An App and Program That Saves Lives and Is As Cost Effective As Vaccines

PRESS BRIEF

Uttar Pradesh, one of the largest and most populous states in India, where even basic health care for mothers and children is often inaccessible, has some of the highest numbers of maternal and child deaths. In Kaushambi District, where this program operates, mothers and infants die at a rate more than double the national average.

In 2011, Catholic Relief Services (CRS) began working in Kaushambi District with the local team of Accredited Social Health Activists. Better known as ASHAs, India's government health system introduced this cadre of female community health workers to generate demand for health services, and to serve as a platform for information and a link to the formal health system. Through the Reducing Maternal and Newborn Deaths (ReMiND) program, CRS introduced a mobile health (mHealth) application using the CommCare platform developed by Dimagi Inc., a social enterprise company. ASHAs use the application on smartphones to improve their performance, and thereby increase use of health services by women.

Photo Credit: Jennifer Hardy/CRS

In 2015, the United States Agency for International Development (USAID) funded an independent team from the Post Graduate Institute for Medical Education and Research in Chandigarh, led by Dr. Shankar Prinja, to analyze the cost effectiveness of the program. The study evaluated how effective and efficient the ReMiND program is in saving women's and children's lives.

Analyzing the costs of the program since its inception in 2011, the study concluded that the interventions introduced by ReMiND in Uttar Pradesh were **extremely cost effective** and recommended exploring opportunities to increase the project's scale. The study found that **the ReMiND mHealth intervention is as cost effective as Vitamin A and zinc fortification, measles immunization, pneumonia case management and oral rehydration therapy.** Within India, the intervention was as cost effective as vaccination against measles and Hepatitis B. It is **more cost effective than vaccines against cholera, typhoid and rotavirus.** The study projected that implementing the program for 10 years across Uttar Pradesh would **prevent 16,918 maternal deaths and 119,646 neonatal deaths.** Articles with findings from the study are being published in peer-reviewed journals.

CRS in India: By the Numbers

- Since 1946, CRS has worked in 20 states and two union territories in India. CRS' current development programs are in seven states and support emergency programs in other states as needed.
- In 2016, CRS reached more than 1 million beneficiaries in India.
- Currently, CRS implements 24 programs in India.

CRS CATHOLIC RELIEF SERVICES faith. action. results.

RESEARCH OBJECTIVE

This study measured ReMiND program costs to prevent each maternal and infant death, and how much it cost to prevent a life affected by disability. The impact of the program was evaluated by comparison to routine health services that do not use the mHealth intervention.

Measures

Cost effectiveness analysis involves a measurement of both costs and impacts.

Costs	Impacts
Implementation costs, and costs associated to changes in service utilization.	Maternal deaths prevented
	Neonatal deaths prevented
	Life Years Gained
	Disability Affected Life Years avoided

KEY FINDINGS

How Much Will ReMiND Change Health Care Costs?

Less would be spent on curative care with the mHealth app intervention compared to the existing system, which does not use the intervention. This is a result of a reduction in illness during pregnancy or after child birth, and of an increase in preventive interventions used by pregnant women instructed by better-

Improved Health Consequences of the ReMiND App

As a result of the ReMiND mHealth intervention, researchers determined health improvements across pregnant women, new mothers and infants in the entire state of Uttar Pradesh, as compared to the control scenario, in which no intervention was used. They determined the following:

- A reduction of 16,918 maternal and 119,646 neonatal deaths during the 10 year period
- A 7.6 percent reduction in maternal illness during pregnancy
- 4.3 percent fewer cases of neonatal illness
- An increase in 2,209,837 life years would be accrued across the program's beneficiaries: women in their child bearing years, and their children across Uttar Pradesh, through the 10 year period
- A reduction of 3,971,317 DALYs within the same population and time period

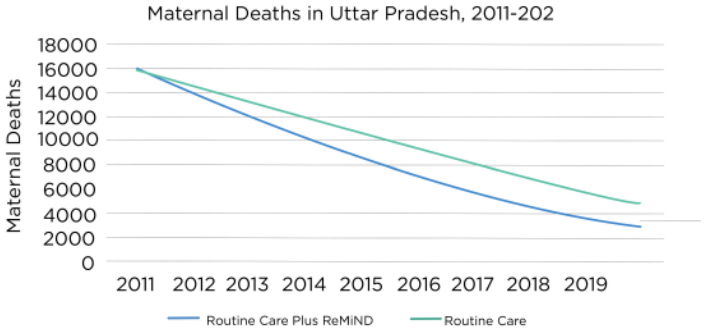
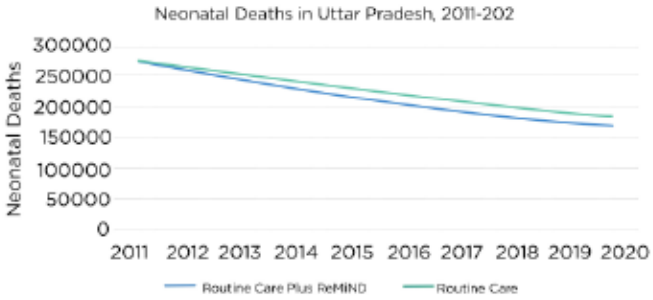


Figure 5. Reductions in Maternal (a) and Neonatal Deaths (b) from 2011-2020.



Cost Effectiveness

The researchers found the ReMiND mHealth app intervention to be very cost effective. The intervention incurs an incremental cost of $96, or 6078 Indian rupees, per DALY averted. The cost is $2,792, or 176,752 Indian rupees, per death averted.

The World Health Organization considers interventions in low and middle income countries to be "very cost effective" if they have an incremental cost per DALY averted that is less than the per capita GDP. Interventions that are three times the GDP per capita are considered "cost effective." These parameters are crucial to support the scale up of effective programs when working with local authorities.

WHAT DO THESE NUMBERS MEAN?

Researchers compared the findings of this study to a number of key public health interventions, for which the cost effectiveness has been estimated. **The study found that ReMiND interventions are as cost effective as Vitamin A and zinc fortification, measles immunization, pneumonia case management and oral rehydration therapy. Within India, the intervention is as cost effective as vaccination against measles and Hepatitis B. It is even more cost effective than vaccines against cholera, typhoid and rotavirus.**

It will cost the Uttar Pradesh health system **$96 to prevent a year lived with disability** and **$2792 for every life saved.**

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