

Introduction

Reducing Maternal and Perinatal Mortality Through a Community Collaborative Approach: Introduction to a Special Issue on the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP)

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BACKGROUND

One of the most intractable public health problems in Africa today is the high mortality rates for pregnant women and their newborns, and Ethiopia is among the countries most affected. The government of Ethiopia has set improvement in these mortality rates as a priority public health goal. Among other policies, the government of Ethiopia has recently established a policy of zero tolerance for home births, which should greatly reduce mortality over the long term. Yet universal facility births attended by skilled providers will not occur for some time in Ethiopia because of resource scarcity. For now, Ethiopian women will continue to give birth at home as they have done traditionally. Facing this problem requires the adoption of interim policies and programs to reduce mortality before the goal of 100% facility births can be realized. This special supplement of the *Journal of Midwifery & Women's Health* presents the results of a highly promising 3-year pilot program that addresses this issue at the community level.

Multiple sources estimate the maternal mortality ratio (number of maternal deaths per 100,000 live births) in Ethiopia to be above 650.¹⁻⁶ Among Ethiopia's expected 2.7 million pregnancies per year, there may be as many as 18,000 maternal deaths. This places Ethiopia among the top 3 sub-Saharan African countries for number of maternal deaths, along with Nigeria and the Democratic Republic of the Congo.¹

While Ethiopia recently proclaimed having achieved the Millennium Development Goal 4 target of two-thirds reduction in under-5 mortality between 1990 and 2015, the reduction is mainly among children aged one to 59 months old. Neonatal mortality, which is deaths among newborns in the first month of life, has declined only modestly, from 49 to 39 to 37 deaths per 1000 live births in 2000, 2005, and 2011, respectively.⁴ Neonatal deaths now account for 63% of all infant deaths and 42% of all under-5 deaths.

Behind these high mortality numbers lie the problems of access, poor use of maternal health services, and wide equity disparities in their use (eg, urban vs rural, socioeconomic, or wealth quintiles). Nationally, only 34% of women receive any antenatal care from a trained health professional. Only 10%

of births occur with a trained provider, 10% of births occur in a facility, and 1.5% of births are cesareans. Women prefer home births, stating that the use of a facility for birth is not necessary (61%) or customary (30%), transport is not available or the distance is too far (14%), and the cost is too much (2.2%).¹ One promising light is that the use of modern contraceptives, an important contributor to reduction in mortality, has recently risen from 14% in 2005⁵ to 27% in 2011.¹

Changing the dynamics behind these percentages is not easy. With a population of 85 million and a total fertility rate of 4.8 children per woman (5.5 in rural areas), Ethiopia is one of the least urbanized countries in the world. Only 16% of the population lives in urban areas.⁴ Geographically, Ethiopia ranges from highlands with peaks of 4500 meters above sea level to the Afar Depression, 110 meters below sea level.⁷ A mosaic of many cultures, Ethiopia is home to more than 80 ethnic groups that vary in population size from more than 26 million people to fewer than 100,⁸ and more than 80 different languages are spoken.⁹

To address this challenging environment, the Ethiopian government established the Health Sector Development Program (HSDP),² a 20-year health development strategy implemented through 4 consecutive 5-year investment programs, beginning in 1996. The core elements of the HSDP include: democratization and decentralization of the health care system, development of the preventive and curative components of health care, ensuring accessibility of health care for all segments of the population, and promotion of private sector and nongovernmental organization participation in the health sector. Maternal and newborn care is highlighted, along with child health and reduction of infectious diseases including HIV/AIDS, malaria, and tuberculosis.

Grounding this development strategy is the Health Extension Program implemented in 2003 as the primary vehicle for prevention, health promotion, behavioral change communication, and basic curative care. Since then, more than 34,000 government-salaried, predominantly female, health extension workers have been hired and trained. Two health extension workers are assigned to a health post, where together they serve a *kebele*, the smallest administrative unit with about 5,000 people. The majority of their time is spent on outreach activities such as conducting household visits; educating families to adopt a healthy lifestyle, especially improved hygiene and sanitation; serving as "model families" in their neighborhood; and organizing communities to participate in the

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expansion of the Health Extension Program's services. A network of volunteers, drawn from model family households, supports the health extension workers by transmitting essential health messages to the community.⁸

More recently, the government of Ethiopia initiated the Health Development Army, designating one individual (preferably a woman) to assist with discussions and oversight of every 5 households throughout the country. The village-level Health Development Army is the vehicle not only to improve identification and location of pregnant women, but also to encourage pregnant women to use facilities for birth. The Health Development Army continues up the hierarchy of health care. Health facilities are directed by an army head, with departments (such as the labor and delivery department) also led by an army team, which assesses performance and discusses how to overcome performance gaps. Above the facility level, heads of *woredas* (districts), zones, and regions become army heads. Simultaneously, the federal government has mandated that all primary health care costs for maternal care be alleviated. This may include hospital costs, depending on the region.

These recent government efforts were initiated in recognition of the continuing stagnation in maternal and newborn mortality in the country. Reducing maternal and newborn mortality is both a priority public health goal and a political issue. It is discussed at the parliamentary level, and regional parliamentarians must report on their region's performance.

Increasing the proportion of births that occur in a facility and are attended by a skilled provider remains a challenge. A number of health care cadres are engaged in maternal health care in the public sector: midwives, nurses, health officers, integrated emergency surgical officers, general practitioners, obstetricians, anesthetists, and anesthetist practitioners (trained nurses). Specialists are very few in number (< 200 in the entire country) and located primarily at district and referral hospital levels in urban areas. The other health providers are at primary health care units in rural settings, where women may give birth. There is approximately one of these units per 25,000 people. Ethiopia currently has approximately one midwife per 1000 pregnant women, whereas the World Health Organization standard is one for every 175 births.¹⁰

This is the milieu in which the Maternal and Newborn Health in Ethiopia Partnership (MaNHEP) initiative began, between deployment of the health extension workers and creation of the Health Development Army working at community level. With the network of health extension workers, Health Development Army workers, and model families, the MaNHEP team employed community-based strategies known to be effective to reach families and improve antenatal, childbirth, and newborn health care practices.^{11,12} Such strategies are necessary for Ethiopia because of gaps in skilled providers and facilities, which cannot be filled quickly.

THE MATERNAL AND NEWBORN HEALTH IN ETHIOPIA PARTNERSHIP

MaNHEP was a 3.5-year (November 2009–May 2013) learning project funded by the Bill and Melinda Gates Foundation.¹³ The project's goal was to demonstrate a community-oriented model of maternal and newborn health care and position it for scale-up. The project operated under

the leadership of the Ethiopian Federal Ministry of Health and 2 regional health bureaus and was aligned with key national policies. MaNHEP complemented and strengthened the Health Extension Program by ensuring the delivery of a core package of maternal and newborn health care to achieve Millennium Development Goals 4 and 5 to reduce child and maternal mortality. The focus was on the time period surrounding birth, when risk of death of both the mother and newborn is the greatest. MaNHEP implementation was led by Emory University, in collaboration with JSI Research & Training Institute, Inc; University Research Co., LLC; and Addis Ababa University. Implementation took place in 6 *woredas* in the Amhara and Oromiya regions, which had an overall population of about 350,000 residing in 51 *kebeles* and about 12,000 births per year.

From the perspective of maternal and newborn health care, the Amhara and Oromiya regions—like much of Ethiopia—are characterized by rural residence, limited access to health services, and preference for home birth. MaNHEP's theory of action (Figure 1) proposed that community maternal and newborn health (CMNH) care during birth and the early postnatal period would be improved through more, better, and more equitable interaction between frontline health workers and childbearing women and their families—and that this would lead to reductions in maternal and perinatal (fetal and neonatal) death.

MaNHEP set 3 objectives to shape health-care supply and demand and to redesign care processes during birth and the early postnatal period: 1) improve capacity and performance of the team of frontline health workers to provide focused maternal and newborn health care; 2) increase demand for focused maternal and newborn health care and improve self-care behaviors; and 3) develop and demonstrate the effectiveness of lead *woredas* to improve maternal and newborn health care and services (Figure 2). Lead *woredas* are districts that are both committed to and able to continuously improve maternal and newborn health care and service delivery.

The MaNHEP intervention model involved the entire community in the endeavor to improve survival during and following childbirth for both mothers and newborns. It was comprised of maternal and newborn health training of frontline health workers, pregnant women, and family caregivers; behavior change communications; and collaborative improvement. This was one of the first applications of the collaborative improvement approach to maternal and newborn health care and service delivery at the community level. Collaborative improvement is a platform for multiple cross-representative teams with common improvement aims to learn from one another, spreading successful interventions and speeding up improvement across all sites.¹⁴ This model is adaptable and potentially scalable at a low cost. These important aspects make the model a relevant interim strategy during the transition to skilled care for all mothers and newborns.

ARTICLES IN THIS SPECIAL ISSUE

This special issue of the *Journal of Midwifery & Women's Health* presents the results of MaNHEP's highly promising 3-year pilot program. The first article in this special issue by Sibley et al¹⁵ describes the extent to which the MaNHEP model met overall project objectives.

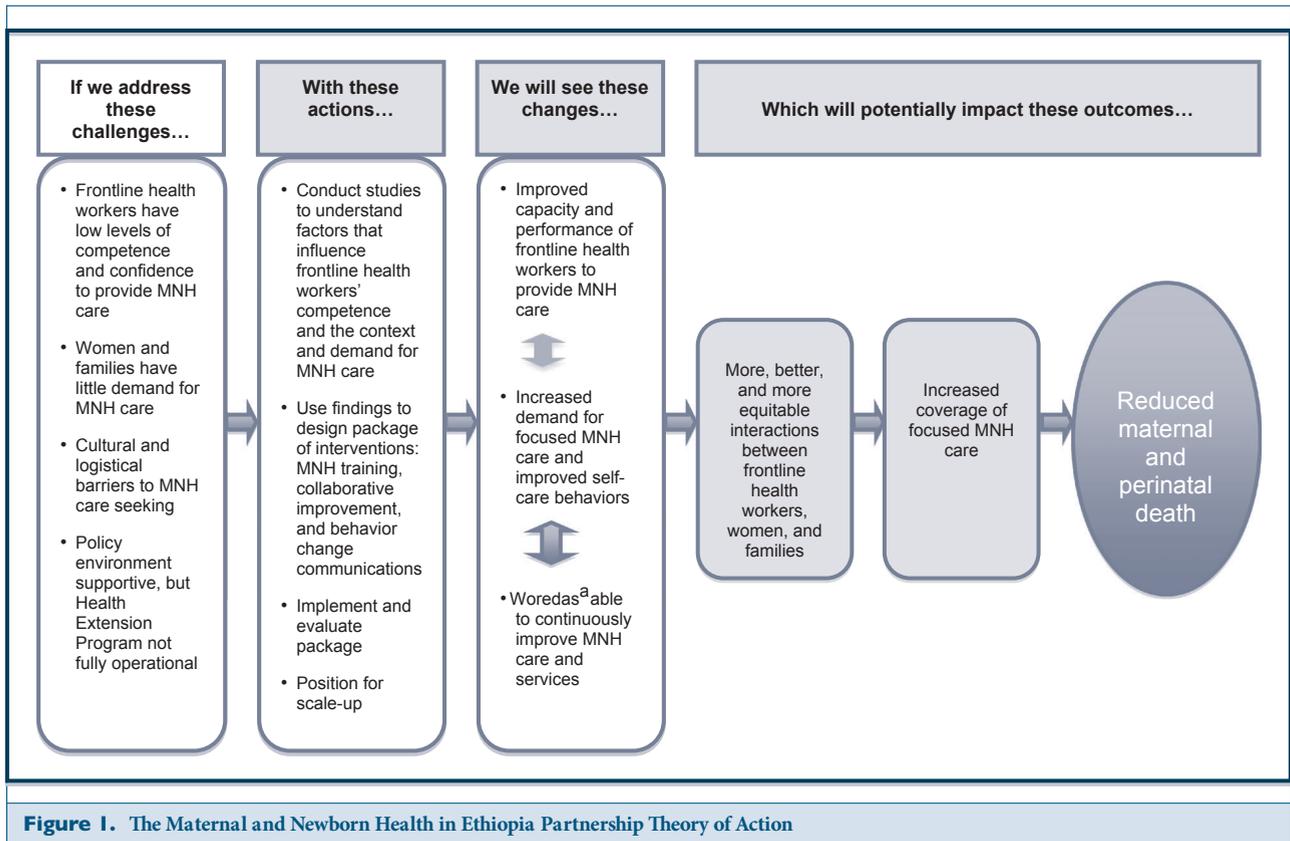


Figure 1. The Maternal and Newborn Health in Ethiopia Partnership Theory of Action

Abbreviations: MNH, maternal and newborn health.
^aWoreda: district.

The second and third articles focus on objective 1: improve capacity and performance of the team of the frontline health workers to provide the focused maternal and newborn health care. Gobeza yehu et al¹⁶ report that, although there were some regional and cadre-based variations, 3 cadres of frontline health workers (health extension workers, community health development agents, and traditional birth attendants) demonstrated substantial improvements in posttraining maternal and newborn health knowledge and skills that were largely retained over 18 months. Dynes et al¹⁷ found that trust in fellow health worker cadres, gender, and cadre affiliation were influential factors in frequency of interactions among the 3 cadres of health workers.

The fourth, fifth, and sixth articles focus on objective 2: increase demand for focused maternal and newborn health care and improve self-care behaviors, and objective 3: develop and demonstrate the effectiveness of lead *woredas* to improve maternal and newborn health care and services. Frew et al¹⁸ and Tesfaye et al¹⁹ describe the integration of CMNH training and improvement approaches. This integration was associated over a 2-year period, with increased completeness of care, increased use of skilled providers and health extension workers at birth, and a 10-fold increase in postnatal care coverage. Desta et al²⁰ describe how this integrated effort was reinforced by a novel mobile van video show, among other behavior change communications activities.

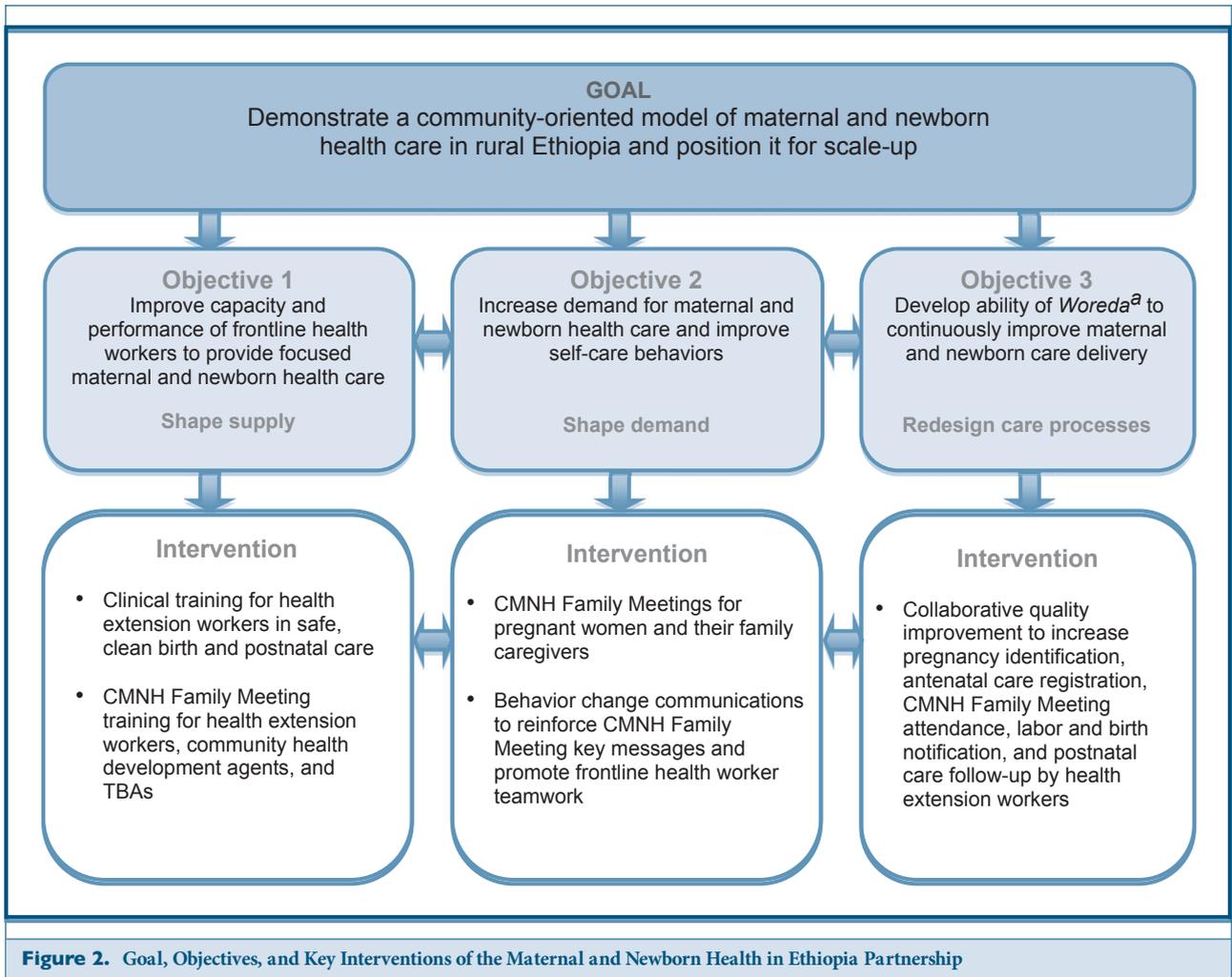
The seventh and eighth articles focus more closely on a key CMNH intervention element: administration of miso-

prosto to prevent postpartum hemorrhage. Sibley et al²¹ and Spangler et al,²² respectively, describe how a policy and program strategy allowing the distribution of misoprostol to women through multiple channels has the potential to greatly increase both access to and use of this lifesaving drug in rural areas of Ethiopia. The articles show how differences in the implementation of community-based misoprostol for postpartum hemorrhage prevention arose from different interpretations of higher-level policy regarding maternal health.

The ninth article focuses on objective 3: develop and demonstrate the effectiveness of lead *woredas* to improve maternal and newborn health care and services. Ethier-Stover et al²³ describe how the MaNHEP improvement approach was able to build health system capacity for the continuous improvement of maternal and neonatal health in 6 districts of Ethiopia.

The special issue concludes with 2 articles addressing critical issues for maternal and newborn health programming. Spangler et al²⁴ describe how MaNHEP appears to have achieved success in equitable implementation of CMNH family meetings with respect to age, parity, education, and geographic residence; however, household wealth remained a significant determinant of program participation. Finally, Sisay et al²⁵ explore how the invisibility of stillbirths and neonatal deaths, which is complex and deeply rooted in social constructs of personhood in high mortality settings, is a major barrier to perinatal survival.

Taken together, these articles represent a significant contribution to the field of maternal and child survival in poor,



Abbreviations: CMNH, community maternal and newborn health; TBAs, traditional birth attendants.
^a *Woreda*: district.

rural communities in developing countries. These articles touch on a key need in many countries: how to reduce maternal and perinatal mortality through community-level efforts. MaNHEP achieved this through a combination of methods not used typically for community interventions: participatory skills-based maternal and newborn health training targeting pregnant women and their caregivers and collaborative improvement. Practitioners, scholars, and students will find valuable insights and lessons in this special issue.

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CONFLICTS OF INTEREST

The author has no conflicts of interest to disclose.

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