Scaling the Maternal and Newborn Survival Initiative (MANSI):
Rural India

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ABSTRACT

The infant mortality rate (IMR) and maternal mortality ratio (MMR) are unacceptably high in many parts of rural India. This article focuses on a system analysis approach to the best practices for scaling and replicating of maternal and newborn survival initiative (MANSI), a field-tested pilot program for addressing high IMRs and MMRs. A system dynamics model of the village birthing system is used to understand the resources needed for the viability of scaling or replication, is constructed and incorporated in the analysis. The MANSI program is a public and private partnership between a few key players. Implemented in the Seraikela area of India's Jharkhand state, the program has achieved a 32.7% reduction in neonatal mortality, a 26.5% reduction in IMR, and a 50% increase in hospital births, which tend to have better health outcomes for women and newborns. The authors conclude with a discussion of the prospects for and difficulties of replicating MANSI in other resource-constrained areas, not only in India but in other developing countries as well.

KEYWORDS

Child Health, Childcare, Healthcare, India, Infant Health, Infant Mortality (IMR), Maternal Health, Maternal Mortality (MMR), Postnatal Care, Prenatal Care, Rural India, System Dynamics

INTRODUCTION

IMR (measured per 1000 live births) and MMR (the ratio of the number of maternal deaths during a given time period per 100,000 live births during the same time-period) are widely considered as key indicators of health services, nutrition, poverty and education levels in a country or region. India, despite being one of the fastest growing economies, still lags behind the global IMR and MMR levels. The World Economic Forum ranks India, as among the lowest in gender equality in health and survival in 2014, 141 in a list of 142 countries, only above Armenia ("Global Gender Gap Report 2014," n.d.). India accounts for the largest number of maternal deaths in the world, an estimated 70,000 deaths of new mothers in each year. Of these, almost half are caused by hemorrhage or excessive bleeding (30%) and sepsis or infection (16%), which can be reduced through effective obstetric primary care facilities ("Mother and child," n.d.). Despite the Janani Suraksha Yojna (JSY) program, a scheme started by the Indian government to boost institutional deliveries, just 47% of the deliveries are in hospitals or other healthcare facilities. More than half still take place at home, of which only about 5% are assisted by skilled health personnel. Impediments to health care are directly attributable to the low status of women in society. There is inadequate female knowledge or autonomy to maintain good health and reproductive control. Marriage of young girls and nonuse of contraception further

cause gender-specific health vulnerabilities like maternal morbidity and mortality. India has a low life expectancy (68 years in India vs. 78 years in the US), high maternal mortality ratios (~174 per 100,000 in India vs. ~28 per 100,000 in the US) and high infant mortality rates (36 per 1,000 in India vs. 6 per 1,000 in the US) in 2015 (World Health Organization, 2015). In the Seraikela area of Jharkhand, India (see Figure 1), most babies are born in the family's cattle shed. An elder typically cuts the infant's umbilical cord with a sickle that has not been sterilized. The new mother receives no food for three to five days after delivery (three days for a baby boy, five for a girl). The newborn is bathed but not swaddled. He or she is fed honey or goat's milk but not breast milk for the first few days. Initiation of breastfeeding is delayed after birth because of the belief that a mother's milk is "not ready" until two to three days postpartum (Bandyopadhyay, 2009).

These practices show that maternal and infant healthcare in rural parts of India comes after food, livestock's well-being, and religious practices in terms of priority. Few people in such places are aware of the importance of antenatal as well as postnatal care. When it comes to antenatal care, awareness centers on following traditional or superstitious ways. For example, pregnant women are not allowed to eat eggs or take supplements because people fear that such new practices could cause a miscarriage or lead to a birth weight too high for safe delivery. While such worries are understandable, these and other practices ultimately endanger the mother's and baby's health, by making both vulnerable to anemia, sepsis, and pneumonia.

For a maternal and child health program to be effective, it must lower the IMR and MMR. Understanding local cultural practices and beliefs can help program teams design programs that have a better chance of achieving those objectives. A systems analysis of the MANSI system to evaluate best practices of lowering IMR and MMR can be invaluable in scaling or replicating this program in areas where IMR and MMR are very high.

Many Maternal and Child Health (MCH) programs aimed at improving IMR and MMR have been implemented globally. The Literature review section of this paper discusses the MCH programs published in recent years to compare and contrast them and to understand their successes and shortcomings. MANSI as a system segment analyzes the MANSI program in detail from a public

Figure 1. The Seraikela area
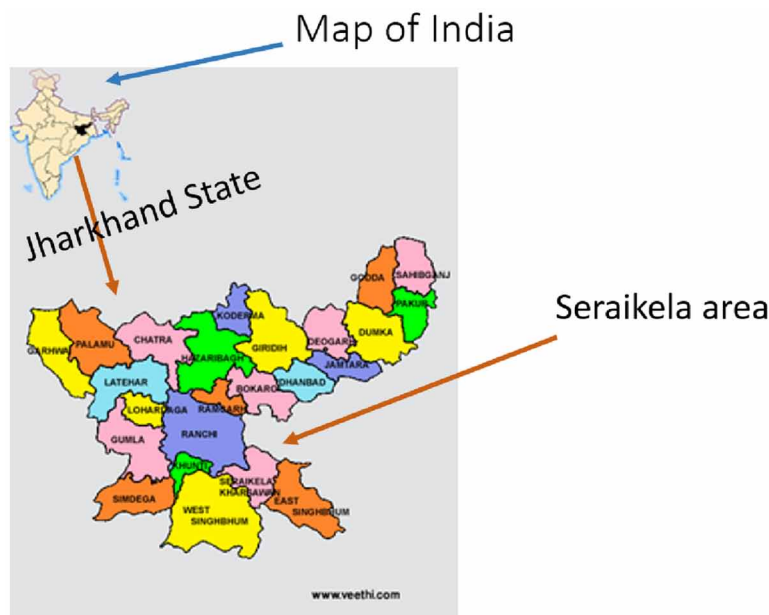
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