



## ZMQ-MIRA

One of the most crucial social and health concerns in India is the lack of reproductive rights of women. This can be primarily attributed to lack of maternal and child health communication tools and disconnect with public health services in remote areas of India. This is the main reason behind the high Maternal Mortality Rate (MMR) of 113/100,000 live births and Infant Mortality Rate (IMR) of 33/1,000 live births in India, as per Sample Registration System (SRS) 2016-18 released by Registrar General of India. A substantial number of women are forced to opt for home-based delivery (78.9 per cent, as per NFHS 4) due to lack of access to information and services, putting both mother and child at risk. While globally, as per WHO estimates, IMR stands at 29 deaths per 1000 live births in 2018 and MMR stands at 211 deaths per 100,000 live births in 2017, according to UN inter-agency estimates; the situation in India and other third world countries, as

evident, is worse. In Uganda, as per UNICEF, MMR in 2015 stood at 343 and neonatal mortality was 19 per thousand live births. Afghanistan has one of the highest maternal mortality rates in the world, according to United Nations data. Some 638 women die per 100,000 live births. In 2019, the infant mortality rate in Afghanistan was at about 46.5 deaths per 1,000 live births.

Against this backdrop, ZMQ believes that technology can bring in transformative changes by substantially improving accessibility, affordability and effectiveness of social programs, thus enabling human development. This is especially true today, with the widespread use and availability of mobile networks even in rural and remote areas

## An Introduction

ZMQ is a 'Technology for Development' social enterprise which identifies critical social problems of poor, rural, underprivileged and unreached communities; develops practical technology-linked solutions; implements it on the ground by building a system-changing model by providing timely information to communities and connecting them with sustainable life-saving products and services. ZMQ's methodology to



Using ICT to improve RCMNH+A status of communities at the last mile



solve these social problems is based on a 'system-changing' approach, and works on multiple converging issues like healthcare, education, livelihood and climate change.



One of the innovations - MIRA (Mobile Integrated Resources for All) Channel - launched in 2012, is a maternal and child healthcare system which provides critical information to pregnant women in the villages using mobile phones and connects them with health services to save lives. The channel is to be downloaded on women's mobile phone for independent use or made available through Original Equipment Manufacturers (OEM) for free and through mobile operators for a small fee. MIRA functions as an integrated mobile channel and uses interactive iconic interface 'talking toolkit' designed for millions of semiliterate women:

- MIRA is available on mobile phones of individual women for self-management of health.
- MIRA-PHC is a communication and service delivery platform in synchronization with public health systems which connects Accredited Social Health Activist (ASHAs) and Auxiliary Nurse Midwife (ANMs).

## MIRA as an Integrated Innovation Model

MIRA Channel is an integrated mobile channel for rural women on MCH which provides critical health information on Prenatal Care, Post-Natal Care, Routine Immunization, Family Planning; and connects them with public health services for ANC, Immunization, High Risk Pregnancy Consultations, and Institutional Deliveries. MIRA has 3 key innovations:

**Innovation in Health Communication:** It makes MIRA a 'Talking Toolkit' with iconic graphics, animations and localized audio for millions of semi-literate and illiterate women for easy understanding.

**Innovation in Health Tracking:** MIRA has built-in progress tracking tools such as trackers, calculators and analyzers such as Pregnancy week-by-week tracker, ANC calculator, Immunization calculator, Postnatal & Newborn progress tracker, menstrual cycle calculator and High Risk Pregnancy indicator (Analyzer).

**Innovation in Service Delivery:** MIRA is integrated with last layer of public health service delivery system for timely delivery of health services like ANC check-ups, Immunization, delivery of IFA tablets, High Risk Pregnancy Care, Institutional delivery, Postnatal Care, Neonatal Care and other Emergency Services. It identifies High Risk Pregnancies (HRPs) early and connects women with public health system to take timely action thus Saving lives.

**Implementation process** - For implementing the MIRA channel on ground, the first step is to enroll 25-30 community health workers with thorough knowledge of the village and the community. One health worker is assigned per village, in accordance with WHO standards, where each village has an average population of 1000-2000 (200-250 families on an average). A similar model is followed in other project areas such as Africa and Afghanistan. The community helper looks after the village holistically in terms of all aspects such as MCH, pneumonia, diarrhea, tuberculosis, immunization, etc.

In case the community health worker is overloaded, she is asked to involve a shadow worker, like a sister or a friend, to handle the MIRA channel. Such shadow workers employed are generally from the younger population of the village who can use mobile phones and would be able to take care of the digital work involved. The first step in the process is the household registration, where the worker maps the entire village, enrolling all community members and collating all the details about each member - pregnant women, adolescent girls, and children needing immunization are all mapped and the information is fed into the system. Thereafter, the health worker registers all the pregnant women and disseminates the necessary information, complete with regular follow-ups. The objective is to cover 100 per cent of the village.



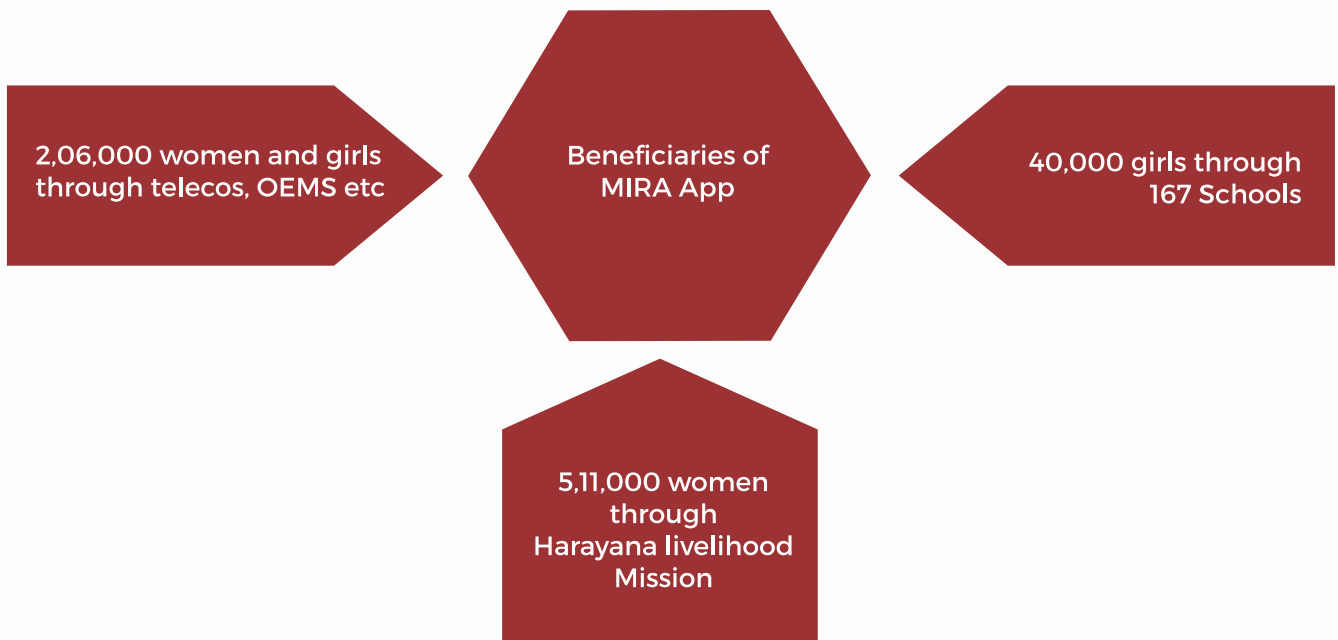
## MA Grant

Millennium Alliance grant (Round I) was awarded to ZMQ Development for its innovative MIRA channel in 2013 to support the implementation of MIRA channel in Mewat region of Haryana. The MA support helped in building and fine-tuning the MIRA model.

In 2018, ZMQ received Round II MA funding for a period of three years for adapting and piloting MIRA in Uganda and Afghanistan. With MA support, ZMQ launched a pilot in one district each in each of the two countries, both of which presented interesting and challenging geographies.

## Reach

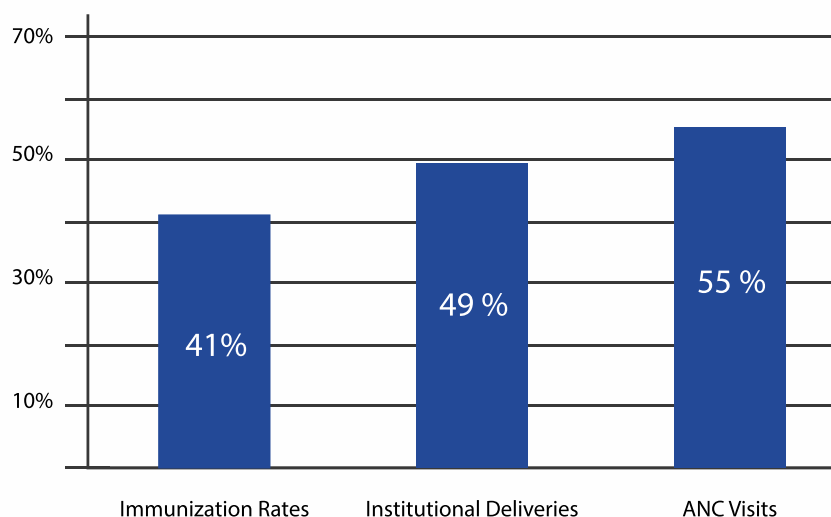
In Mewat district of Haryana, MIRA has impacted the lives of over 20,00,000 women and children. There exists a network of 100 MIRA workers in this region, who are spread over 128 villages, and cover almost 2,44,000 people. In addition to this, it has also been rolled out in collaboration with SHG federations; through the Haryana Livelihood Mission, and has reached 5,11,000 women. The MIRA app was also distributed through telcos, re-charge kiosks, OEMs and CR stations to 206,000 women and girls. Through 167 schools, the app has reached almost 40,000 girls.



The MIRA project currently employs a total of 160 staff on ground for smooth implementation of the project. Out of these 160, there are 40 women employed in India and 40 in Uganda. In Afghanistan, the project employs 40 women and 40 men as well, as the cultural conditions necessitate double force, a man with every woman.

## Impact

The widespread reach of the MIRA has had significant impact on the lives of the beneficiaries in its area of operation. The Mewat region of Haryana has seen a steep rise in many important maternal and child health indicators. **There has been an increase of 55 per cent in Ante-Natal Care (ANC) visits; institutional deliveries have increased by 49 per cent; and immunization rates have seen an increase of 41 per cent.** MIRA PHC connect model has been implemented in Haryana state with **247 ASHAs and 50 ANMs reaching to 269,000 women and children. Prompt action has been taken by ANMs in 84 per cent of high-risk pregnancy queries raised by ASHAs.**



Through its awareness generation as well as on-going support to women and girls in the community, MIRA has been empowering them and allowing them to live a life of improved dignity, in addition to connecting them with essential health services. In recognition of its work, in addition to the MA award, ZMQ has also won the Vodafone M4G Awards in 2014.

## Other services by ZMQ

Another program, Freedom TB program is mobile phone-based reporting of TB patients where the patients report their video adherence to TB treatment using mobile phones from their homes instead of going to DOTS centers. Another innovation is the use of SBCC games and stories to create social and behavior change among the communities on health and education using mobile games and digital stories.

## Alignment with Government Policies

Improving RCMNH+A indicators and reducing maternal and child mortality are amongst the most important goals of the National Development Agenda of the Government of India (GoI). Significant strategic investments are being made by GoI to achieve these goals and various programs have been rolled-out at the national and state level for the said purpose. The MIRA app aligns with this agenda of the government, and as discussed, has helped significantly in improving the indicators in its area of implementation. The MIRA workers have helped take some load off the overworked ASHA workers. The real-time data tracking and timely action has helped save many lives, especially in cases of high-risk pregnancies

## Partnership

In order to ensure smooth implementation of its program at the community level, ZMQ has partnered with many grass roots organizations. At the village level, it is ensured that access to the MIRA app is provided to local NGOs and entrepreneurs. The technology is handed over free of cost to any NGO/CBO that wants to use the technology for the welfare of the community. Through this, ZMQ ensures that the app is used for the greater good and does not become just a business opportunity for the organization.

ZMQ partners with the government too on the same model, with no monetary transactions or gains involved. It has a no-cost partnership with the government, with ZMQ providing the technology and the government providing access to the system at the grass root level.

## Scalability and Replicability

The MIRA channel has been successfully replicated in Uganda and Afghanistan. The Uganda MIRA project is being implemented in Jinja and Iganga districts in local languages – Lusoga and Luganda (Eastern Uganda). After the success of the pilot, the Government of Uganda has requested ZMQ to scale the program to three more districts in Western Uganda. Success of the program in the new districts might lead to its national adoption by Ministry of Health, Uganda.



One year after piloting the project successfully in Jinja district of Uganda, it was found that during that one year, 51 infant girls were named Mira after the intervention, which speaks volumes about the impact of the channel on the lives of the beneficiaries.

The Afghanistan MIRA project is being implemented in the Herat province in the western zone of Afghanistan (near the Iran border) in Dari language, and was later scaled to Pashto district of Afghanistan. The initial success can be gauged by the fact that there is now a demand by the local partner to replicate the model in the other Pashto speaking areas, especially Kabul and Ghazni. Efforts are being made to reach out to partners to scale the program in those regions. Afghan Currently, ZMQ is implementing the MIRA project in Afghanistan in Partnership with Afghan Institute of Learning (AIL). It is being spearheaded by Dr. Sakina Yakubi, a senior Ashoka fellow, who is one of the leaders in Afghanistan for women empowerment and maternal and child health.

MIRA has reached out to almost 266,000 beneficiaries in Uganda and almost 143,000 beneficiaries in Afghanistan indirectly. 5900 women in Uganda and 3700 in Afghanistan have successfully completed their pregnancies through MIRA. Almost 8400 children have been covered for immunization and the program has reached out to 12,000 girls in Uganda. In Afghanistan, the number of children covered for immunization is 5400 and the number of adolescent girls benefitted is 7000. In Uganda, ZMQ works in partnership with the Ugandan Government. Starting with an initial one district, it has now scaled-up to three districts. The MIRA project in Uganda is now on the verge of integrating with the government. The Ministry of Health's MCH Division wants to integrate MIRA channel as part of Uganda's National Policy. Once integrated, the MIRA project will get permission to expand to 5-10 new districts. The partnership with the Ugandan Government will be one where the government will provide software and technology and ZMQ will be the operations and maintenance partners.



### Innovative Solutions

When ZMQ piloted the MIRA channel in Afghanistan, it came across a unique problem in the region – the Afghan women were not allowed to have their own phones. This presented a barrier in ensuring that pregnant women have access to the required ante-natal and post-natal care through the MIRA channel. Unique problems call for unique solutions – ZMQ countered the situation by providing the women with an internet-based toy, a part of ZMQ's progressive innovation. The toy is fitted with processors which have all pertinent information and alerts, with all messages embedded inside it. They are also provided with a locket embedded with an RFID chip, which gives keeps track of all information and can be updated automatically.

#### Uganda

- 2,66,000 beneficiaries
- 5,900 completed pregnancies
- 8,400 children immunized and reached out to 12,000 girls

#### Afghanistan

- 1,43,000 beneficiaries
- 3,700 completed pregnancies
- 5,400 children immunized and reached out to 7,000 girls



### Uganda

- Institutional deliveries by 46%
- ANC Visits by 44%
- Immunization rates by 11%

### Afghanistan

- Institutional delivers by 54%
- ANC Visits by 56%
- Immunization rates by 11%

### Uganda

- No maternal death
- One infant death

### Afghanistan

- One maternal death
- Six infant deaths

## MIRA as a last-mile Health System in Rural Areas, especially hard-to-reach Communities

Besides the use of technology, one of the successes of MIRA Channel has been its home based visits which enabled to reach every pregnant woman and every child in the age of 0-5 years for immunization in the village. This implementation model has been so robust that MIRA model is being used by multiple projects like Pneumonia, Diarrhea, Immunization, Polio and even Livelihood to reach out to last-mile communities. It has been used by Philips, CARE, TDH, Save The Children, TNO, Heifer to name a few and has been replicated in districts like Tonk in Rajasthan, Bahraich in UP, 24 South Parganas in West Bengal, Mayurbhanj in Odisha and Adilabad in Telangana. The model has also been used to adolescent girls for programs on Sexual and Reproductive Health. MIRA Channel has emerged as a successful last-mile health system especially in hard-to-reach communities.



In a small village called Dehmiri of Herat Province, Afghanistan 18 years old Forozaan was married off to Aziz Ahmad at a young age & become pregnant soon after. Forozaan's mother died while delivering her, which made her, which made her vulnerable & unaware of the various aspects of maternity & child birth. MIRA worker Sayeda held the hand of this young girl scared of becoming a mother. Sayeda registered Forozaan on the MIRA platform and began visiting her on a weekly basis. Forozaan lost her mother due to complications during pregnancy & home based delivery but when she became pregnant, MIRA helped & provided the requisite information around pregnancy management & importance of institutional delivery and Post-Natal care. Well equipped with all the information Forozaan delivered a healthy baby girl Adiba at the local health clinic. Now she actively interacts with the MIRA worker & ensures timely immunization of Adiba. On asking about her motivation Forozaan said- 'I Felt confident as there was someone advising me throughout my pregnancy just like my mother would have.'



Mutesi Rita, a 26 year old mother of 2 children from Nile Village in Jina was registered with the MIRA programme in the MIRA programme in the 8th week of her third pregnancy. In her earlier pregnancies, she used to visit the center at around 7th month of her pregnancy and had the same plan this time also. As the area VHT started visiting her on a weekly basis providing her critical information, she started realizing the importance of diet and medical care which was amiss in her previous pregnancies. At the 13th week, she started experiencing pain and bleeding and as the VHT visited and screened her by the VHT & the midwife labelled as a High-Risk pregnancy. Fortunately, upon referral the midwife immediately took care of the possible complication and the risk was averted. Now she religiously visits the health center for the check-ups and follows all the advice provided to her by the VHT & the midwife.

'If the MIRA VHT wouldn't have screened & Referred me on time, my pregnancy would be lost but fortunately the miscarriage was arrested. It Was then that i deeply reflected on my actions during the previous pregnancy and realized that had the same happened to me in the past, something worse could have happened to me. From then, Iam now very alert on danger signs, i rush to the health centre every time i feel unwell and unlike the previous pregnancies, i am now 36 weeks pregnant but have already made 4 ANC visits and plan to deliver in a health center'

## The Way Forward

MIRA aims to reach another two million beneficiaries in the next two years. The successful implementation of MIRA in Mewat region has led to plans to scale-up the program to other states like Maharashtra, UP, Bihar, Manipur, Gujarat, Rajasthan, Orissa and West Bengal. At the global level, MIRA is also exploring partnerships in Senegal and Sierra Leone in West Africa; Cambodia and Laos in South East Asia; and Haiti in the Caribbean. Some of the new adaptations as a new way forward are:

- Integrating Value Added Services Integration: Digital Stories, Games, Training & Capacity tools and (Philips)
- Extending to Hard-to-Reach Communities: Distributing IoT based disconnected Toys and BOTS (using this in Afghanistan)
- Building Diagnostics & Care Model: Diagnostics & Care at the door-steps (Ghana)
- Extending Products/Services Channel: Sale of critical products like Sanitary Pads, Health Kits etc.  
Emerging Technologies: Using Artificial Intelligence in MIRA Channel

ZMQ does not wish to turn their MIRA application into a business model, and thus relies on partnerships and funding to ensure their sustainability. These have also come in the form of awards, recognitions, and fellowships, which have been mentioned below.

## Awards and Fellowships

ZMQ-MIRA, by virtue of its on-ground impact on the last mile beneficiary, has received many awards and fellowships. It has been-

- Winner of "Quick Fire Challenge" instituted by Johnson & Johnson Innovation on Drug-Resistant Tuberculosis Lifeline in India in 2020: "Patient Active Compliance & Treatment Solution for DR-TB Patient".
- GAVI's Infuse Pacesetter Winner 2019 for using Transgender as Changemakers to create awareness on child immunization using digital story telling using MIRA Channel.
- Winner of the TB Reach Wave 7 Award instituted by United Nations UNOPS and Stop TB Partnership for integrated approach to eliminate tuberculosis in women and girls, September 2019.
- Selected as lead agency and won 3 years grant to implement ZMQ development solutions - MIRA and FTB in Franco-phone countries of West Africa through ZMQ Global awarded by Montreal International and Quebec Government in August 2019.
- Selected as one of the four Collaborative Action Fellows under the AHA Group of 14 Fellows by Ashoka (USA) and Philips Foundation (Eindhoven) in Netherland in March 2019: "Replicating MIRA model and extending its reach for Child Pneumonia and Diarrhea in India and Uganda".
- Finalist of "Aarohan Awards" by Infosys Foundation in Bangalore in 2019.
- Winner of "Grand Challenges in Tuberculosis Control" Call 3-E instituted by IKP, DFID and Bill & Melinda Gates Foundation (BMGF) for scaling up to Adoption of Innovation in Uganda in 2018: "Mobile Phone based Active Compliance System for TB treatment in Uganda, Africa".
- Winner of 'USAID & MSD for Mothers Award' as a Leading Social Entrepreneurs: For Maternal & Child Health using Digital Technologies instituted by USAID, 2018.
- Winner of Changemaker Awards of India –Changemaker Digital Transformation: Instituted by Businessline Hindu Newspaper, 2018.
- Ashoka Globalizer-III 2018 Fellow & AHA Fellow, Amsterdam, Netherland: "MIRA as one of the most impactful strategy for Maternal & Child Health and World's most exciting Social Innovation".
- Winner of "UNESCO-Pearson Initiative for Digital Literacy 2017": "MIRA Channel as one of the most impactful digital strategy to tackle Maternal and Child Health globally".
- Winner of "Global South eHealth Observatory (ODESS) Award 2017" instituted by Fondation Pierre Fabre, France: MIRA as a Global Strategy to tackle Maternal and Child Health in the developing countries.
- Finalist of "India Innovation Growth Programme 2.0" in 2017 instituted by Department of Science & Technology, Government of India, Lockheed Martin, Tata Trust and Indian Institute of Management Ahmedabad.
- Winner of "Grand Challenges in Tuberculosis Control" Call 3 instituted by IKP, USAID and Bill & Melinda Gates Foundation (BMGF) for scaling up of Innovation in Uganda in 2016: Mobile Phone based Active Compliance System for TB treatment in Uganda, Africa.
- Finalist Social Entrepreneur of the Year India 2016 instituted by Schwab Foundation and World Economic Forum, Geneva, Switzerland.
- Winner of "Grand Challenges in Tuberculosis Control" Call 3 instituted by IKP, USAID and Bill & Melinda Gates Foundation (BMGF) for scaling up of Innovation in Uganda in 2016: Mobile Phone based Active Compliance System for TB treatment in Uganda, Africa.
- Winner of Business Action on Health Award 2015 for "Innovation/Technology to Improve Health" instituted by Global Health Council and CBC Health New York: "ZMQ's MIRA Channel".
- Winner of "Grand Challenges in Tuberculosis Control" Phase II instituted by IKP, USAID and Bill & Melinda Gates Foundation (BMGF) for scaling up in 2015: "Mobile Phone based Active Compliance System for TB treatment in Mewat in India.
- Winner of "Grand Challenges in Tuberculosis Control" Phase I instituted by IKP, USAID and Bill & Melinda Gates Foundation (BMGF) for pilot testing in 2014: "Mobile Phone based Active Compliance System for TB treatment in rural areas as No.1 mHealth Solution in India.
- Yale School of Management's Global Social Entrepreneurship Fellow 2013-14, New Haven, USA: Best 5 Social Enterprises.
- Winner of "Mobile for Good" Award 2013 by Vodafone Foundation and DEF: "Women Mobile Lifeline Channel" as No.1 mHealth Solution in India.