. Government of India, "264 High Focus Districts including RCH and LWE new -Proposed Allocation for 2010-11".
10. Saji Gopalan and Varatharajan Durairaj, "Addressing Maternal Healthcare Through Demand Side Financial Incentives: Experience of JananiSurakshaYojana Program in India." *BMC Health Services Research* 12, no. 1 (2012): 319.
11. Praween Agrawal, Sutapa Agrawal, Saifuddin Ahmed, Gary L Darmstadt, Emma K Williams, Heather E Rosen, Vishwajeet Kumar, et al., "Effect of Knowledge of Community Health Workers on Essential Newborn Health Care: a Study from Rural India." *Health Policy and Planning* 27, no. 2 (March 2012): 115–126.
12. Shridhar Kadam, Sanghamitra Pati, Mohammad Akhtar Hussain, Srinivas Nallala, Nayan Chakravarty, Bhuputra Panda, Biswamitra Sahu, Abhimanyu Singh Chauhan, Shomik Ray, and Sangram Swain, "Assessment of Factors Influencing Retention of Health Workforce in Rural and Remote Areas of Odisha, India," *BMC Proceedings* 6, no. 5 (September 1, 2012): 1–2.
13. Saji Gopalan, Satyanarayan Mohanty, and Ashis Das, "Assessing Community Health Workers' Performance Motivation: a Mixed-methods Approach on India's Accredited Social Health Activists (ASHA) Programme," *BMJ Open* 2, no. 5 (January 1, 2012).
14. Wanda Jaskiewicz and Kate Tulenko, "Increasing Community Health Worker Productivity and Effectiveness: a Review of the Influence of the Work Environment." *Human Resources for Health* 10, no. 1 (2012): 38.
15. D-COR Consulting, "A Rapid Assessment of Factors Affecting ASHA Roles and Incentives in 'KBK' Region of Orissa," (Bhubaneswar, 2012).
16. Kranti Vora, Dileep V Mavalankar, K V Ramani, Mudita Upadhyaya, Bharati Sharma, Sharadlyengar, Vikram Gupta, and Kirtilyengar, "Maternal Health Situation in India: a Case Study," *Journal of Health, Population, and Nutrition* 27, no. 2 (April 2009): 184–201.
17. Alka Barua, Ramesh Waghmare, and Sumathi Venkiteswaran, "Implementing Reproductive and Child Health Services in Rural Maharashtra, India: a Pragmatic Approach," *Reproductive Health Matters* 11, no. 21 (May 2003): 140–149.
18. Lisa Patel, Trude A Bennett, Carolyn Tucker Halpern, Heidi Bart Johnston, and Chirayath M Suchindran, "Support for Provision of Early Medical Abortion by Mid-level Providers in Bihar and Jharkhand, India," *Reproductive Health Matters* 17, no. 33 (May 2009): 70–79.
19. Matthew Dudgeon, and Marcia C Inhorn, "Men's Influences on Women's Reproductive Health: Medical Anthropological Perspectives," *Social Science & Medicine* (1982) 59, no. 7 (October 2004): 1379–1395.
20. Sagarika Senapaty, "Determinants of Utilization of Reproductive Health Care Services in India: Involving Men in Maternal Health" Thesis submitted to Faculty of the Graduate School of Arts and Science, Georgetown University (2011).
21. High Level Expert Group Report on Universal Health Coverage for India, submitted to the Planning Commission of India, New Delhi, November 2011.
22. Mrigesh Bhatia, and Susan Rifkin, "A Renewed Focus on Primary Health Care: Revitalize or Reframe," *Globalization and Health* 6, no. 1 (2010): 13.
23. G.R. Khatri and T.R. Frieden, "The Status and Prospects of Tuberculosis Control in India," *The International Journal of Tuberculosis and Lung Disease* 4, no. 3 (2000): 193–200.
24. Alastair Ager and Katy Pepper. "Patterns of Health Service Utilization and Perceptions of Needs and Services in Rural Orissa," *Health Policy and Planning* 20, no. 3 (May 1, 2005): 176–184.