Imagine using a service like Trip Advisor or Amazon Reviews, but for life-saving health care. Now imagine the users come from one of the poorest, most underserved regions in Rural India.

This was the innovative idea that led WRA India, with support from MSD for Mothers, and in partnership with local technology partner, Gram Vanni (“voice of the village”), to develop the Mobile Monitor for Quality of Maternal Care (MoM-QC).

The MoM-QC model experimented with using a toll-free number and basic mobile phone technology to both inform expecting mothers of existing health services and allow them to provide feedback on the quality of those services.

For five months during 2013-2014, The MoM-QC team led a pilot study during which expectant mothers and those who had newly given birth were provided access to information regarding the quality of care they could and should expect from both government-run and private hospitals in the area. After learning about their options, women gave feedback on this care and suggestions for long-term improvement.

The lessons learned from this pilot suggest a large scale-up would not only benefit the population in India, but provide a sustainable model for real-time feedback and improved quality of services.
The **White Ribbon Alliance (WRA)** was formed over a decade ago to give a voice to the women at risk of dying in childbirth. Our mission is to inspire and convene advocates who campaign to uphold the right of all women to be safe and healthy before, during and after childbirth. We help citizens recognize their rights and ensure that commitments made to maternal and newborn health are met.

**MSD for Mothers** (also known as Merck for Mothers) is a 10-year, $500 million initiative focused on creating a world where no woman has to die from complications of pregnancy and childbirth. Drawing on the company’s history of discovering innovative, life-saving medicines and vaccines, MSD for Mothers is applying MSD’s scientific and business expertise – as well as its financial resources and experience in taking on tough global healthcare challenges – to reduce maternal mortality around the world.

**Gram Vaani** ("voice of the village"), is a leader in promoting simple and low-cost solutions to enable voice-platform based forms of social media in rural India. Its ongoing service, Jharkhand Mobile Vaani, is currently available to anyone in Jharkhand with access to a mobile phone and receives an average of 3,000 to 5,000 calls daily, with callers providing feedback on a variety of public and private initiatives.

**THE CHALLENGE**

Nearly 17 percent of maternal deaths around the world occur in India. Although India has made progress in reducing maternal deaths and increasing access to health care, this progress has not been consistent across the country. The state of Jharkhand (see map) has a high maternal mortality ratio of 208 deaths per 100,000 live births, much higher than the national average of 167 deaths.

Over the last few years, India has witnessed a dramatic increase in the proportion of births in health facilities, and the high demand for care at selected hospitals has resulted in massive overcrowding and posed a challenge for the provision of quality of care.

Quality of care has an impact on where and when women seek care. Quality of care is critical to women's decisions to use formal health services; women are willing to travel further to reach a clinic that provides better quality care.
To establish whether rural women can use a mobile Interactive Voice Response (IVR) platform to provide feedback on the quality of care received at facilities, and to assess if IVR can raise rural women’s knowledge and awareness of care, WRA India launched a pilot, Mobile Monitor for Quality of Maternal Care (MoM-QC), with support from MSD for Mothers.

Gram Vaani’s ongoing service was leveraged to create a dedicated platform to reach out to 494 pregnant women and lactating mothers across 20 villages in Jharkhand. WRA India collaborated with the local government and nonprofit organizations to promote the toll-free number, and due to the resulting interest the final test audience grew to almost 11,000 women. The MoM-QC pilot project was launched in November 2013 (known locally as Swasthya Vaani) and continued for five months.

The pilot results show that MoM-QC has huge potential to be scaled up as a free phone service that uses interactive voice response technology to educate women on the quality of care they should expect from health providers, inform women about available health programs and services, enable women to anonymously rate the quality of care they received, and empower women to make more informed decisions about their health and health care.

Approximately 64 percent of Indians nationwide own an inexpensive mobile phone and a coverage plan. In Jharkhand, that population is only 35 percent, but its numbers are growing. The MoM-QC platform was designed to use IVR rather than a more complicated SMS/text messaging model in order to effectively reach out to the rural, poor, and illiterate women in Jharkhand. The quality of care feedback received from these women can then be used to encourage providers and health officials (both public and private) who want to be responsive to women’s needs to improve care in response to quality ratings.

The MoM-QC pilot provided a scalable and low-cost means to educate pregnant women, new mothers, and their families on quality of care and maternal health entitlements. By providing information on existing services and a means to give customer feedback, the IVR conveyed valuable information to both service providers and their clients, with potential to improve quality of care over time.

The data analyses clearly shows that this model has the potential to lead to a large body of objective, balanced and direct feedback that can be used to address quality of care improvements over time within the public and private healthcare system.
Khushi’s Mom: Now She Will Ask More Questions

Sunita Devi is 22 years old. Married just before her 18th birthday, her first child died in 2012 due to complications. She was part of WRA India’s base line study and enjoyed being part of the MoM-QC project, because she learned a lot about quality of care.

“I learned to look for clean sheets and food for me,” she noted. Sunita also learned about how to be looked after properly by staff.

Her husband was supportive of the MoM-QC project and allowed her to use the family’s mobile phone to call in and listen to messages. Pregnant with her second child, Sunita gave feedback about quality of care through the IVR system both before and after she gave birth.

Based on what she learned during the project, Sunita planned to give birth in a private hospital, but the baby came early. Sunita has high hopes for her newborn daughter, including to give her a quality education. She will allow her to get married but only after finishing her schooling.

Asked about the most valuable thing she learned during the project, Sunita says, “I learnt a lot about my rights. When my first child died, I didn’t even ask the doctor why it happened. Now I would ask more questions.”
NARROWING DOWN KEY INDICATORS

Women's perception of the quality of care they receive influences their decision whether or not to seek facility-based health care, thereby affecting maternal mortality. In the health system “quality of care” broadly encompasses clinical effectiveness, safety, and a positive experience for the patient. The MoM-QC pilot project hypothesized that collecting patient experiences could be a means by which to eventually influence longer-term efforts to improve national maternal health care, quality of service, and client expectations.

Prior to launching the MoM-QC pilot, WRA India conducted an analysis to better understand women’s perspectives on the health care system in Jharkhand, its services, and its providers. This was followed by a desk review on quality of care which included an analysis of information highlighting the need to focus on quality of care issues. Global and national guidelines and protocols on quality of care were reviewed along with technical standards and documents, and a checklist on quality of care was created. Finally, a series of workshops were held with health personnel and local Jharkhand government officials, private providers, and community women.

The outcome was an agreement on nine indicators:

1. **Accessibility:** including factors such as distance, availability of transportation

2. **Cleanliness and hygiene:** including clean hospital, clean toilets, safe drinking water

3. **Human resources:** availability of trained doctors, nurses and other health personnel

4. **Medicines, supplies, equipment:** pain management, preparedness for complications

5. **Interpersonal behavior:** how well the providers treated the patients and the absence of abuse

6. **Privacy and confidentiality:** family members allowed to stay with the patient; absence of unnecessary male staff

7. **Emotional support:** ability to have desired birth companion and whether chosen family members were present during delivery

8. **Financial cost of care:** can create immense anxiety especially if patient belongs to low socio-economic status

9. **Perception of better pregnancy outcome:** this was one of the most important factors on the patient side regarding quality of care and this concern went beyond even costs or other factors.

WRA India further refined these indicators down to four in an effort to provide initial focus for the MoM-QC pilot project. The final four indicators were shortlisted through conversations with different stakeholders and by a committee comprising of experts on communication, advocacy and medical doctors.

The final quality of care indicators for the MoM-QC pilot were:

1. **Timeliness:** Waiting time before receiving services

2. **Service Guarantee:** Adequate availability of staff, medicines, supplies, equipment especially for complication and pain management

3. **Respectful care:** Maintaining comfort, privacy and confidentiality; absence of abuse

4. **Cleanliness of the facility:** Toilets, hygiene, housekeeping services, and sanitation

A key factor emerged from the analysis that for platforms like MoM-QC to be successful, a very important aspect was awareness creation among both providers and the community regarding quality of care, followed by advocacy to create and enforce mechanisms to involve both public and private providers in continuous quality assurance and quality improvement mechanisms.
When Sita Devi's mother died and her father re-married, he wanted all 3 of his children (all girls) to be married before he died. She was married when she was 17 years old.

Sita qualified in fashion design at the Technical Institute in Ranchi, and had been offered a job in Delhi, but her family would not let her go. She now wants to find a job locally. Her husband works in the post office.

Sita enjoyed being part of the MoM-QC project, listening to the information and feeding back about services twice. “It was easy to use and now there are many more projects giving information,” she said.

Sita learned about what services should have been at the hospital during the delivery of her son, Bikky. Many were not, so she gave feedback on lack of quality of care.

A few months ago, when Sita's sister-in-law was about to deliver her child, Sita went with her and her mother-in-law to the local hospital for the delivery. When they arrived, no one was there to attend to them. Another women in pain was not being looked after. Sita and her family decided to leave and the next day went to a private hospital, where they were satisfied with the service.

Sita noted, “We know that it is expensive but life is important and quality is important.”
Findings from WRAI’s earlier research suggested that educating women on their entitlements was an opportunity to test how the MoM-QC model could be used to enhance awareness and change behavior. Messages on quality of care and maternal health entitlements, and feedback survey questions were developed by WRAI and field tested in the community. The prototype was first field tested in two public and one private facility of Ranchi district of Jharkhand, and the dedicated call-in toll free number went live on 23rd November, 2013.

Women would call the dedicated number and disconnect, thus ensuring they were not charged for minutes on the mobile phone. The MoM-QC platform automatically called back the users with a welcome message. The listener was led through a series of options to either learn more information, or provide feedback on their health care experience.

When callers chose to listen to the information channels, they were provided with a menu of options including an educational recording on quality of care, information about the maternal health entitlements like the conditional cash transfer program for women who delivered in government facilities, free ambulance facilities, or audio-dramas illustrating various aspects of quality of care.

Callers who chose to select the feedback channel were guided through different questions which they then could respond to by selecting a number on their phone dial pad. This simple, low-tech initiative leveraged the ease of cell phone use while giving each caller the power to “give voice” and rate the services they received.

The callers were also given an option to record a message. At any time, callers could return to main message page to listen to information, skip and navigate from one channel to the other, or listen to all the channels. The user could end the call anytime during navigation.

Using mobile phones for multiple purposes (such as browsing online and taking pictures) is not currently conventional practice in rural India. A key concept for this project was to transform a device formally used to make and receive calls into a powerful tool for communication. Through a simple automated navigation system, users were able to learn more about important maternal health care and then, armed with new knowledge, provide their own feedback on the services they had received.

Although similar to other review services like Trip Advisor or Amazon Customer Reviews, the MoM-QC model is innovative in that it targets underserved populations. Early findings from this project found that the participants were able to easily adapt their behavior to learn and provide information via their cell phones; the platform could in time facilitate a large scale outreach to rural populations and lead to an accurate database of direct feedback that could be used to address improvements in quality of health care.
The original platform was created to reach out to 494 pregnant women and lactating mothers across 20 villages in Jharkhand.

WRA collaborated with the local government and nonprofit organizations to promote the toll-free number, and due to the resulting interest the final test audience grew to 11,000.

Quality of care is the need of the hour, as well as the first priority of the Health Department.

Mr. Randhir Kumar
State Programme Manager
National Health Mission
Government of Jharkhand
**WRA’S FEEDBACK LOOP**

A growing population of informed women who expect to keep learning about and providing feedback on quality of care issues

24/7 access to free hotline: continuous learning and providing feedback on quality of care

Empowered women who know what to expect and demand higher quality of services

Information continuously fed into government channels, holding them accountable and allowing them to offer improved quality of care

**INCREASED AWARENESS**

- **Awareness of free transportation to and from health facility for delivery**
  - % Increase: 67%
  - Values: 19, 86

- **Awareness of financial incentives for delivery at health facility**
  - % Increase: 46%
  - Values: 30, 76

- **Awareness of free meals available for the mother and her family at the health facility**
  - % Increase: 42%
  - Values: 53, 95

**TY OF CARE IN INDIA**
The Results

MoM-QC's Ability to Educate Women: Awareness of Quality of Care Indicators

After the five-month pilot project, almost all participants had increased knowledge of what constitutes quality care (Figure 1).

Seventy-six percent of women were most likely to consider facility cleanliness as an indicator of quality care (an increase of 14 percentage points).

MoM-QC's Ability to Educate Women: Awareness of Government Services and Entitlements

Awareness of government services for maternal health also increased (Figure 2).

Prior to the launch of the project, 76 percent of women said that they were aware of government programs for pregnant and lactating mothers at baseline. This increased to 98 percent of women by the project’s end.

MoM-QC's Ability to Influence Women: Deciding to Seek a High-Quality Health Facility

After learning about the definition of quality of care and existing options in their community, women in the project were asked if that knowledge would affect future behavior.

Again the ease of use of the mobile phone and the popularity of the interactive voice system proved significant: 83 percent said that the health care ratings would influence their choice when recommending a facility, 77 percent said feedback on quality of care available in a facility would influence their future choice of going to the facility for their next delivery, 87 percent said that the information they received had empowered them to make better decisions for themselves and their family members, and 68 percent felt they were able to better access current health services after being informed of their entitlements via MoM-QC.
Prince’s Mom: Her Brain is Exploding With Information

After delivering her first child, Sunita Devi and her husband were worried: the baby did not seem to be suckling and getting enough to eat. They expressed their concerns to the doctors, but they were discharged from the hospital. The baby died later that night.

Sunita was happy for the opportunity to be a part of the MoM-QC project: “I learned a lot about what to expect. My ‘brain is exploding’ because I now know about so many programs for new mothers and newborns, such as vaccinations. I would like to continue to listen to the information.”

Sunita’s husband was very supportive of the MoM-QC project and together they prepared for her second pregnancy. They learned the baby was in a breach position and so decided to go to a private facility. She delivered a daughter, Prince, by cesarean section, and was allowed to stay at the facility for seven days free of cost.

Sunita and her family feel that learning about different options and available services helped her during this birth, and she wants to tell everyone she knows about the project.
During the pilot study, it was crucial to be able to verify that callers actually understood the questions being asked during the feedback process and were able to provide consistent answers. WRA India randomly selected and manually called back 30 percent of the participants, both in the cohort and non-cohort group. A live operator spoke with the women, validated their quality of care responses, and asked whether anyone had assisted them in giving feedback. A large proportion of the polled cohort users (80 percent) received assistance from community health workers or family members to complete the survey, whereas only 26 percent of the polled non-cohort users received assistance.

In addition, 76 percent of the answers given by the cohort tallied exactly with the answers they gave to a live human operator, and 87 percent of the responses given by the non-cohort group tallied with answers given to the live human operator. Both sets of data scores showed that the non-cohort users are possibly higher skilled than cohort.

The Response to Feedback: Health Facilities and the Local Government

The MoM-QC feedback was well received by the representatives of each participating health care facility, and they all expressed a keen interest to use the feedback to improve and/or upgrade the facilities and services.

The representatives also expressed their desire to receive feedback on the following indicators:

- Antenatal care coverage
- Number of services provided during antenatal care
- Motivation level of service providers
- Who motivated the woman to go for antenatal care services
- Why did the woman choose a certain facility for antenatal care services
- Service provision after hospitalization

The providers considered the MoM-QC model to be useful for receiving feedback from the community. They noted that the model can be used by them for monitoring purposes of both public and private facilities.

They also mentioned inclusion of below indicators in future feedback surveys:

- Counseling facility
- What time the patient was registered and what time the patient left the facility
The MoM-QC pilot project demonstrated that women want information on maternal health and quality of care, and want to share their feedback and experience. Interactive Voice Response proved to be a suitable platform to reach rural, illiterate women, educate them on quality of care and maternal health entitlements, collect their opinions on quality of care, and develop a community quality of care rating for health facilities.

In analyzing the model for feasibility on a long-term, large scale, certain lessons were noted:

**Lesson 1:** Despite socioeconomic, literacy, and connectivity barriers, almost all cohort members were able to use a mobile phone as a learning and feedback tool. This represented a transformational change and women felt empowered after making their voice heard by giving feedback.

**Lesson 2:** A higher percentage of listeners in the non-cohort group provided feedback without assistance, indicating a good chance of getting quality data without the need of face-to-face training. However, some training and orientation may be needed in order to engage a high number of marginalized women with lower literacy and socioeconomic status.

**Lesson 3:** Many families owned a mobile phone without the minimum balance of 1 rupee (< $0.02 USD) on their pre-paid card that they needed to make outgoing calls, even a missed call. In addition, the majority of cohort women did not themselves own a phone and had no access to their family’s phone for most of the day. Nonetheless, women were resourceful and accessed phones of the community health workers, neighbors and friends to make the missed call and participate in the program. This adaptability and willingness to participate shows enormous potential for a sustainable large scale effort.

**Lesson 4:** Health care providers (both public and private) are interested in receiving women’s quality ratings, such as through automated dashboards. Generating and providing real-time data will require additional backend technology refinements, but would allow for continuous quality improvement for providers, and more informed decision making for women. Future testing is needed to determine the most efficient and effective means to encourage providers and health officials to improve care through providing a continuous feedback loop.
The successful pilot of MoM-QC sets the stage for developing robust strategies to scale and sustain the model. The pilot points to the fact that MoM-QC works in informing pregnant women about available health programs and services and educates them about the care they deserve.

What’s particularly exciting is that this platform not only dispenses information, but also engages women in two-way communication – creating an interactive push-pull model. Using crowdsourcing, MoM-QC asks women for feedback on the quality of care they received, pools that information and makes the overall ratings available.

Based on the pilot’s results and the team is continuing to refine and adapt MoM-QC for wider audiences in India and beyond. Currently, a user-centered design technique is being applied to broaden the platform’s appeal and uptake in both rural and urban settings – potentially expanding into online and text formats as well. We believe this interactive push-pull model has the potential to empower women to speak out about the care they receive and help ensure that their voices are heard.

It is imperative to include public and private health facilities. Many women who die are from the lowest economic strata and only have access to public facilities. In contrast, the private sector caters to large number of deliveries without a systematic approach towards Quality of Care. It is therefore, necessary to include both in the next phase of the MoM-QC project.

Providers have shown great interest in the MoM-QC model and understand its potential to improve quality services through a feedback/rating system.

The pilot test was about using interactive voice response technology to educate women on the quality of care they should expect from health providers, inform women about available health programs and services which enable women to anonymously rate the quality of care they received, and empower women to make more informed decisions about their health and health care.

The quality of care feedback thus received from women can then be used systematically to encourage providers and health officials to improve care in response to quality ratings.

This initiative is premised on the understanding that services quality needs to move beyond technical quality to incorporate perspectives of service seekers and to empower women so as to raise the demand for high quality health services.
MoM-QC MODEL: HOW IVR WORKS

1. User calls
2. Missed call
3. IVR calls user back
4. Main message page (“Welcome to Swasthya Vaani…”)
5. User selects feedback
6. User answers questions
7. Feedback complete
8. User selects information
9. User listens to “channels”*
10. Information complete
11. Option to record message
12. Call complete

Channel X: QOC
Channel X: Entitlement
Channel X: Drama

User option to return to main message “Step 4” or go to “Step 11”

User option to return to main message “Step 4” or go to “Step 11”

REFFERENCES


Quality of maternal healthcare in India: Has the National Rural Health Mission made a difference? Available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3484741/
