



MATERNAL, NEWBORN AND CHILD HEALTH (MNCH) ACTIVITY IN LOW- AND MIDDLE-INCOME COUNTRY HEALTH MARKETS



The Center for Health Market Innovations (CHMI) (healthmarketinnovations.org) currently profiles over 220 programs that engage the private sector in low- and middle-income countries (LMICs) and provide maternal, newborn and child healthcare (MNCH).ⁱ CHMI documents programs that use innovative delivery and financing mechanisms that improve access, quality, or affordability of healthcare for the poor, including private clinical social franchises, vouchers for safe deliveries, and high-volume/ low-cost maternity hospitals. This brief analyses the CHMI database and reviews research literature to characterize market-based activity in maternal, newborn and child health, highlight promising approaches and identify areas for future research. The brief was prepared by Onil Bhattacharya, Kathryn Mossman and the T-HOPEⁱ team at the University of Toronto, in collaboration with the Results for Development Institute.

Key Takeaways

- Over 70% of CHMI's MNCH programs are concentrated in South Asia and East Africa and 58% are private, not-for-profit models. The volume of services delivered by the private sector is estimated to be quite high, with considerable experimentation with new approaches and models for care.
- Social franchising, microinsurance, and vouchers are the most commonly applied types of approaches, and have some evidence of impact such as increased utilization, improved pro-poor targeting, and reduced out-of-pocket spending. More research is needed on effects on quality, affordability, and accessibility.
- Innovative use of technology and the development of high-volume, low-cost clinics are becoming more common, particularly to improve operations and processes of care, change patient behavior, and increase access to affordable, quality services. However, evidence on the impact and effectiveness of these models on MNCH outcomes is limited.

Maternal, newborn and child health [MNCH] refers to the integrated continuum of care that delivers tools and treatments to mothers and their infants at critical points, and to children in their first five years of life.

– Bill & Melinda Gates Foundation

ⁱ These are programs or policies – implemented by a wide variety of public and private actors – that have the potential to improve LMIC health systems where private providers tend to predominate and household out-of-pocket spending is a major source of health financing.

Overview of Market-Based Activity in MNCH

The private sector plays a significant role in the delivery of health services to women and children in LMICs.¹ Of the 45 million home births that occur annually, the majority are conducted by private sector attendants and family members.² Additionally, private sector providers are frequently consulted for child illnesses in these countries.³ Where pediatric medical treatment was sought, an average of 27% of fever, acute respiratory infection, and diarrhea cases were treated in private facilities.⁴ And the private sector plays a key role in related areas that heavily impact MNCH, such as family planning, abortion services, nutrition, and antenatal care. As noted in *Fostering Healthy Businesses: Delivering Innovations in Maternal and Child Health*, “We need to support the development and growth of market-based models that will meet the needs of low-income women and children globally.”⁵

The private sector—comprised of NGOs, hospitals, individual physicians, community health workers (CHWs), traditional birth attendants, village healers, and many other formal and informal entities⁶—has emerged as a source of new and innovative approaches to the delivery of maternal and child health services in many LMICs. CHMI has documented over 200 such approaches, ranging from vouchers improving access to basic health services, to chains of clinics that provide low-income mothers with affordably-priced services such as pre-natal care, deliveries, and newborn care.

Highlights from an Overview of CHMI-Profiled MNCH Programs Include:

- The majority of MNCH programs CHMI has documented are private, not-for profit models (58%). Many of these provide education to mothers or train healthcare providers, and nearly one-third are now using information and communication technology as a way of collecting and delivering information to mothers and health workers. A small number of organizations have recently launched for-profit businesses that use technology in innovative ways. Mobile phone-based savings plans for deliveries and pay-per-text subscription schemes are some of the newly developed for-profit models.
- A number of financing tools are used to mobilize funds for maternal and child health coverage for the poor. Micro-health insurance schemes, voucher programs, and contracting arrangements with private providers are the most common of the documented financing approaches used to pay for maternal and child health services. Larger hospitals and clinics with high patient volumes—like the NICE Foundation in India, CEGIN in Argentina, and Charisin Uganda—also cross-subsidize between the poor and wealthier patients.

- One-third of documented maternal and child health programs organize the delivery of healthcare, or reduce the fragmentation and informality of health care delivery, with most operating as franchises, chains, or networks of clinics. Many of these programs are adding technology to existing approaches, for example, by linking networks of midwives to medical specialists through mobile applications enabling live consultations, or by launching paperless clinics where all patient information is stored and tracked electronically.

Market-Based Activities of MNCH Programs

The CHMI database currently captures data on over 1200 programs in over 100 countries. CHMI has identified five categories of Health Market Innovations with the potential to improve health market performance with better access, quality, and financial protection for the poor: Organizing Delivery, Financing Care, Regulating Performance, Changing Behaviors, and Enhancing Processes. The following graph outlines the number of CHMI-profiled MNCH programs that utilize innovative delivery and financing mechanisms that fall within these categories. Approaches profiled in this brief were selected through a review of the mechanisms utilized by programs in the CHMI database and discussion in relevant grey literature.

While the volume of services provided by the private sector is estimated to be quite high, and the level of experimentation with new approaches is considerable, it is hard to say whether this has actually resulted in improved health outcomes for mothers and children in developing countries. The sections below examine the approaches with the best evidence on impact and effectiveness, along with emerging market-based approaches, and available information on effectiveness in improving the quality, affordability and accessibility of MNCH services.

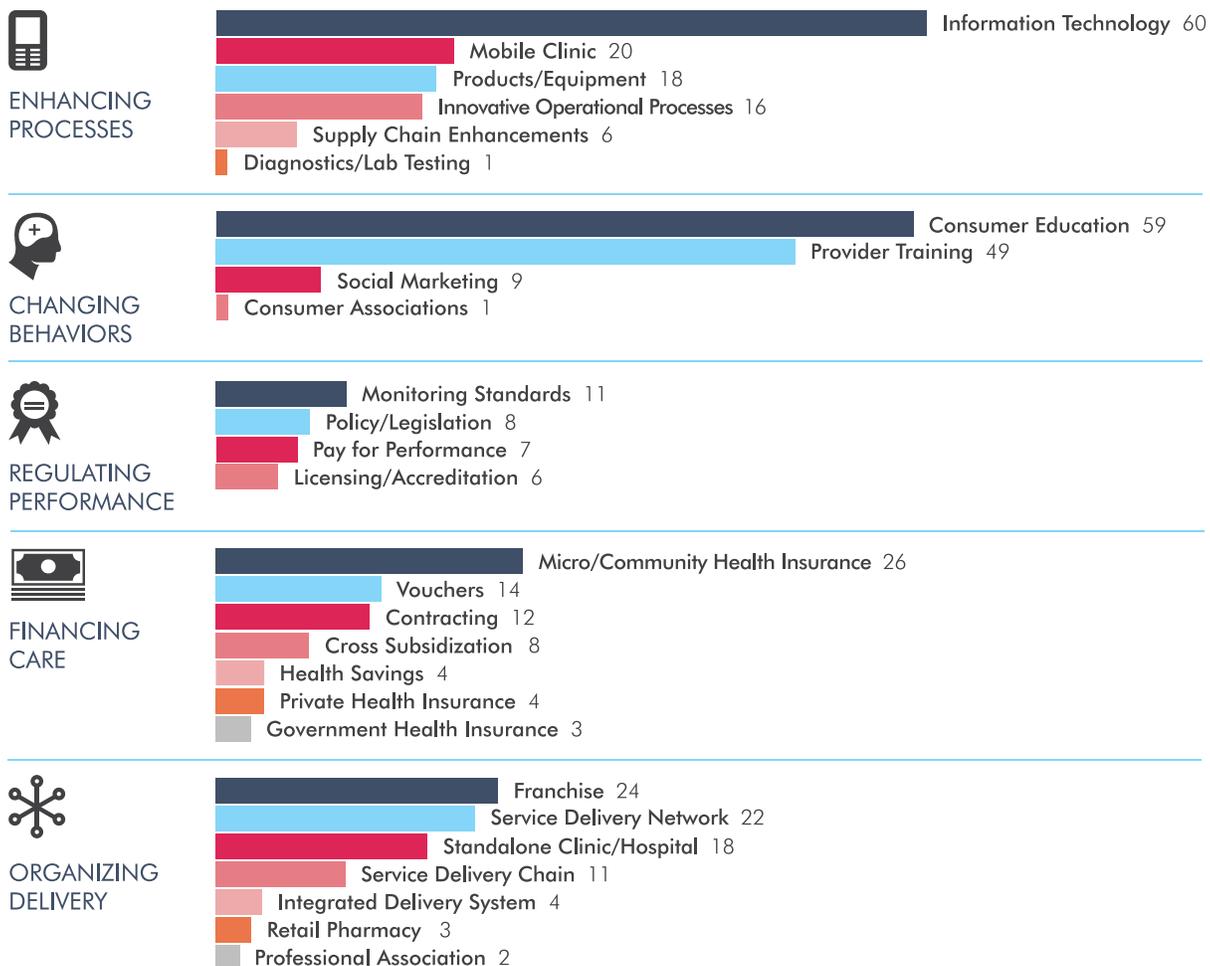
See Page 3 for Market Based Activities of MNCH Programs Graph »

What We Know About Better-Studied Market-Based Models

Social franchising, health microinsurance and voucher schemes represent some of the most commonly used approaches for the delivery and financing of MNCH services among CHMI-profiled programs. They are also some of the better-studied models with a solid base of available evidence on their effectiveness, especially in areas such as access to and utilization of skilled service providers, pro-poor targeting, and reduction in out-of-pocket spending for MNCH services. PAGE 4 »

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Market Based Activities of MNCH Programsⁱⁱⁱ



Reported Results: Tracking Program Performance

While some programs have performance results that have been externally verified, other programs are too small-scale or resource-limited to undertake full evaluation studies. In order to capture the universe of program reporting, CHMI launched the Reported Results initiative to capture “what’s working”, or achieving the kind of health and financial protection results that are important to national and global health policymakers, donors, investors, and program implementers. Reported Results are clear and quantifiable self-reported statements of program performance related to health access, operations/ delivery, and health status. For more information please visit: HealthMarketInnovations.org

This report captures both externally verified studies (under “The Evidence”), and self-reported performance results to CHMI (under “Reporting Results”).

ⁱⁱⁱ Programs may be tagged in more than one sub-category.

» **Social Franchising: Organizing Providers to Improve MNCH Care for the Poor**

Social franchises are an increasing source of MNCH care, and 24 of CHMI's MNCH programs use this approach.^{iv} Under this model, operator-owned outlets are organized under one brand and services are standardized. In a review of 52 social franchises, the Global Health Group found that almost half offered MNCH services – nearly double the number over a four year period.⁷ One reason for this growth could be the benefits practitioners often receive from participating in a franchise (e.g., training, advertising, business loans, and shared procurement costs).⁸

The Evidence: Some evidence suggests that social franchises can slightly increase the overall number of prenatal visits for pregnant women,⁹ the likelihood of a delivery in a health facility, and service utilization by the poor.¹⁰ However, the impact on client satisfaction has been variable, and concerns have been raised about the affordability and accessibility of services for poor women and those in rural areas.^{11,12,13} Additionally, despite operating under a common brand, the quality of care can be variable, and not always of an acceptable standard.^{13,14} Some studies of Reproductive Health programs find that franchises significantly outperform other models of health care, while others show that franchises are equivalent to or worse than other private or public clinics.¹⁴

Social Franchising Models Reporting Results to CHMI Include:

- **Greenstar Social Marketing Pakistan:** Greenstar is a franchise model in Pakistan focused on the delivery of family planning and reproductive healthcare services. A Harvard Health Policy Review study found that the program served 50% more poor clients than did government facilities. The same study also found that Greenstar franchises provided services that were of higher quality than other private facilities in the country.¹⁵
- **Mahila Swastha Sewa:** Mahila Swastha Sewa (MSS) is a franchise model in Nepal that provides family planning, reproductive health, and MNCH services. In 2010, MSS reported that its charge for an intrauterine device (IUD) was USD\$2.81, whereas the average cost of IUCD service delivery in the private sector in Nepal was USD\$7. The program also reports an improvement in quality ratings from 80% in 2010 to 86% in 2011, based on internal quality assurance visits using the Lot Quality Assurance Sampling method.¹⁶

» **Health Microinsurance: Providing Financial Protection and Access to Priority MNCH Services**

The private sector can increase access to MNCH care by providing customized financial services, including microinsurance schemes that cover women and children's health needs (ex.

antenatal visits, delivery, vaccinations, emergency procedures);¹⁷ 26 of CHMI's MNCH programs utilize microinsurance.^{iv} Microinsurance is designed to protect low income people against catastrophic health expenditures, in exchange for regular premium payments proportionate to the likelihood and cost of risk involved.¹⁸ This improves access by reducing the financial burden when care is needed.¹⁹ While microinsurance typically covers a small proportion of the population,²⁰ it is growing rapidly, with potential for expanded access to priority interventions, particularly in West and Central Africa.²¹ Many of these schemes cover routine maternal care, and a small but growing number cover emergency obstetric care.²²

The Evidence: There is evidence that microinsurance schemes that include maternal health care in the benefits package can increase utilization of maternal health services,²⁰ including greater use of antenatal care by poor women.^{23,24} By reducing out-of-pocket spending and targeting the poor, microinsurance can provide financial protection and greatly improve access to health care for members,²⁵ including hospital care for maternal health issues.²² However, the effectiveness of microinsurance and other demand-side mechanisms is dependent on the ability of the supply side to provide adequate health workers, quality services, and other key resources to provide necessary MNCH services.²⁶ Additionally, some researchers have raised concerns about the ability for schemes to increase access for the poor, since flat-rate premiums may still be too expensive for the very poorest.¹⁹ As such, the ability of micro-insurance to provide financial protection and mobilize resources for health care varies by context, with a wide range of schemes producing limited to moderate effects in these areas.²⁵

Microinsurance Models Reporting Results to CHMI Include:

- **Hygeia Community Health Plan:** Hygeia offers micro-health insurance in Lagos and Kwara State, Nigeria, including 40,000 female members of local market associations. The program reports that the microinsurance plan has resulted in decreased costs for the poor in its target market. Participating individuals in the poorest income quintile are paying nearly 300 Naira less compared to average out-of-pocket costs; those in the 2nd quintile pay 1500 Naira less. This seems to be linked to a compound annual growth rate in normal delivery services by 56% and C-sections by 123% from 2007 to 2010.²⁷

» **Voucher Schemes: Increasing Financial Access to Safe MNCH Care**

Voucher recipients receive free or subsidized health services from public or private providers.¹⁰ MNCH voucher programs typically target poor women and often cover services such as deliveries, antenatal and postnatal care, child immunizations, and nutrition services,²⁸ this includes 13 of CHMI's MNCH programs.^{iv} These programs are operational in many LMICs, including: **PAGE 5 »**

^{iv} Based on data from CHMI profiled programs in December 2012.

Uganda, Kenya, Ethiopia, India, Myanmar, Bangladesh, Cambodia, Pakistan, and Indonesia. The use of voucher programs as an approach to demand-side financing is a growing trend in the health sector, including in the areas of maternal and reproductive health.²⁹

The Evidence: There is evidence that vouchers increase the utilization of skilled service providers^{30,31} and institutional deliveries.³² Voucher programs seem to be more successful in achieving large-scale coverage if they are distributed appropriately, if there is strong site oversight and management, and if there is some relationship with the public sector through funding or stewardship of the voucher scheme.^{10,33} Even though voucher programs do improve equity of MNCH care, they cannot do away with the health inequities that exist between rich and poor in areas with voucher programs. To achieve desired improvements in access and utilization, demand-side financing (e.g., voucher programs) should be included in a comprehensive approach that incorporates initiatives to address social barriers and supply-side concerns.³⁴ There is less external evidence on whether vouchers reduce maternal mortality, although some CHMI programs have reported results on this and other measures such as affordability.

Voucher schemes reporting results to CHMI include:

- **Chiranjeevi Yojana:** ChiranjeeviYojana is focused on provision of delivery and emergency obstetric care at no cost to families living below the poverty line in India. Evaluators of the CHMI-profiled program estimated that its voucher program in India saved women an average of \$75 in out-of-pocket expenditures.^{35,36}
- **Bangladesh Demand Side Financing Pilot Program:** This maternal health voucher program was developed to increase utilization of maternal healthcare services by poor women. The program reports an unprecedented positive effect on the utilization of maternal health services since initiation – the rate of institutional deliveries is now twice as high in program sub districts (38%) compared to control sub districts (19%); and the likelihood of 3 ANC visits is 55% in program sub districts as compared to 34% in control sub districts. However, the program is finding that while women from poorer quintiles are significantly more likely to receive vouchers than from wealthier quintiles, there is substantial leakage to women who do not meet land ownership criteria, asset ownership criteria, and income criteria.³⁷

What We Know About Emerging Market-Based Models

There are a number of promising innovations in MNCH care, but relatively little is known about their impact and effectiveness.^v In particular, a growing number of private providers are

developing novel ways to design delivery models at low-cost and to use information and communication technology (ICT) to improve care. This includes timely access to urgent care, and efforts to address the lack of skilled providers.³⁸ Additionally, ICT seems to show the most promise when used in combination with other mechanisms, such as innovative financial arrangements.³⁹ Many of these models are highly scalable, and if found to be effective, could have significant impact.^{40,41}

Service Delivery Chains: Providing High Quality, Low-Cost MNCH Delivery Models

Service delivery chains providing high quality, low-cost care are an emerging approach for MNCH-focused organizations, and 11 of CHMI's MNCH programs use this approach.^{iv} The chain model entails a group of clinics or hospitals working under the same brand and paid by a sponsoring organization offering specialized maternal and child health services. To keep prices low, this business model creates economies of scale by generating demand through offering respectful, responsive, and affordable care, and engaging in efficient organizational processes.^{42,43} The result is a chain providing affordable, quality health services that meet the needs of poor communities while achieving organizational sustainability.

The Evidence: There is currently little research on the effectiveness of this model. However, some program-specific data suggest that service delivery chains are able to efficiently deliver high-quality services at a low cost.⁴⁴ Further study is needed to understand how well this model targets the poor and improves access to MNCH services.

Service delivery chains reporting results include:

- **LifeSpring Hospitals Private Limited:** LifeSpring operates 12 hospitals in its service delivery chain, which specializes in providing core MNCH services to lower-income women and children in India. The CHMI-profiled program states that their prices are one-third to one-half of the prices charged at other hospitals offering a similar quality of services.^{45,42}

Mobile Phones: Connecting Health Workers to Skilled Providers for MNCH Care

mHealth platforms, such as mobile phones and internet applications can improve the capacity of lesser-trained health workers by connecting them with better-trained medical staff;⁴⁶ 12 of CHMI's MNCH programs use mobile phones for this purpose.^{iv} In doing so, programs can reduce the delay patients experience when receiving appropriate care.³⁸ Moreover, mobile technologies can improve coordination of care through rapid voice and data exchange between community health workers, health centers and hospitals.

^v These innovative models were identified through a review of MNCH programs in the CHMI database along with a review of promising innovative approaches in MNCH described in the relevant gray literature.

The Evidence: Some program-specific data suggest that mobile technologies improve access to more highly trained medical staff, and increase the capacity of less-trained health workers such as midwives, and reduce response times.⁴⁷ Other programs are currently being tested and new performance data should be available in the near future.⁴⁸

Mobile phone programs reporting results include:

- **Childcount+:** Childcount+ is an mHealth platform bringing real-time decision-support and monitoring for MNCH services to community health workers across ten Sub-Saharan African countries. While the program is currently undergoing a third party evaluation of the project, it has reported on user satisfaction data from its community health workers with mixed results. Three of the four sites report a high level of improved efficiencies as a result of the mHealth product, citing decreases in working hours and improved ability to set care priorities. However, results were mixed in other areas evaluated including ease of learning and data entry.

› SMS Reminders: Providing health updates for mothers

Interventions for mothers and children often fail because they don't focus on changing care-seeking behavior.⁵⁰ Low-cost tools are needed to build awareness and prompt healthy behaviors, such as attending antenatal visits and childhood vaccinations.⁴² ICTs can enhance clients' skills and knowledge while reducing complexity, helping them to make informed decisions about their health.⁵¹ Programs can disseminate engaging and personalized health messages through mobile phones and also remind patients to attend appointments and take medications. This can improve health literacy and encourage adherence with treatment regimens.⁵¹ Eight of CHMI's MNCH programs engage in this practice.^{iv}

The Evidence: Evidence is not yet available on programs that use SMS reminders and health updates to encourage healthy and health-seeking behavior in women,³⁸ but studies from other health areas (such as smoking cessation) suggest that these approaches can be successful. Furthermore, there seems to be a significant demand for women's health-related information using SMS technology in areas where reproductive health information is difficult to obtain.¹⁷ There are no SMS reminder programs reporting results to CHMI.

› Decision support software: Promoting efficiency and quality through task shifting

Given the shortage of highly trained providers in LMICs, there is growing interest in task shifting, or delegating routine tasks to lesser-trained cadres of health workers. To maintain high standards of care, lesser-trained health workers can follow clinical protocols using decision support software,⁵³ with 3 of CHMI's MNCH programs engaging in this practice.^{iv}

This software is often available on mobile phones and guides health workers through the screening, examination, and treatment process, and helps these workers make appropriate decisions regarding care. Support software can also provide useful knowledge and incentives for performance, which can increase efficiency and improve health outcomes.⁴²

The Evidence: While the number of studies is limited, there is some evidence that these programs work.⁵⁴ Qualitative data from a pilot study testing the impact of clinical decision support software for community health workers suggest that the program has improved the quality and comprehensiveness of care and patient monitoring. However, the data also suggest that these programs require supervision to support the CHWs. There are no decision support software programs reporting results to CHMI.

› Mobile banking: Helping the poor overcome financial barriers to care

Mobile phone-based savings and payment schemes have emerged as tools to overcome financial barriers to care for the poor,⁵⁵ with 4 of CHMI's MNCH programs engaged in this practice.^{iv} This includes financial planning applications, which help budget health expenditures, and applications to pay for healthcare, which speeds transactions and may increase access to health services for the poor.¹⁷

The Evidence: Preliminary results from a pragmatic case-controlled study showed that expecting mothers using the savings program were more likely to attend at least 4 prenatal clinics. The program seemed to be more convenient and secure than carrying cash, but did not seem to provide significant savings benefit.¹ Overall, there is little data on the impacts of savings programs and more evidence is needed to understand their impacts on care seeking behavior and savings.

Mobile banking programs reporting results include:

- **Changamka Microhealth Limited:** Changamka utilizes technology to facilitate the financing of healthcare services to provide access for the poor to health facilities in Kenya. This includes a maternity smartcard that provides mothers with a dedicated savings mechanism to access antenatal, maternity, and post-natal services at participating facilities. The program has reported a 30% increase in the number of women regularly visiting hospitals since they have started accepting the Changamka cards.⁵⁶ PAGE 7 ››

Evidence gaps and research opportunities in MNCH

Providing quality MNCH services is an ongoing challenge, reflected in the stubbornly high rate of maternal mortality seen in LMICs – even those that have successfully achieved other MDG targets. The private sector is implementing a wide range of new practices, from vouchers improving access to basic health services, to mobile phones connecting community health volunteers to skilled health practitioners in delivering care.

Perhaps unsurprisingly, well-established models that have stood the test of time are better-studied and have more supporting evidence on impact and effectiveness – these include social franchising, microinsurance, voucher schemes. Note that the available evidence reveals that these models have made contributions to certain areas of impact such as increased utilization, improved pro-poor targeting, and reduced out-of-pocket spending. However, a number of gaps remain – evidence about improved quality is insufficient and where available, inconclusive; and there is variable evidence on the effects of these models on affordability and accessibility to priority MNCH services. Additionally, while many of the programs provide general support to maternal and child health, many of the results reported focus on maternal interventions. However, research is pointing to the need for an integrated approach, and concurrently, evaluations for both the woman and child.⁵⁷ As private sector activity in MNCH continues to evolve, it will be crucial to continue to track the ways in which mechanisms programs are utilizing to improve outcomes, and which are making an actual impact.

Over the last decade low-cost, high-volume clinics and ICT innovations have started to emerge. While these certainly seem promising, there is limited or no evidence available at the moment about their impact on MNCH outcomes. However, early evidence on a few programs suggests that these models have contributed to increased access to the affordable, quality services, improved capacity for health workers, and improved operational processes. Further research is needed to understand whether the expected benefits of these approaches can be actualized on a large scale, even for better studied areas like microinsurance, and ICT innovations which have been primarily piloted as one-off small-scale models. Given the increasing number of MNCH programs turning to these approaches, this is an opportune time to research the impact of service delivery chains and ICT innovations and to suggest a roadmap for future research.

Finally, what emerges is that overall there continues to be limited evidence about the combined impact of specific models, and where evidence exists, it is limited to one program or intervention. CHMI will continue to monitor, document and report on new information as it emerges, while identifying

critical evidence gaps for setting MNCH research priorities. This is important as funders and governments make decisions about where to make investments in MNCH care for the poor. Going forward, CHMI will continue working with its partner organizations on the ground to identify more innovative health programs; and with research institutions to explore the evidence around such models. In doing so, CHMI hopes to showcase which health programs have the greatest potential to improve how private markets work for the poor.

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