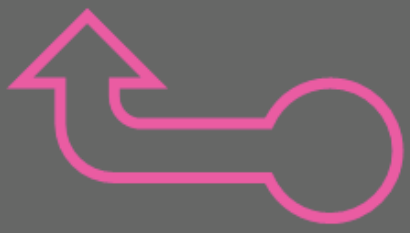

RAPID ROUTES TO SCALE

SCALING UP PRIMARY CARE TO IMPROVE HEALTH IN LOW AND MIDDLE INCOME COUNTRIES

December 2014

ICSF
INTERNATIONAL CENTRE FOR SOCIAL FRANCHISING

UNIVERSITY OF TORONTO

About the Rapid Routes to Scale Group

Rapid Routes to Scale is a unique group of stakeholders from the academic, social and private sectors, committed to ensuring poorer people have better health by understanding how primary care can be scaled and acting upon it.

This report has been created and funded by:

- Bill and Melinda Gates Foundation
- Center for Health Market Innovations
- International Centre for Social Franchising
- GlaxoSmithKline
- International Partnership for Innovative Healthcare Delivery
- Merck & Co
- Merck Serono
- Novo Nordisk
- T-HOPE, University of Toronto

Acknowledgements

The authors would like to thank all those interviewed for being so generous with their time and insights. Particular thanks go to IPIHD and R4D for the extensive time, energy and expertise that they put into their advisory role. T-HOPE would also like to thank Daniela Graziano, Stephen Pomedli, Ilan Shahin, Raman Sohal, and Diane Wu for assisting with the research.

Disclaimer

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Rapid routes to scale

Foreword

As Ebola ravages the west coast of Africa, almost never has there been a time when the failure of primary care health systems has been so starkly illustrated, and so devastating. The tragedy of poor primary care is not only impacting on health but also livelihoods, stopping millions contributing to the betterment of the societies they live in. This is not a failure of medicine, it is a failure of organization; an inability to scale primary care systems.

Frustratingly, private, public and social sector organizations seem to have the ability to reinvent the wheel continuously, pouring time and money into new programs that meet a commercial and social need when so often this work has already been done. Yet there are examples of primary care scaling successfully that can be learnt from, developed, copied and/or adapted.

We know that no one primary care organisation can scale up alone. To successfully scale takes an ecosystem of support. This is why the Rapid Routes to Scale group have come together to understand what makes primary care scale, and to take action. I am proud to be working with such a uniquely placed and diverse group of organizations. The Rapid Routes to Scale group hope that this research will help you scale up primary care, no matter what your role in the ecosystem is, to make lives healthier and better for those who need it most.

Dan Berelowitz,
Chief Executive ICSF

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EXECUTIVE SUMMARY

We know primary care is a core component of robust health systems and critical to delivering the benefits of universal health coverage. While many developing countries have made improvements in some disease specific areas, access to affordable, quality primary care services continues to be a significant challenge. Despite these challenges, there are emerging and quality programs that are not only bridging this primary care gap but are ambitiously scaling up.

A unique group of stakeholders from academia, NGOs and the pharmaceutical sector, committed to ensuring that poor people have better health, have come together to understand how primary healthcare delivery can be scaled up in the developing world. This research uncovers a range of primary care programs, identifies what works, and what does not when scaling up, and makes recommendations with the potential to improve millions of lives.

Most of the scale up literature on health focuses on disease specific areas such as HIV/AIDS and reproductive health so this research addresses a significant knowledge gap. It also takes the health ecosystem into consideration, with field visits into the Kenyan and Indian contexts, and provides insights into how the local conditions and stakeholders can shape the scale up of primary care. This deep dive approach has led to findings that substantiate, and refute, commonly held assumptions, as well as identifying new ones.

Our review of primary care programs on the Centre for Health Market Innovation (CHMI) database, field visits and in depth interviews found these challenges to scaling up primary care:

- Lack of understanding, and under valuing, of primary care in low and middle income countries (LMICs)
- Lack of skilled primary care health workers
- Lack of expertise in primary care scale up
- Increasing efficiency
- Generating/accessing sufficient and sustained funding for scale up
- Developing beneficial partnerships

As a result, this research identifies 6 key mobilizers of successful primary care models:

- Strong patient relationships
- Innovative staffing models
- Leadership characteristics
- Standardized and efficient processes
- Innovative income generation
- Collaboration and partnerships

This Rapid Routes to Scale stakeholder group was convened with the specific intention of turning research into action. For each of the primary care challenges, we have developed actionable recommendations for health ecosystem stakeholders to address collaboratively, such as building relationships with patients and relevant partners, developing appropriate staffing innovations, providing management support for leadership, facilitating the implementation of efficient processes and new technologies, and supporting innovative and impactful primary care programs. We have also identified a number of specific actions that the Rapid Routes to Scale stakeholder group can pursue to support the scale up of primary care programs, including putting insights into practice by selecting and supporting a few high potential programs, consolidating knowledge to provide practical advice, and location specific ecosystem development.

While primary care scale up is complex and challenging, the research shows that with the right approach, donors, investors, policy makers, researchers, and programs themselves can harness their collective impact to help scale up primary care for those who need it most.

1. BACKGROUND

Strong primary care systems are associated with improved health outcomes, increased access to appropriate services and reduced health inequities.[1, 2, 3] Despite this, the delivery of primary care is poorly developed in many LMICs. Primary care works best when it is the first point of contact with the health system, is comprehensive, provides care across the life course and connects patients with other levels of care as required.[4]

Many innovative private primary care programs are emerging in LMICs with the potential to increase access to, and the quality of, health services.[5] However, few have achieved substantial scale. Scale is the process of expanding coverage of primary care delivery to increase health impact. For our purposes, scale up involves increasing the number of people served, geographies covered, and/or services provided. Our research aimed to identify innovative primary care models in LMICs, identify critical factors that impact an innovative program's ability to scale up, and examine the role of the health ecosystem, including local stakeholders and contextual factors, in shaping primary care scale up.

[1] Starfield, B., Shi, L., Macinko, J. (2005) Contribution of primary care to health systems and health. The Milbank Quarterly 83(3): 457-502.

[2] Beasley, J.W., Starfield, B., van Weel, C., Rosser, W.W., Haq, C.L. (2007) Global health and primary care research. Journal of the American Board of Family Medicine 20: 518 –526.

[3] Kepp, M. (2008) Cracks appear in Brazil's primary health-care programme. Lancet 372(9642): 372.

[4] Starfield, B., Shi, L., Macinko, J. (2005) Contribution of primary care to health systems and health. The Milbank Quarterly 83(3): 457-502.

[5] Bloom, G., Ainsworth, P. (2010) Beyond scaling up: pathways to universal access to health services, STEPS Working Paper 40. Brighton: STEPS Centre.

2. RESEARCH APPROACH

The research involved a review of over 100 documents from the academic and grey literature on primary care and scale up, a review of 465 innovative primary care programs in the CHMI database and in depth interviews and field visits with 37 primary care programs and 12 primary care and scale up experts. A more detailed discussion of the research methods can be found in Appendix A. Appendix B provides an overview of programs interviewed for this study.

3. MOBILIZERS OF PRIMARY CARE SCALE UP

While scaling up primary care is important for improving access to essential curative and preventative health services, our research found that there are characteristics of primary care that make it inherently difficult to scale. These include a lack of demand for primary care services from LMIC populations, difficulty attracting an already scarce supply of health workers, and low margins that make it challenging to sustain operations and expand. These are essentially management problems, pointing to the need for programs to successfully manage supply and demand within a health ecosystem to achieve scale.

Through this study, we found a number of program activities that promote scale up of primary care programs. We have organized these factors into 6 key mobilizers that facilitate scale up. Within these 6 mobilizers, we found that specific scale up factors fall into 2 broad groupings:

- Scale catalysts (differentiators): Activities described as beneficial for scale up. Our analysis found that programs with these features, sometimes alone and sometimes in combination, are statistically more likely to be successfully scaling than programs without these features.
- Scale promoters (contributors): Activities described by programs as helpful for scale up. Programs that are scaling successfully, and some of those that are not, have these features. These activities contribute to the ability of a program to achieve its basic goals, but were not found to differentiate programs that are scaling successfully from those that are not.

Table 1: Summary of Mobilizers and Scale Factors

Category	Scale catalysts (differentiators)	Scale promoters (contributors)
Strong patient relationships	- Focus on patient experience - Branding and marketing - Health education campaigns to promote services	- Community mobilizers - Adjusting offerings to meet patient demand
Innovative staffing models		- Non doctor staffing models - Doctors from "alternative" demographics - Selective hiring processes - Staff incentives - Staff training - Remote technology to connect patients with clinicians
Leadership characteristics	- Combination of medical and business skills	- Coaching and support for scaling up
Efficient and standardized processes	- Standardizing non clinical practices - Franchising	- Supply chain enhancements - Investing in new technologies
Innovative income generation	- Alternative options for financing treatment - Selling other products and services	
Collaboration and partnerships	- Partnerships with organizations that give access to a customer base	- Alignment and partnership with government - Partnerships with organizations that provide technical and operational support

3.1 Strong patient relationships

A number of the programs we spoke to noted that the lack of value attributed to, or understanding of, primary care by community members is a significant barrier to growth. In many communities, patients will often go to a chemist, a specialist or do nothing rather than seek care from a primary care provider. Programs are therefore engaging in a variety of innovative activities to address this and build provider patient relationships, which are the cornerstone of effective primary care.

- Patients don't value and understand primary care
- Patients tend to avoid or seek care elsewhere

Scale catalysts (differentiators)

- Focus on patient experience
- Branding and marketing
- Health education campaigns to promote services

Scale promoters (contributors)

- Community mobilizers
- Adjusting offerings to meet patient demand
- Coaching and support for scaling up

Scale catalysts:

- **Focus on patient experience:**

  Enhancing the patient experience and focusing on the patient's perception of quality and value for money can significantly contribute to scale up. Poor populations are very price sensitive, but they are willing to pay for healthcare if they perceive that it provides value for their money.[6] Healthspring[7], a clinic chain in Mumbai, describes customer experience as being critical, with one of the founders stating, "the act of coming to the centre should make you feel better, not worse. We put the emphasis on people." The clinic staff are expected to be warm, friendly, and punctual, and focus on clear and thorough communication. Doctors are restricted to 4 appointments per hour so that patients do not feel rushed. The waiting area is tidy and clean with calming colours, comfortable sofas and free reading material. The objective is to create a positive impression and generate word of mouth recommendations to other community members.

- **Branding and marketing**

  Clear and visible messaging about an intervention's advantages can be beneficial for scaling up.[8] Unsurprisingly, our study found that investing in branding and marketing to position a program as affordable and high quality supports successful scale up. MeraDoctor[9], a health hotline operating in India, markets its services using radio, seminars, health camps, and a sales force that shares testimonies from existing patients. It positions its brand as patient focused, honest and providing compassionate care. Patients associate LifeNet International[10], a non profit that franchises church based health centres, with high quality care. This is a point of pride for franchisees, who benefit from real increases in patient volume because of this brand positioning.

- **Health education campaigns to promote services**

  A promising approach to attracting clients is to run health education campaigns with communities on topics such as malaria and diabetes. Penda Health[11], a clinic chain in Kenya, holds health education and awareness events with small businesses, churches, schools, and markets to share valuable health advice, and inform community members about clinic services, locations and timing. This helps to increase interest in the program and builds relationships with the community. Clínicas da Família[12] in Rio de Janeiro uses community based strategies for engagement, visiting churches and schools. Meetings with school directors cover the types of health problems encountered in the school, and can result in the provision of a new service, often in the school itself.

[6] Berelowtiz, D., Horn, J., Thornton, A., Leeds, I., Wong, D. (2013) Identifying replicable healthcare delivery models with significant social benefit. London: The International Centre for Social Franchising.

[7] Healthspring, started in 2011, provides primary care services through 7 health centres around Mumbai, each of which take approximately 1 year to break even. It provides access to cost effective and timely care, with an emphasis on preventive medicine. Its objective is to expand to other parts of India in the next 4-5 years. http://www.healthspring.in

[8] Gilson, L., Schneider, H. (2010) Managing scaling up: what are the key issues? Health Policy and Planning 25(2): 97-98.

[9] MeraDoctor, founded in 2011, provides a health hotline and medical discount service in over 19 states in India. Its doctors, psychologists and nutritionists are available by phone through a call centre 24 hours a day, 7 days a week. It has addressed over 400 different types of primary care ailments and currently has over 40,000 clients eligible to call the health hotline. http://www.meradoctor.com

[10] LifeNet International franchises local clinics in East Africa aiming to improve population health by increasing the quality of patient care. It provides medical training, management training, pharmaceutical supply, and growth financing for its franchises. The current model was implemented in 2012 and has grown to include 51 partners. http://www.lninternational.org/

[11] Penda Health is a for profit social enterprise that began in 2012 and operates 2 health centres and 1 clinic in Nairobi, Kenya. It provides accessible, affordable, high-quality primary care services for hard to reach populations, particularly women. It currently serves 25,000 patients a year. http://www.pendahealth.com/

[12] See Box 1 on Clínicas da Família. http://www.rio.rj.gov.br/web/sms/clinicas-da-familia1

Scale promoters:

- **Community mobilizers**

  A common approach among mobile clinics and some static clinic chains is to hire local people as "community mobilizers". Children's Health and Development in Kenya (CHADIK)[13], a mobile clinic provider in rural areas, employs community health workers to go door to door to let community members know when the mobile clinic will be arriving. This helps to bring in patients, and gives CHADIK information about the type of services that will be required. Using community mobilizers creates a personal connection with community members, which helps to build trust and awareness.

- **Adjusting offerings to meet patient demand**

  Successful scale up of primary care is supported by ensuring a program is able to adapt to the needs and interests of the populations they serve[14], as well as those of other stakeholders.[15, 16, 17, 18, 19] Access Afya,[20] a clinic chain in the slums of Nairobi, explored offering a health kiosk model providing triage, diagnostics, and health information. However, through focus groups with the community, the organization learned that wellness and prevention are not "pull products" that can make a bottom of the pyramid business sustainable. The focus groups highlighted needs such as authentic medication and first aid. Once patients are in the clinic environment and have had an interaction with an Access Afya provider, they are more likely to be responsive to discussions about family planning and immunizations. Several programs, including Meradoctor, mDhil[21] and the Institute of Health Management: Pune and Pachod (IHMP)[22], describe translating their communications materials or providing services in local languages. When working in Ethiopia, Amref Health Africa[23], an international health organization, described using a traditional coffee ceremony – a gathering when women can discuss issues – to raise the topic of malaria and discuss its causes, symptoms and treatment. Health by Motorbike[24] has tapped into the popularity of theatre in rural Kenya to develop health dramas with local health promoters to share information on relevant topics, such as malaria, maternal health, and reproductive health.

3.2. Innovative staffing models

As for all kinds of health provision in LMICs, attracting and retaining qualified health workers is a challenge due to the overall shortage of physicians and nurses. Attracting health professionals, especially doctors, to primary care can be even more challenging given that the pay is lower than for specialty work and it has less prestige. This is amplified in rural areas, where living standards and pay are perceived to be even lower.

[13] CHADIK provides outreach clinics with doctors, nurses and social workers to remote and poor areas of Kenya. They focus on serving children and mothers that would otherwise lack health services. CHADIK began in 2008 and serves up to 120 patients a day through their program. http://www.chadik.org.uk

[14] IPIHD (2012) APROFE profile. Durham, N.C.: IPIHD.

[15] Walley, J., Lawn, J.E., de Francisco, A., Chopra, M., Rudan, I. et al. (2008) Primary health care: making Alma-Ata a reality. Lancet 372(9642): 1001-1007.

[16] Burleigh, E. (n.d.) Best practices in scaling up case study: Guatemala: Pro RedesSalud: rapid scale -up of primary health care through NGOs. Boston. John Snow, Inc.

[17] Sibthorpe, B.M., Glasgow, N.J., Wells, R.W. (2005) Emergent themes in the sustainability of primary health care innovation. The Medical Journal of Australia 183(10): 77-80.

[18] Charles, L., Moe, J., Bartlett, R. (2012) One family health Rwanda: achievements and challenges 2012. Durham, N.C.: IPIHD.

[19] Homer, C.J., Baron, R. (2010) How to scale up primary care transformation. Journal of General Internal Medicine 25(6): 625-9.

[20] Access Afya is a social enterprise that provides basic clinical and prevention services at 2 clinics and 2 field-based school sites in Nairobi's slums. Their core offerings include consultation, pharmacy services, rapid diagnostic tests, family planning and immunizations. It began in 2012 and currently serves over 3000 clients. http://www.accessafya.com

[21] mDhil, launched in 2009, is a for-profit program that promotes health awareness in India through interactive digital content, mobile web browsers, and text messages. It consults with local groups and physicians to identify relevant health topics, and produces online medical and wellbeing content in multiple languages that is available for download on a variety of devices. Their 6 YouTube channels receive 40,000-50,000 views per day, and have received 19.2 million views overall. http://www.mdhil.com/

[22] IHMP is a non profit organization that began in 1975 in India. It provides health and development programs with the aim of working closely with communities to increase demand and access to quality primary care services, particularly for women and children. It currently operates projects in 72 villages in Pachod and 27 slums in Pune. http://www.ihmp.org/index.html

[23] Amref Health Africa is an international non profit founded in 1957. It helps to increase access to health care for marginalized African communities by providing health programs, advocating for local communities, working with Ministries of Health and training local health workers. With program offices in 7 African countries, they now reach communities in over 40 African countries with their initiatives. http://amref.org/

[24] Health by Motorbike is a non profit health outreach program that began in 2010 with the aim of serving isolated communities on the border of Kenya and Tanzania. The program sends a local health professional with basic medications by motorbike to visit remote communities, providing medications, primary care services, and health education. The program currently serves 7 villages in Kenya. http://healthbymotorbike.wix.com/healthbymotorbike

Hiring and motivating qualified staff, who can contribute to building relationships and trust with local communities, is described by programs and the literature as one of the top enablers of scale up.[25, 26, 27, 28] More than 3/4 of the programs contacted for this research referenced one or more innovative approach for recruiting and retaining staff, and while none of these specific approaches are scale catalysts that differentiate successfully scaling programs, they are important for the operations of the program in different contexts and help support program scale up.

- Lack of appropriately skilled staff
- Difficult to attract staff to primary care

Scale promoters (contributors)

- Non doctor staffing models
- Doctors from "alternative" demographics
- Selective hiring processes
- Staff incentives
- Staff training
- Remote technology to connect patients with clinicians

Scale promoters:

- **Non doctor staffing models**

  To address the lack of doctors available or interested in working in primary care, programs have pursued alternative staffing models recruiting nurses, community health workers[29], medical students and volunteers who are cheaper and in higher supply, to provide both preventative and curative services. Indeed, half of the programs directly providing care to patients, interviewed for this study, use non physicians to provide most of their health services. Vaatsalya Healthcare[30] is a chain of primary care clinics and community hospitals in India where 80% of the staff are nurses who benefit from training and incentive programs to boost retention.[31] Several clinic chains in Kenya, including Penda Health, Viva Afya[32] and Access Afya, focus on hiring non physician "clinical officers", mid level health workers with a restricted scope of practice. Viva Afya hire clinical officers because they are more readily available than physicians in Kenya where there are 0.2 physicians per 1000 people.[33] Clinical officers can be paid lower salaries, and they are often recruited from local communities. Viva Afya provides professional development for employees, and their staffing approach helped fuel their growth to 12 clinics in 5 years.

[25] De Maeseneer, J. (2013) Scaling up family medicine and primary health care in Africa: statement of the Primafamed network Victoria Falls, Zimbabwe. African Journal of Primary Health Care and Family Medicine 5(1).

[26] Walley, J., Lawn, J.E., de Francisco, A., Chopra, M., Rudan, I. et al. (2008) Primary health care: making Alma-Ata a reality. Lancet 372(9642): 1001-1007.

[27] Mackinco, J., de Souza, M.F.M., Guanais, F.C., Simoes, C.C.S. (2007) Going to scale with community-based primary care: an analysis of the family health program and infant mortality in Brazil, 1999-2004. Social Science & Medicine 65: 2070-2080.

[28] Sibthorpe, B.M., Glasgow, N.J., Wells, R.W. (2005) Emergent themes in the sustainability of primary health care innovation. The Medical Journal of Australia 183(10): 77-80.

[29] The World Health Organization (WHO) has described community health workers as having shorter training than other health professionals, who are ideally members of the community where they work and selected by and responsible to their communities (WHO (2010) Global experience of community health workers for delivery of health related millennium development goals: a systematic review, country case studies, and recommendations for integration into national health systems. Geneva: WHO). http://www.who.int/workforcealliance/knowledge/publications/CHW_FullReport_2010.pdf?ua=1

[30] Vaatsalya Healthcare, founded in 2004, is a for profit hospital and clinic chain that serves semi urban and rural areas in India. It provides primary and secondary services, as well as diagnostics and pharmacy services, bringing affordable healthcare to less served areas. It currently serves 500,000 clients a year through its 9 health centres. http://www.vaatsalya.com/2014/

[31] By comparison, only a few of the other clinic chains we spoke to employ nurses, and of those that do, they represent less than 20% of the clinical staff.

[32] Viva Afya is a for profit chain of primary care clinics, mostly operating in Nairobi, Kenya. Starting with its first clinic in 2009, it offers competitive prices for its consultation services, as well as diagnostics and pharmacy services for densely populated, low income areas. They are on track to serve 80,000 clients this year at 12 clinics. http://www.vivaafya.co.ke/

[33] World Bank (2014) Data: physicians (per 1,000 people). Available from http://data.worldbank.org/indicator/SH.MED.PHYS.ZS. Accessed 23 September 2014

- **Doctors from "alternative" demographics**

  Programs that rely on physicians to provide patient services have turned their attention to recruiting doctors from backgrounds that may not traditionally be associated with primary care provision:

  - Traditional healers, such as experienced Ayurvedic doctors in India who already operate in rural areas and are familiar with the local community. For example, World Health Partners[34] enters into franchise arrangements with providers such as Ayurveda, Yoga, Unani, Sidda & Homeopathy (AYUSH) doctors who have existing clinics in rural India.
  - New medical school graduates who want to gain experience and do not want the responsibility of opening up their own clinics. Vaatsalya, a primary care clinic and hospital chain in India, describes that part of its new recruitment strategy is to hire recent graduates rather than experienced doctors, and give them greater autonomy in their practices.
  - Retired doctors who are interested in continuing to provide medical services but who don't want to run their own clinics and seek more stable work hours. Swasth Health Centres[35] operates a clinic chain in Mumbai's slums and hires retired government doctors who are motivated to help lower income populations. These doctors appreciate having a fixed salary and not having to deal with administrative issues or night shifts.

- **Selective hiring processes**

  Some programs emphasised the importance of hiring motivated and qualified staff that have a passion for primary care and are committed to serving the community. Getting the hiring right at the outset and for all roles within the organization can support scale up. Ross Clinics[36], in Delhi, has a rigorous hiring process for clinic managers, who are an integral part of the model since they help to run the clinics, manage patients, and assist the doctor. In their interview process, they look for applicants that are highly motivated, excellent multitaskers, quick learners, and have good people skills.

- **Staff incentives**

  In addition to hiring motivated staff with the right skills, programs are offering incentives to attract and retain staff. This includes providing manageable and set working hours, a comfortable working environment, market rate salaries, performance rewards and team building activities. NationWide Primary Healthcare Services[37], a clinic chain in India, pays its doctors a fixed salary, and gives them a performance bonus based on patient satisfaction surveys, protocol adherence, and clinical outcome, which helps to maintain quality standards, improve patient satisfaction and outcome, and attract and motivate staff.

- **Staff training**

  Programs are also investing in a range of staff training programs, including informal on the job training and mentoring, together with online and in person training. NationWide actively recruits medical school graduates who are unable to obtain one of the limited specialist residency spots available in India, and provides them with specific family medicine training. Staff are also given the opportunity to write UK examinations and obtain a UK recognized certification in family medicine. Penda Health uses online programs to train staff on clinical practices, as well as in person training on medical techniques such as IUD insertion. CHADIK also uses web conferencing to allow access to medical experts and trainers who provided training remotely to its health workers. The Patan Academy of Health Sciences[38] strengthens the primary care ecosystem in Nepal by increasing the number of rural providers through its medical training program. It does this by giving preference to accepting, and providing scholarships to, students from rural areas, bringing rural medicine, such as an emphasis on certain infectious diseases, into the curriculum, and having students train in rural areas for 2-4 years.

- **Remote technology to connect patients with clinicians**

  Programs are using technology to connect patients (especially those in rural areas) with physicians located elsewhere. World Health Partners connects patients at their franchised providers in rural India with doctors at the Central Medical Facility in larger cities like Delhi and Patna using a video link supported by mobile phone, computer and Internet technology, and remote diagnostic tools designed by Neurosynaptic.[39] Health hotlines are also being used to connect patients and providers efficiently and affordably, facilitating teletriage, where hotline doctors can let patients know if further investigation is needed and connect them with a static clinic, local labs and pharmacies, if necessary. Mediphone[40] is a health hotline in India that allows clients to speak to doctors from a private hospital chain who can provide health information and prescriptions via SMS or email.

3.3 Leadership characteristics

A quarter of the programs we interviewed described aspects of leadership as important facilitators of scale up. Leaders with business skills and expertise in implementation, as well as passion and commitment to the success of the program, are particularly relevant to primary care.

[34] World Health Partners is a non profit health service delivery program that franchises existing clinics run by rural providers and uses technology to connect informal rural practitioners-SkyCare providers - with formal providers at their Central Medical Facilities in urban areas. It aims to provide quality, affordable health services, with an emphasis on infectious diseases, reproductive health and child health. The program began in 2009, and there are currently over 9,000 health centers in its network in Bihar and Uttar Pradesh, India. Recently, the program has expanded its operations into Kenya. http://worldhealthpartners.org/?p=2

[35] Swasth Health Centres operates a clinic chain in Mumbai's slums. Beginning in 2011, they describe their model as 5 D services (doctor, drugs, dental, daycare and diagnostics) at 50% of the market rate with 90% user satisfaction. In the last 3 years, Swasth has opened in 14 locations and they have over 50,000 families registered at their clinics. http://www.swasthindia.in/

[36] Ross Clinics is a for profit clinic chain in India that provides health services through family physicians, dentists and physiotherapists, with the aim of serving the whole family at affordable rates. Their clinics focus on primary care services, and provide vaccinations, dispense medications and conduct diagnostic tests. The program began in 2011 and currently operates 5 static clinics and 5 satellite clinics in India. http://www.rossclinics.com/

[37] NationWide Primary Healthcare Services is a chain of clinics in India that provides primary care services through general practitioners, pediatricians and gynecologists. It also provides laboratory, pharmacy, basic radiology and home health services and 24/7 on call telephone support line for its subscribed members. Starting in 2010, they currently have 15 full service clinics and 21 satellite clinics in Bangalore and Delhi. http://www.nationwidedocs.org/

[38] The Patan Academy of Health Sciences in Nepal is dedicated to rural medicine and training physicians that will practice in rural areas where 80% of the population is located. It focuses on training students from rural areas on issues that are prevalent in rural areas, and much of the training takes place in rural locales. In the first year, 2011, there were 2200 applicants for 50 places, http://www.pahs.edu.np/

[39] Neurosynaptic Communications is a technology company based in Bangalore, India founded in 2002 with the aim of developing technology to support healthcare for remote and rural populations. In 2008, it launched the Remote Medical Diagnostics (ReMeDi®) Medical Data Acquisition Unit (MDAU), a device that facilitates remote diagnosis by measuring and transmitting vital patient parameters, such as blood pressure, body temperature, oxygen saturation, heart sounds, electrocardiograph, and heart and pulse rate. Further, the recently launched mobile Tablet based mDOC solution enables healthcare workers to provide a wide range of diagnostics and remote consultations at the doorsteps of masses. Today, Neurosynaptic's remote diagnostics indirectly serve almost 50 million people around the world. http://www.neurosynaptic.com/

[40] Mediphone, which began in 2011, is a for-profit health hotline service in India that provides health advice for non-acute and minor ailments over the phone. Callers are connected with accredited doctors and nurses and are provided medical advice through teletriage. Services include first level medical advice, family planning, emergency referral, counseling, and nutrition guidance. The program now receives 2000 calls/day from its clients. http://www.airtel.in/mediphone/

Historically most low and medium income patients in less developed countries have been served by isolated primary care clinics set up by independent practitioners in individual communities. These (typically) small clinics run by country doctors are fairly simple to operate, but in the last 5-10 years more and more practitioners have recognized the need to scale up. Different approaches have emerged such as clinic chains, mobile clinics, health hotlines and telemedicine, but there are few established pathways for developing and expanding these operations, which are far more complex than running single clinics. Programs in the study noted the need for program leaders who have a combination of clinical and business experience, and the need for more help, and support, in meeting the challenges of scaling up primary care. As noted by the founder of one primary clinic chain: "there is not a lot of information out there on how to scale up a low margin business."[41] This is particularly the case for primary care, and our review found that much of the scale up literature focuses on scaling up vertical interventions on HIV/AIDS and reproductive health, with comparatively little guidance for primary care.

- Limited business experience of program and clinic leadership
- Pathways for expanding primary care operations not established

Scale catalysts (differentiators)

- Combination of medical and business skills

Scale promoters (contributors)

- Coaching and support for scaling up

Scale catalysts:

- **Combination of clinical and business skills**

  Our research found that while programs with leaders with medical backgrounds were not necessarily more likely to be successfully scaling, those with physician leaders who had experience or training in business were more likely to be in the successfully scaling group. The founder of Ross Clinics in India had initially assumed that providing quality care at a good price would bring people in. Finding this wasn't the case, he leveraged his business training to experiment with methods of generating demand, create client loyalty, and reduce costs, all of which facilitated program scale up. Similarly, the medically qualified founder of NationWide, another Indian clinic chain, holds an MBA, which focused on strategy and leadership. His business knowledge led him to recognize the importance of building a brand, and he hired a branding and marketing expert. He also developed a method of retaining family physicians to reduce operational risk and staff turnover.

[41] Founder of Viva Afya, Kenya.

Scale promoters:

- **Coaching and support for scaling up**

  Some program leaders, realizing that they have limited business experience and unable to pursue management training, are seeking assistance from other organizations and consultants with expertise in scaling health care programs. Although access to expertise in this relatively new field is limited, some support is emerging. Organizations we interviewed are participating in programs such as the International Partnership for Innovative Healthcare Delivery (IPIHD) network, for which programs apply and are selected by IPIHD to receive assistance with scaling their models through peer learning, business and strategy support and targeted connections with the investor community. Penda Health is a member of IPIHD's network, as well as the Social Entrepreneurship Accelerator at Duke (SEAD)[42] (of which IPIHD is a partner) and describes benefiting from the support and connections with investors. Several programs also participate in the CHMI Primary Care Learning Collaborative, a forum for sharing insight and knowledge on scaling up their primary care models with other practitioners.[43] At a recent meeting in India, 5 primary care programs were able to share innovative aspects of their operating models and explore together how to overcome challenges. The co-founder of Access Afya in Kenya told us that she had found this helpful, specifically the sharing of ideas on quality, facilities, and best practices in patient care, and that these programs now trust each other and work together to develop, improve and grow their services. And a Development Officer with LifeNet, a member of both IPIHD's SEAD and CHMI's Primary Care Learning Collaborative stated: "in my view, working with like minded organizations like CHMI and IPIHD have been really crucial to make LifeNet as strong as we are."[44]

3.4 Efficient and standardized processes

Developing efficient processes by standardizing procedures and ensuring access to medical supplies and drugs can be essential for scaling up healthcare services.[45,46] In particular, primary care programs describe the use of new technologies and streamlined processes to deliver efficiency in resource constrained settings.

[42] http://www.ipihd.org/sead

[43] http://healthmarketinnovations.org/document/chmi-primary-care-learning-collaborative-overview

[44] Development Officer with LifeNet, East Africa.

[45] Waddington, C. (2012) Scaling up health services: challenges and choices. HLSP Institute.

[46] UNICEF (2012) Review of systematic challenges to the scale up of integrated community case management emerging lessons & recommendations from the catalytic initiative (CI/IHSS). New York: UNICEF.

- Cost management in resource constrained contexts
- Maintaining quality and customer service

Scale catalysts (differentiators)	Scale promoters (contributors)
– Standardizing non clinical practices	– supply chain enhancements
– Franchising	– Investing in new technologies

Scale catalysts:

- **Standardizing non clinical practices**

  Programs that described standardizing clinical practices and using clinical protocols were not more likely to be scaling up successfully, nor were programs that described monitoring clinical protocol adherence. But, programs that described standardizing and measuring non clinical processes, such as basic clinic set up, staffing models, IT systems, time spent with clients, and branding, are more likely to be successfully scaling. For example, Swasth Health Centres in Mumbai has a standardized format and checklist, which helps in the complex process of starting up new clinics. Each 50-200 square foot clinic has the same branding, layout and staffing model - a doctor and a medical assistant, a dentist and a dental assistant and a receptionist. They offer the same basic services at each clinic, and have a standardized IT system.

- **Franchising**

  Franchising can provide a rapid way to scale up primary care models through standardized processes, quality monitoring, a support system, and clear implementation plans to assist franchisees that might otherwise be operating individual businesses without much experience or guidance. Living Goods[47] recruits and trains community health workers to be 'microfranchisees' to provide some basic curative and prevention services, while also selling medical products door to door. Living Goods provides health and business training, branding, a "business in a bag" with a uniform, record books and consumer goods. They also monitor quality through regular field visits and testing the knowledge of their franchisees. Programs are using franchising to improve the quality of existing clinics. LifeNet

[47] Living Goods is a non profit social enterprise, operating a network of franchised entrepreneurial community health workers. These workers support prevention and treatment for child health, nutrition, water, sanitation and hygiene, family planning and reproductive health while visiting door to door in poor communities. This support is provided through the sales of health products, provision of health education, and referrals to public and private health clinics. They sell treatments for malaria, diarrhoea, and pneumonia, as well as products like condoms, water filters and other health and personal care products at low prices, providing a modest living to these health workers. Started in 2007, Living Goods provides franchisees with business supplies, health and business training, mobile technology, monitoring and supervision. Their network currently includes 674 agents covering approximately 539,200 persons and has recently expanded from Uganda to Kenya. http://livinggoods.org/

franchises church based health centres with a focus on improving clinic performance through medical and management training, access to medical supplies and loans and professional branding. To track the progress of franchised clinics, it uses medical and management quality scorecards that are based on international healthcare standards and local Ministry of Health standards. The quality scorecards measure clinic performance at assessment visits that take place after each training module, which usually occur every 6 months.

Scale promoters:

- **Supply chain enhancements**

  Programs are also finding ways to improve access to medications and supplies and ensure that they are available where and when needed. LifeNet International franchisees are able to order medications in advance of a monthly training visit from LifeNet staff, who then bring the orders with them. This helps to project needs, reduce stock outs, and avoid unnecessary long distance travel by clinicians attempting to access medications. World Health Partners in rural India hires local people with motorcycles to replenish supplies in their network of pharmacies, and have also developed their own brand of medications, Sky Meds, which are made available to their own network at a fixed cost and sold to third party pharmacies. Programs such as Living Goods and Health by Motorbike send health professionals on foot or motorbike to visit houses door to door in communities to provide medications, health supplies and services.

- **Investing in new technologies**

  Programs are developing and using technology to improve efficiency and quality. North Star Alliance[48] uses Corridor Medical Transfer System (COMETS), a proprietary electronic passport system that transmits real time patient data to their clinics located along transport routes in Africa. COMETS uses biometrics to track patients and ensures that files and treatments are not duplicated. North Star also tracks disease patterns and collects demographic information, to help determine optimal locations for new centres. Programs are also developing and/or accessing novel technologies that address the challenges of unreliable electricity and connectivity. Dimagi's CommCare[49] tool is a cloud hosted, configurable mobile data collection platform that can be used by community health workers and others to efficiently gather patient data. Neurosynamptic's ReMeDi®, a remote diagnostic tool, captures patient data electronically and requires very low bandwidth to transmit. The device also needs very little battery

[48] North Star Alliance is a non profit organization operating along transport routes in South, West and East Africa that focuses on serving truck drivers, sex workers and communities near these transport routes. It creates clinics out of shipping containers and focuses on treatment of STIs and HIV, as well as TB, malaria and primary care services. It currently operates 32 Roadside Wellness Centres in 13 countries, with a goal of having 100 of these centres operational by 2015. http://www.northstar-alliance.org/

[49] CommCare is an mHealth solution developed by Dimagi to assist community health workers in the collection of patient data. This mobile phone based application helps to expand the technical capacity of community health workers, improving quality of care and health worker accountability by replacing paper-based collection tools. Dimagi began in 2002, and its CommCare product is now being used in 40 countries across 190 projects. http://www.commcarehq.org/home/

power and can draw on power from a USB port. Their mobile tablet based mDOC also operates on its own battery. Sevamob's[50] mobile clinics in rural India are connected to back office clinics and use software developed in house that can function well even with unreliable Internet access. Each mobile team collects data offline on tablets in the field, and syncs their devices when in the office. This allows them to share patient histories that can be accessed at the next visit.

3.5 Innovative income generation

In many LMICs, populations pay for medical treatments out of pocket and can struggle to pay these fees. The need to keep primary care services affordable is important to ensure access, and is even more crucial given the need to convince patients to visit primary care providers, rather than a pharmacy or specialist. As a result, innovative primary care programs have to keep consultation fees low to attract patients, and this can make it challenging to generate the funds needed to break even and expand. Almost half of the programs in this study described lack of financial support as a significant barrier to scale up. Several programs noted that primary care models take longer to break even than specialist practices, requiring patience and additional forms of financial support, including funding from donors and investors. As one program founder said: "the paybacks aren't going to be as fast, and the return on investment not as impressive initially." Funders need to understand that primary care programs may take longer to be profitable than other health interventions.[51] Programs need to be able to secure sufficient and sustainable financial resources to support scaling up and operate at scale.[52]

As well as working with supportive funders, programs are seeking alternative sources of revenue (selling products and services outside of traditional primary care services and medications) to underpin their primary care operations and expansion efforts. They are also developing alternative options for patients to pay for primary care services that are more affordable for their clients.

[50] Sevamob provides mobile clinic and primary care subscription services in periurban areas around Delhi, India. Mobile clinic teams led by dental doctors and sales reps will visit households and communities to provide care, and they are supported in backend offices by physicians, a 24/7 call centre and a network of service providers. The program began in 2011 and currently has 5000 mobile clinic subscribers and over 5000 telehealth subscribers. http://sevamob.com/gaon/

[51] Founder of Viva Afya, Kenya.

[52] Cooley, L., Kohl, R. (2006) Scaling up: from vision to large-scale change a management framework for practitioners. Arlington: Management Systems International.

- Price sensitivity means low margins
- Lack of sufficient financial support for scale up

Scale catalysts (differentiators)

- Alternative options for financing treatment
- Selling other products and services

Scale catalysts:

- **Alternative options for financing treatment**

  Programs that provide patients with payment options, other than straightforward fee for service, are more likely to be successfully scaling than those that do not. These include: microinsurance, such as that provided by Changamka Microhealth,[53] health plans, bundling services and subscription/membership fees. These last three options typically allow patients to save money by purchasing a number of consultations, lab testing and/or medications up front for a period of time, while guaranteeing clients for primary care programs. For example, clinic chains such as Ross Clinics, Healthspring and NationWide, sell family health plans that provide a number of consultations for the whole family for one price.

- **Selling other products and services**

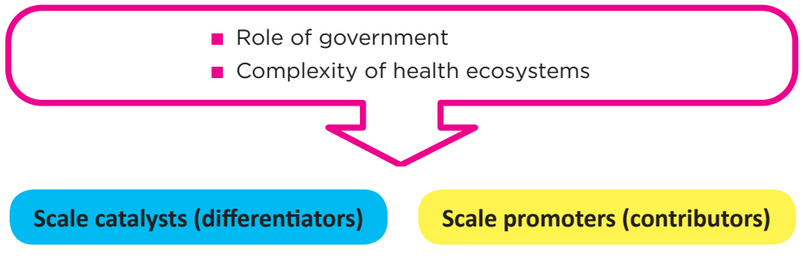
  Some programs are also developing alternative revenue streams by selling non clinical products and services to support their primary care work. The core focus of Amref, an international NGO, is to bring health to marginalized and poor communities, along with capacity building of health workers in Africa. But it supplements its income by providing evacuation insurance for travelers in remote areas. Health by Motorbike uses motorbikes to transport health professionals to rural areas, and rents them out to women for non medical purposes when the program does not require them. In India, primary care programs, including Swasth Health Centres, Vishwas,[54] and Sevamob have developed user friendly Electronic Medical Record (EMR) platforms and applications for primary care, which they sell to other providers.

[53] Changamka Microhealth provides affordable microinsurance for families in Kenya. The program began in 2009, and it incentivizes Kenyans to contribute to their health savings by providing discounts at partnered health care facilities for achieving savings milestones, and allows customers to use the mobile platform mPesa to contribute to their savings plans on their mobile phones. It currently has 37,000 subscribers. http://changamka.co.ke/

[54] Vishwas has been active in Mumbai since 2012. Its goal is to empower Indian family physicians, and it operates a model primary care centre in Mumbai, which offers a wide range of health promotion and chronic care programs. Vishwas also provides leadership training to family physicians and brings together doctors, designers, IT professionals and social scientists in an innovation lab to create and implement innovative healthcare solutions. http://vishwas.org.in/

3.6 Collaboration and partnerships

Many primary care programs work with other institutions and organizations, including funders, NGO collaborators, financial institutions, and businesses, to implement their projects.[55, 56, 57, 58] Partnering with the government can be particularly beneficial since the public sector often plays an important role in provision and regulation of primary care, especially for poor populations.[59] Government partners can provide financial resources, medical supplies, and access to health workers and a client base, activities that can considerably facilitate primary care program scale up. Programs in our study described working with partners, particularly the government and strategic partners, as an important enabler of scale up, and they noted several promising forms of these partnerships.



Scale catalysts:

- **Partnerships with organizations that give access to a customer base**

  This includes partnering with government entities and organizations such as corporations, NGOs, schools, and orphanages to provide health camps, check ups, access to doctors on call and/or on site, as well as health education programs to their client base. Such partnerships can include public private partnerships (PPPs) where a private program is hired to run government health centres with existing client bases. A successful example of this is Karuna Trust[60] in India, which initially ran 2 Primary Health Centres for the government and now manages 68 centres in 7 states.

[55] IPIHD (2013) Grand Aides profile. Durham, N.C.: IPIHD.

[56] Burleigh, E. (n.d.) Best practices in scaling up case study: Guatemala: Pro RedesSalud: rapid scale up of primary health care through NGOs. Boston: John Snow, Inc.

[57] IPIHD (2013) Grand Aides profile. Durham, N.C.: IPIHD.

[58] IPIHD (2013) NayaJeevan profile. Durham, N.C.: IPIHD.

[59] Rohde, J., Cousens, S., Chopra, M., Tangcharoensathien, V., Black, R. et al. (2008) 30 years after Alma-Ata: has primary health care worked in countries? The Lancet 372:950-961.

[60] Karuna Trust is a charitable trust established in India in 1986 to implement health programs for poor populations. Through PPPs, it manages state owned primary health centres that were performing poorly, and delivers curative, preventive, promotive and rehabilitative care to rural populations. It currently serves more than 1 million people through 68 primary health centres in 7 states in India, as well as 7 mobile health clinics. http://www.karunatrust.com/

Scale promoters:

- **Alignment and partnership with government**

  Many of the programs we interviewed described the importance of collaborating with different levels of government in support of their scale ambitions. Private primary care projects and programs often receive support and assistance from the public sector, either through contracting, PPPs, funding, provision of medical supplies and coordination and collaboration.[61, 62, 63, 64, 65, 66] Amref provides health services, including primary care, maternal and child health, and infectious diseases services, and works closely with the Ministries of Health in the African countries in which it operates. At the outset, Amref consults with the local Ministries of Health to see how its health projects fit into the government health plan. The organization also uses government infrastructure and provides training for government community health workers, on, for example, malaria and HIV/AIDS prevention training, to help build local capacity. Amref shares the results of their impact with government agencies to demonstrate what can be accomplished with government staff and infrastructure given the right support. Similarly, North Star Alliance works closely with the government in the countries where it operates roadside health centres, and it describes receiving immunization resources and nursing staff for one of their centres from one of their government partners. Other programs in our study described aligning with government policy priorities, collaborating on the design and implementation of primary care projects and receiving medical supplies from government partners.

Specifically, financial partnerships with government, both government contracts and PPPs, can be important for facilitating primary care scale up. In Brazil, the Health Secretariat in Rio recognized that PPPs have the potential to support primary care scale up in ways that the government, or indeed, a private entity could not do alone.

[61] Sultana, N. (2011) Kollyani; a community led health care program at tribal villages of Bandarban District, Bangladesh: A case study. ACCESS Health International, RTM International, Center for Health Market Innovations. Available from http://healthmarketinnovations.org/document/kollyani-community-led-health-care-program-case-study. Accessed 15 March 2014.

[62] Schellekens, O.P., Lindner, M.E., Lange, J.M.A., Van der Gaag, J. (2007) A new paradigm for increased access to healthcare in Africa.

[63] IPIHD (2013) ClickMedix profile. Durham, N.C.: IPIHD.

[64] Burleigh, E. (n.d.) Best practices in scaling up case study: Guatemala: Pro RedesSalud: rapid scale -up of primary health care through NGOs. Boston. John Snow, Inc.

[65] IPIHD (2012) APROFE profile. Durham, N.C.: IPIHD.

[66] Bridgespan Group (2007) Population Services International: funding growth. New York: Bridgespan Group.

Box 1: Clínicas da Família – Innovating to Scale Primary Care in Brazil

In 2008, the newly elected Mayor of Rio de Janeiro, Eduardo Paes, increased primary care coverage in the city from 3% to over 45% in less than 6 years to reach over 3 million people. To achieve this radical reshaping of the primary care landscape, the local government consulted extensively with other countries, adapting and adopting processes as needed. The local government primary health budget was increased by 400% and over 600 new family health teams (typically including 1 general practitioner, 1 nurse, 1 nursing technician, and 4 to 6 community health workers, each responsible for approximately 3,450 people) were established. This astounding increase in primary care provision was accomplished by taking an ecosystem approach that included:

Educating patients about the value of primary care: A significant investment has been made in community health workers, who are a vital link between the family health teams and the community because they are seen as community members who work for the health of the community. They interact with patients, but also integrate the clinic into the community by providing health outreach, meeting with community members at schools, churches, and daycare centres. This helps establish community acceptance of the clinics in new areas and catalyzes initial use through word of mouth.

Partnering with NGOs to overcome municipal bureaucracy: NGOs are used to help purchase equipment and contract staff, organizing everything from hiring/firing to procuring and maintaining power, infrastructure, IT systems, and general maintenance. The NGOs receive a fixed price per health team from the government every month and if the budget is not used, then it is returned, or the government pays less for the next funding round.

Investing in primary care training: Health care curricula were modified to meet the needs of the primary care system; a family medicine residency program and nursing program were added, and incentives were given for participating in family medicine training. The government is also partnering with universities to increase interest in primary care by giving medical students experiences in primary care clinics.

- **Partnerships with organizations that provide technical and operational support**

  Changamka and Mediphone rely on partnerships with telecom companies to deliver their services. Changamka provides microinsurance that can be paid for using mobile money through Safaricom's mPesa in Kenya. Mediphone is a health hotline and was developed through a partnership with AirTel, the largest telecom provider in India. The Patan Academy of Health Science trains medical students to work in rural Nepal, and has developed partnerships with Canadian universities to train their faculty members, while CHADIK has partnered with architectural companies interested in helping to design and develop clinical structures to help with patient flow.

4. PRIMARY CARE ECOSYSTEMS: INDIA AND KENYA

We conducted our field visits in India and Kenya as they have diverse primary health sectors, with active for profit and non profit players, and largely rural populations. However, the marked differences in their health ecosystems highlight the importance of taking a holistic, ecosystem approach when considering primary care scale up.

India is considered an "emerging economy", whereas Kenya's economy is struggling, with high consumer prices and unemployment rate (40%).[67] A greater proportion of Kenyans live under the poverty line than Indians, limiting their ability to fund out of pocket health expenditures. India has a greater supply of doctors and other trained health professionals, and India's technological infrastructure and tech industry are more advanced than in Kenya. However, in Kenya, the government plays a greater role in health care policymaking and provision than in India because there are fewer private players in the sector. There are some similarities between the countries. Both governments provide a range of no or low cost health services, often at over crowded facilities. They both have mostly rural populations, contributing to geographic and cultural access challenges. They both have decentralized health governance (although decentralization in Kenya is relatively new (2010), and the changes have created some turbulence for health organizations). There is a long tradition of informal providers in both countries, who, in many areas, have long delivered primary care, although the quality of such care is variable.

[67] Nation Master (2014) Country vs country: India and Kenya compared: economy stats. Available from http://www.nationmaster.com/country-info/compare/India/Kenya/Economy. Accessed 15 August 2014.

4.1 India's health ecosystem

India is home to numerous health innovations, and has a rich history of traditional healing and wellness. India's population of 1.2 billion (16% of the world) lives in 29 diverse states. An estimated 22% live below the poverty line.[68] And although about 70% of the population lives in rural areas[69], 74% of the 1.4 million qualified medical practitioners live in urban areas.[70] India has 0.7 doctors per 1,000 people.[71]

In 2012, public spending on health in India, as a percentage of GDP, was 1.3%, one of the lowest in the world.[72] Although the government runs (or contracts out) primary healthcare centres (1 per 25,000 population), which receive an incredible volume of patients[73], the vast majority of healthcare in India (about 70%), is paid for out of pocket, impoverishing an estimated 40 million every year.[74]

Non government sponsored primary care is provided by: unlicensed providers, Ayurvedic doctors, MBBS (Bachelor of Medicine/Bachelor of Surgery) doctors, some specialists (mainly paediatricians and gynaecologists), a few MBBS doctors who have specialty training in primary care (rare in India, because primary care specialty training is very new), auxiliary nurse midwives, nurses and ASHAs (Accredited Social Health Activist – community health workers who are accredited by the Government of India).[75] But these health human resources are unevenly distributed in India; there is an oversupply of MBBS doctors and specialists in many urban areas, driving down salaries; meanwhile, too few physicians live and practice in rural areas.[76] All of this contributes to a significant unmet need for primary care.

4.2 Innovative approaches in the Indian health ecosystem

We interviewed 21 diverse programs[77] operating in India, all of whom want to strengthen what they consider to be a weak primary care system. Successful programs are able to address the major ecosystem challenges in India, primarily the low prestige and value of primary care, compared to specialist care, given the historical emphasis on specialized care, and the need to collaborate with government to achieve scale when focusing on delivery to the poor. They are approaching this is a variety of ways:

- **By promoting primary care amongst physicians**
  - The Academy of Family Physicians of India (AFPI)[78] is an academic association of trained family physicians that focuses on supporting and promoting family medicine. It is seeking to address the lack of academic and professional growth opportunities available for primary care physicians compared to their specialist counterparts. AFPI encourages medical schools and universities in India to provide training in family medicine to increase the number of skilled family medicine providers and increase their integration into the health system.
  - NationWide hires MBBS doctors at its clinics and trains them in generalist care.
  - Vishwas aims to empower family physicians with tools and technologies to increase their efficiency, make their clinics more financially sustainable, and improve health outcomes.

- **By challenging perverse working practices**
  - Swasth Health Centres and Healthspring pay their doctors a fixed salary and will not allow them to accept fees for specialist referrals, which can result in unnecessary referrals.

- **By working with the government and supporting government programs**
  - Swasth Health Centres operates a DOTS centre[79] in Mumbai, in support of the government's Revised National Tuberculosis Control Program, out of one of its clinics. This is more efficient than the government setting up its own infrastructure.
  - Mediphone, the healthcare hotline, is working with 2 Indian state governments to provide improved non emergency helplines.
  - Karuna Trust has developed a PPP with state governments of India to run some of their most remote and difficult to operate facilities. Initially, Karuna took on the Primary Health Centre operations at a very low price to show what could be done. Having revitalized the Primary Health Centres, improved health outcomes and patient satisfaction, all at lower cost, the government agreed to invest more in their work.

- **By investing in technology**
  - India's strong IT sector has contributed to innovation in primary care. Of the 21 programs operating in India, 19 were using new technologies, such as EMRs, telemedicine and heath hotlines in their models.

4.3 Kenya's health ecosystem

Only a quarter of Kenya's 43 million people live in urban areas[80] and about 46% of Kenyans live below the poverty line.[81] There are 0.2 physicians per 1000 people, which is less than 1/3 that of India (0.7), and substantially lower than the ratios in developed economies such as Canada (2.1), the United States (2.4) and the United Kingdom (2.8).[82]

[68] World Bank (2014) World development indicators: India. Available from http://data.worldbank.org/country/india. Accessed 15 August 2014.

[69] WHO (2014) India. Available from http://www.who.int/countries/ind/en/. Accessed 15 August 2014.

[70] Sundararaman, T., Gupta, G. (2011) Indian approaches to retaining skilled health workers in rural areas. Bulletin of the World Health Organization 89(1): 73-77.

[71] WHO (2014) Global health observatory data repository. Available from http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF. Accessed 2 September 2014.

[72] World Bank (2014) Heath expenditure, public (% of GDP). Available from http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS. Accessed 2 September 2014.

[73] Johar, Z., Mor, N. (2012) The Lack of Primary Healthcare in India. The Economic Times. Available from http://articles.economictimes.indiatimes.com/2012-08-15/news/33216875_1_primary-care-primary-healthcare-higher-levels. Accessed 15 August 2014.

[74] Balarajan Y., Selvaraj, S., Subramanian, S.V. (2011) Health care and equity in India. The Lancet 377:505-515.

[75] ACCESS Health International (n.d.) Landscaping of primary healthcare in India. New York: ACCESS Health International.

[76] Kumar, R. (2014) Why family medicine is a good career choice for Indian medical graduates? Journal of Family Medicine and Primary Care 3(1): 1–2.

[77] Of the programs we spoke with: 17 were for profit, 3 were non profit, and 1 was a PPP. 10 programs ran static clinic chains; 3 programs ran mobile clinics; 7 programs provide a telehealth line or telemedicine services; and 5 were programs that do not directly provide primary care, but support primary care, through health education, microinsurance, advocacy, or developing health IT systems.

[78] The Academy of Family Physicians of India (AFPI) is a non profit organization that promotes the training and education of primary care doctors. Set up in 2010, it encourages the government and medical regulators to institute community (both rural and urban) based family medicine residency training programs at Indian medical schools as a method for recruiting and retaining family physicians. It also provides guidance to young doctors and professionals, and publishes the first peer reviewed journal on family medicine in India, the Journal of Family Medicine and Primary Care. http://www.afpionline.com; http://jfmpc.com/

[79] This is a tuberculosis treatment clinic, using the Direct Observation and Treatment Short course approach recommended by the WHO. These centres oversee the diagnosis, treatment, follow up and reporting of patients with tuberculosis. Disease monitoring and management help prevent the spread of TB.

[80] WHO (2014) Kenya profile. Available from http://www.who.int/gho/countries/ken.pdf?ua=1. Accessed 15 August 2014.

[81] World Bank (2014) World development indicators: Kenya. Available from http://data.worldbank.org/country/kenya. Accessed 15 August 2014.

[82] WHO (2014) Global health observatory data repository. Available from http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF. Accessed 2 September 2014.

In 2012, public spending on health care as a percentage of national GDP was 1.8%, higher than the 1.3% in India.[83] The Kenyan government spends about US $17 per person per year on health care, and the Indian government spends around US $20.[84] The government provides many types of health care for Kenyans, and user fees at government facilities were abolished in 2007.[85, 86] However, due to long wait times, geographic distance, and other access barriers and concerns about the quality of government health care and drug supply, many Kenyans use private (for profit and not for profit) health care. Of the 4,700 health facilities across the country, only 51% of them are part of the public system.[87] In fact, about 40% of health expenditure in Kenya comes from international (mostly not for profit) sources.[88] Out of pocket comprises 45% of health care spending in Kenya[89] and rural Kenyans spend more on health care than their urban neighbors once the cost of travel is considered.[90]

4.4 Innovative approaches in the Kenyan health ecosystem

We visited and/or interviewed 13 programs with operations in Kenya.[91] Two major challenges in primary care in Kenya are the lack of trained providers (about half of the physicians trained in Kenya leave the country) and the accessibility and affordability of care (given that almost half of Kenyans live below the poverty line and 3/4 quarters live in rural areas). The innovative primary care programs we interviewed are overcoming these challenges in a number of ways:

- **By using innovative staffing models**
  - Viva Afya compensates for a lack of qualified health workers by employing an experienced, licensed medical doctor, pharmacist and laboratory technician at its single hub location. Clinical officers and registered nurses employed at satellite clinics can refer to the hub office electronically for advice when providing diagnostics and treatment services to patients.

- **By making primary care more accessible**
  - North Star Alliance now operates a number of static roadside wellness centers providing basic health care services. Originally the program used mobile clinics to provide health care services to truck drivers travelling to remote areas via Kenya's major transportation corridors. It then expanded to provide care to sex workers living in the communities those truck drivers often stopped at, and emphasized treatment for sexually transmitted diseases such as HIV/AIDS. By opening services to the surrounding communities, North Star was able to encourage patients to seek appropriate care, overcoming the widespread stigma associated with HIV among the Kenyan population. The program continues to run promotional campaigns to educate an increasing number of Kenyans to use their services.

- **By introducing novel payment mechanisms**
  - Changamka MicroHealth has leveraged technology and the widespread use of mobile phones in Kenya to create a platform for the working poor to save, pay for and be insured for health care services. Another microinsurance organization, MicroEnsure,[92] is entering the Kenyan market to provide primary care coverage for poor communities. Both of these organizations seek to decrease the financial burden associated with out of pocket payments for thousands of Kenyans.
  - Viva Afya also aims to limit out of pocket spending by partnering with a number of micro-finance organizations to provide bundled services for one affordable payment a year.

- **By developing technology for primary care**
  - MicroClinic Technologies[93] has developed an EMR and IT platform for primary care health centres that help to automate processes and ensure standardized and efficient services.

Programs in India and Kenya are creatively addressing ecosystem barriers to primary care through championing primary care, partnering with the government to reach the very poor, finding creative staffing solutions, and reducing operating costs. These approaches are strengthening primary care in their respective ecosystems, helping achieve accessible and comprehensive quality care by developing new models and business solutions that are responsive and patient centred.

5. HARNESSING THE RESEARCH

Access to affordable, quality primary care is desperately needed in many parts of the world, particularly in resource constrained settings where basic curative and preventive services are severely lacking. Innovative programs are emerging to address this gap, and this research provides valuable insights on scaling up primary care in LMICs to serve more populations in need. Based on these research findings, we have developed a number of actionable recommendations for stakeholders in the primary care ecosystem.

[83] World Bank (2014) Heath expenditure, public (% of GDP). Available from http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS. Accessed 2 September 2014.

[84] World Bank (2014) Heath expenditure, public (% of GDP). Available from http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS. Accessed 2 September 2014.

[85] Chuma J., Okungu V. (2011) Viewing the Kenyan health system through an equity lens: implications for universal coverage. International Journal for Equity In Health 10(22).

[86] Toda, M., Opwora, A., Waweru, E., Noor, A., Edwards, T.,Fegan, G., Molyneux, C., Goodman, C. (2012) Analyzing the equity of public primary care provision in Kenya: variation in facility characteristics by local poverty level. International Journal for Equity in Health 11(75).

[87] Ramana, G.,Chepkoech, R., Workie, N.W. (2013) Improving universal primary health care in Kenya: a case study of the health sector services fund. UNICO Studies Series 5. Washington, D.C.: World Bank.

[88] WHO (2014) Global health expenditure database. Available from http://apps.who.int/nha/database/ViewData/Indicators/en. Accessed 2 September 2014.

[89] WHO (2010) Kenya fact sheet of health statistics. WHO: Geneva.

[90] Chuma, J., Okungu, V. (2011) Viewing the Kenyan health system through an equity lens: implications for universal coverage. International Journal for Equity in Health 10(22).

[91] Six of the 13 programs are for profit; 7 are non profit. Two of the non profit organizations are social franchises. Ten of the 13 programs directly provide primary care either through clinic chains or mobile health camps. Two programs provide microinsurance schemes; 1 is a health IT company.

[92] Launched in 2002, MicroEnsure is an insurance intermediary with a focus on introducing new forms of affordable insurance protection for poor populations. It partners with organizations that serve the poor, such as rural banks, microfinance organizations and humanitarian organizations, and has developed a variety of insurance and microinsurance products. It now serves more than 10 million clients, with several recent microinsurance products that focus on primary care coverage. http://www.microensure.com/

[93] MicroClinic Technologies, founded in 2011, provides affordable technology for dispensaries and health centres in the primary care sector. ZiDi, its flagship project, is a software platform that aggregates patient data through electronic medical records, and automates financial management, stocktaking, personnel administration and service delivery, helping to standardize quality health care. It is currently working with the Ministry of Health to scale up adoption of the technology by over 4000 clinics across Kenya. http://www.microclinictech.com/

5.1 Rapid Routes to Scale stakeholder group

This research has brought together a group of stakeholders from NGOs, academia, and the pharmaceutical sector that are uniquely positioned to support scale up of innovative primary care programs in LMICs through collaboration and harmonization of activities. The group have discussed specific and actionable recommendations, which have the potential to deliver real and lasting impact. In the coming months the group will be choosing the best next steps.

5.1.1 Put insights into practice by supporting a few high potential programs

Recommended Actions

- Selection process to identify high potential primary care programs
- Due diligence and gap analysis
- Tailored development plans focused on building the 6 key scale mobilizers
- Implementation support
- Monitoring, evaluation and learning

5.1.2 Consolidate knowledge to provide practical advice

Recommended Actions

- Consolidate findings into concrete guidance:
  - "Patient relationship building"
  - "Primary care staffing guide"
  - "Golden rules" for investors, donors and policy makers
  - Resource guide: low cost high impact technology and processes

5.1.3 Location specific ecosystem development

Recommended Actions

- Select a high potential program in a specific country/region
- Work with stakeholders throughout the ecosystem to facilitate scale up

5.2 Scale up challenges and recommendations for primary care stakeholders

We have also identified a number of actionable recommendations for primary care stakeholders, including primary care programs, funders, and government and policymakers. Around each principle scale up challenge for primary care, we have highlighted specific actions that individual stakeholder groups can make.

5.2.1 Lack of understanding, and under valuing, of primary care in LMICs

Stakeholders	*Recommended Actions*
Primary care programs	– Engage in market research activities to better understand the needs and interests of clients, and share findings with other primary care stakeholders – Build consumer relationships by providing a quality experience for patients, strengthening branding/marketing, investing in community mobilizers and health education, and constantly adapting to communities' needs
Funders (donors and investors)	– Provide funding for programs to engage in relationship building activities with consumers – Share market insights on the needs and interests of local communities to help build greater acceptance of primary care
Government and policymakers	– Engage in health education campaigns with other stakeholders to highlight the value of primary care, especially prevention and health promotion
All	– Invest in further research on primary care in different contexts and identify successful approaches to engage with communities to promote primary care in different settings – Consolidate available knowledge to provide practical advice (e.g. toolkits) for primary care programs on building relationships with clients and communities

5.2.2 Lack of skilled primary care health workers

Stakeholders	*Recommended Actions*
Primary care programs	– Implement appropriate staffing models based on local human resource limitations and regulations (non doctor staffing models, staff incentives, training, hiring doctors from alternative demographics) – Invest in using technology to connect providers and patients
Funders (donors and investors)	– Support capacity building initiatives such as training and skills development
Government and policymakers	– Collaborate with funders, educational institutions, and primary care programs to support the training of more primary care doctors and health providers
All	– Invest in further research on innovative and appropriate staffing models for primary care in different contexts – Consolidate available knowledge to create a "staffing guide" to help programs identify types of staff, potential staffing models, and recruitment and retention strategies

5.2.3 Lack of expertise in primary care scale up

Stakeholders	*Recommended Actions*
Primary care programs	– Engage in business training and connect with scale experts
Funders (donors and investors)	– Invest in, and facilitate access to coaching, consulting support, research networks and learning collaboratives
Government and policymakers	– Support health provider training programs in primary care that include medical and management/entrepreneurial components
All	– Consolidate available knowledge to provide practical advice (e.g. toolkits) on practical management activities to support primary care scale up

5.2.4 Increasing efficiency

Stakeholders	*Recommended Actions*
Primary care programs	– Invest in standardizing non clinical processes, supply chain enhancements and new technologies
Funders (donors and investors)	– Support primary care programs in implementing standardized processes to improve quality and efficiency of services – Support technology companies developing affordable healthcare tools for connecting providers, managing data, standardizing processes and inventory management
Government and policymakers	– Work with organizations throughout the health ecosystem to develop health infrastructure and supply chains
All	– Consolidate and share available information about low cost technology solutions that support standardization and efficiency in primary care

5.2.5 Generating/accessing sufficient and sustained funding for scale up

Stakeholders	*Recommended Actions*
Primary care programs	– Consider income generating opportunities beyond fees from patient consultations and medications – Provide patients with alternative financing options such as health plans and microinsurance
Funders (donors and investors)	– Provide funding specifically for primary care scale up – Fund and support smaller high potential primary care programs
Government and policymakers	– Work with programs to have public insurance for the poor accepted by more private sector programs
All	– Consolidate available knowledge to create “Golden Rules” for investors, donors and policy makers interested in primary care scale up – Invest in further research on how primary care programs can be financed to support scale up – Invest in further research to identify cost effective primary care models for specific settings

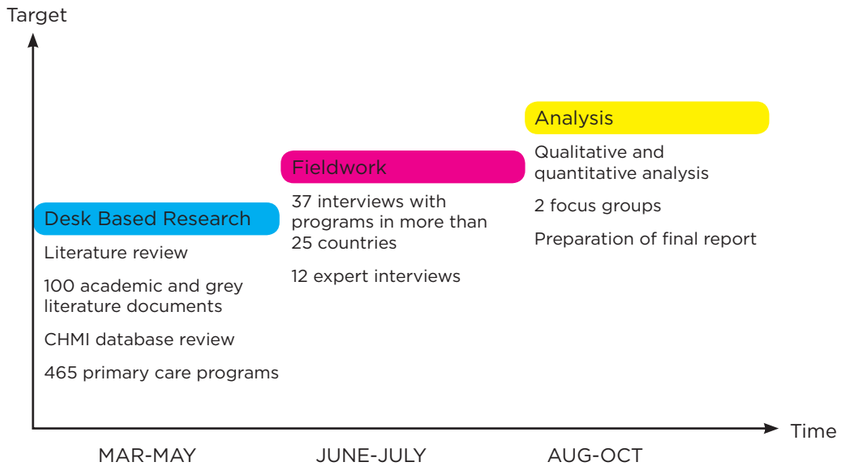
5.2.6 Developing beneficial partnerships

Stakeholders	*Recommended Actions*
Primary care programs	– Build partnerships with government to ensure alignment with government priorities, and to access technical and operational support – Build partnerships with organizations that can connect services with a client base
Funders (donors and investors)	– Facilitate and support partnerships between programs and organizations with similar aims and mutually beneficial activities
Government and policymakers	– Develop PPPs with programs able to serve poor patients effectively and efficiently in areas where the government has been unable to do so – Facilitate collaboration with other funders, primary care programs and government entities to harmonize activities in primary care
All	– Invest in further research on how the private sector can successfully collaborate with government in primary care and how to develop and implement these partnerships

The Rapid Routes to Scale research provides invaluable insights on scaling up primary care for LMIC populations. It is clear that an ecosystem approach, which brings together relevant stakeholders to take collective action, is needed for transformative change. Scaling up primary care requires collaboration and commitment amongst the key actors in this health area and we hope this research will play a part in improving the health of millions in the developing world.

APPENDIX A: RESEARCH APPROACH

Figure 1: Overview of research process



Desk based activities:

Literature Review

Our team began with a review of the relevant literature on primary care and scale up, performance measurement, ecosystems, and innovation. We considered over 100 peer reviewed articles and reports from the grey literature to identify the key factors that influence scale up of primary care in LMICs, including investing in human resources, engaging in efficient processes, adapting to local communities and seeking government support.

Database review

We then reviewed the 465 primary care programs in the CHMI database.[94] Programs were coded according to 3 dimensions:

[94] CHMI, which is managed by the Results for Development Institute, curates a database on organizations dedicated to improving privately delivered health care for the poor in LMICs. Over 1200 organizations operating 106 countries are represented in this database.

Table 2: Coding factors for database review

1. Type of primary care provision	2. Evidence of scaling up over time (increase in coverage and/or impact)	3. Characteristics of scalability
a. Comprehensive primary care	a. Increase in number of clients served	a. A clear theory of change
b. Selective primary care	b. Increase in number of facilities	b. Access to financial resource
c. Strengthening primary care systems	c. Increase in number of countries in which the program operates	c. Partnerships
	d. Increase in number of services offered	d. A simple and standardized design
	e. Increase in number of employees	e. Goals or targets for scale up
	f. Increase in clinical quality	f. Replication from another program
	g. Increase in user satisfaction	g. Sufficient staff supply
	h. Increase in output	h. Engaging with the local community
	i. Increase in geographic access/ availability	i. Franchise design
	j. Increase in outcome	j. Operating in the pilot or expansion stage
	k. Increase in efficiency	
	l. Increase in population coverage	
	m. Increase in equity or pro-poor targeting	
	n. Increase in affordability	

Qualitative interviews and field visits

The CHMI database review confirmed that India and Kenya were the top 2 countries of operation for primary care programs. We identified a group of innovative primary care programs with evidence of scaling up or promising scale up strategies in Kenya and India, which were selected for field visits. In depth phone interviews were also conducted with programs in other countries, such that we conducted a total of 37 interviews with programs operating in more than 25 countries. We also conducted in depth interviews with 12 experts in primary care and scale up, including donors, investors, academics and individuals with scale up expertise in other health areas.

Qualitative and quantitative analysis

Interviews were documented and coded for key themes identified by the research team. Coder reliability was tested halfway through the coding process and with 81% reliability, the remainder of the interviews were coded with a high level of confidence. The research team met regularly to discuss emerging ideas with ICSF, IPIHD and CHMI. To support the analysis, we identified 4 program categories:

Table 3: Categorization of interviewed programs

Program category	Number of Programs
Programs that are in the pilot/testing phase	7
Programs that are successfully scaling up	20
Programs that have had recent set backs/challenges in scaling up	8
Programs that are no longer active	2

We then looked at the key factors described as influencing primary care scale up in the literature and in discussions with program and experts, and assessed whether they were more likely to be associated with programs in the successfully scaling group compared to those that are not (not including those still in the pilot phase that have yet to focus on scaling up). This allowed us to identify 6 mobilizers of primary care, each with factors found to catalyze or promote scale up of primary care programs.

[95] International indicates a program operates in more than 15 countries.

APPENDIX B: OVERVIEW OF PROGRAMS INTERVIEWED

Table 4. Primary care programs interviewed

Program Name	Description	Country of Operations	Website
Academy of Family Physicians of India	Non profit organization promoting family medicine and advocating for increased opportunities for primary care doctors.	India	http://www.afpionline.com
Access Afya	For profit clinic chain offering basic clinical and prevention services.	Kenya	www.accessafya.com
Alchemist Clinics	A chain of primary health clinics and eye hospitals being developed for rural areas.	India	www.alchemistclinics.com
Amref Health Africa	An international non profit that provides health programs and builds health worker capacity in Africa.	International [95]	http://amref.org/
Anonymous program	For profit clinic chain. No longer in operation.	India	
Bangladesh Second Urban Primary Care Project	PPP developed between government and non profit organizations to deliver primary health care services through clinics and health centres.	Bangladesh	http://uphcp.gov.bd
Changamka MicroHealth	Provides affordable microinsurance and allows for payment through the mobile platform mPesa.	Kenya	http://changamka.co.ke
Clínicas da Família	PPP between the municipal government and local non profits involving a clinic chain and family medicine residency program.	Brazil	www.rio.rj.gov.br/web/sms/clinicas-da-familia1
Community Health Africa Trust (CHAT)	Non profit providing mobile clinics to remote and poor areas through backpack nurses, medical teams traveling by truck, and camel caravans.	Kenya	www.chatafrica.org
Dimagi	Social enterprise developing low cost technologies such as CommCare, a configurable mobile data collection platform for community health workers.	International	www.commcarehq.org/home

Program Name	Description	Country of Operations	Website
Children's Health and Development in Kenya (CHADIK)	Non profit providing outreach clinics to remote and poor areas with a focus on children and mothers.	Kenya	www.chadik.org.uk
Health by Motorbike	Non profit health outreach program that sends a local health professional by motorbike to remote communities.	Kenya, Tanzania	http://healthbymotorbike.wix.com/healthbymotorbike
Healthspring	For profit clinic chain with an emphasis on preventive medicine.	India	www.healthspring.in
Institute of Health Management, Pachod and Pune (IHMP)	Non profit organization providing health and development programs with village communities.	India	www.ihmp.org/index.html
Karuna Trust	A charitable trust serving poor populations through PPPs.	India	www.karunatrust.com
Kriti Arogya Kendram	For profit clinic chain. No longer in operation.	India	
Lifebuoy Friendship Hospital	Non profit providing primary and secondary health care to remote communities through floating hospitals developed from retired barges.	Bangladesh	http://friendship-bd.org
LifeNet International	Non profit that franchises local clinics to improve population health.	Burundi, East Africa	www.lninternational.org
Living Goods	Non profit franchise of entrepreneurial community health workers that sell health products and provide health information door to door.	Kenya, Uganda	http://livinggoods.org
mDhil	For profit that promotes health awareness through online and interactive digital content.	India	www.mdhil.com
MediAngels	For profit providing primary and speciality care through integrating telemedicine, virtual healthcare, and patient diagnostic devices.	International	www.mediangels.com
Mediphone	For profit health hotline service.	India	www.airtel.in/mediphone
MeraDoctor	Health hotline and medical discount service	India	www.meradoctor.com
MicroClinic Technologies	A technology company developing affordable technology for primary care health centres.	Kenya	www.microclinictech.com

Program Name	Description	Country of Operations	Website
MicroEnsure	An insurance intermediary that develops affordable insurance protection for poor populations.	Bangladesh, Burkino Faso, Ghana, India, Kenya, Malawi, Malaysia, Mozambique, Nigeria, Pakistan, Philippines, Rwanda, Tanzania and Zambia	www.microensure.com
NationWide Primary Healthcare Services	For profit clinic chain providing services through general practitioners, paediatricians and gynaecologists.	India	www.nationwidedocs.org
Neurosynaptic Communications	A technology company developing tools to support healthcare for remote and rural populations.	International	www.neurosynaptic.com
North Star Alliance	Non profit operating roadside clinics along transport routes in South, West and East Africa.	Botswana, Democratic Republic of the Congo, Kenya, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, the Gambia, Uganda, Zambia, Zimbabwe	www.northstar-alliance.org/
Patan Academy of Health Sciences	Medical training program focused on rural medicine.	Nepal	www.pahs.edu.np
Penda Health	For profit clinic chain with a focus on serving women.	Kenya	www.pendahealth.com
Ross Clinics	For profit clinic chain providing services through family physicians, dentists and physiotherapists.	India	www.rossclinics.com
Sevamob	For profit mobile clinic and primary care subscription service.	India	http://sevamob.com/gaon
Swasth Health Centres	For profit clinic chain serving Mumbai's slums.	India	www.swasthindia.in
Vaatsalya Healthcare	For profit hospital and clinic chain providing affordable healthcare to less served areas.	India	www.vaatsalya.com/2014
Vishwas	Primary care program focused on leadership training for family doctors.	India	http://vishwas.org.in
Viva Afya	For profit chain of primary care clinics serving densely populated, low income areas.	Kenya	www.vivaafya.co.ke
World Health Partners	Non profit that franchises existing clinics in rural areas and uses technology to connect providers and patients.	India, Kenya	http://worldhealthpartners.org

Table 5: Experts Interviewed

Expert Organization	Description	Website
ACCESS Health International	Non profit think tank and consulting group focused on health systems, health care finance and medical processes.	http://accessh.org/
Acumen Fund	Impact investor.	http://acumen.org/
Africa Capacity Alliance	African capacity building organization focused on strengthening health and community systems.	http://africacapacityalliance.org/
Africa Medicines Impact Investment Fund	Impact investment fund implemented by the Southern African Regional Programme on Access to Medicines and Diagnostics (SARPAM).	http://amiif.sarpam.net/
Bill & Melinda Gates Foundation	Global health funder.	www.gatesfoundation.org/
Excelsior Group	Impact investor.	http://excelsior-group.com/
Grand Challenges Canada	Funder of health innovations in LMICs and Canada.	www.grandchallenges.ca/
Mobile Telemedicine Clinics Project	Telemedicine program to be developed in rural Kenya.	www.medishareafrica.org/
Population Services International - India	Non profit scaling health interventions in infectious disease, reproductive health, and child survival.	www.psi.org/india
SickKids Centre for Global Child Health	Independent research centre engaged in capacity building, advocacy and knowledge translation in global child health.	www.sickkids.ca/globalchildhealth/index.html
Swasti	A health resource centre combining research and practice to achieve improved health outcomes for the socially excluded and poor.	www.swasti.org
University of Cape Town Lung Institute: Knowledge Translation Unit - PALSA Plus	Guideline and training program developed to assist nurses in diagnosing and managing respiratory illnesses in primary care contexts.	http://knowledgetranslation.co.za/programmes/palsa-plus/

Types of primary care

The primary care programs we interviewed are involved in a diverse range of primary care activities: clinic chains, mobile clinics, microinsurance, policy development, supply chain enhancements, training health workers, developing health awareness, and developing and using new technologies in primary care.

Primary care programs can be engaged in directly providing services to patients or they can support the primary care ecosystem by: training health workers; developing technologies for primary care programs; developing infrastructure and supply chains; engaging in advocacy and policy around primary care; developing and disseminating health information; or developing financial mechanisms that help patients pay for primary

care services. Nine programs were only strengthening and not involved in direct delivery of services to patients. Twenty eight programs were involved in direct provision of services. Of those directly providing care to patients, 18 were providing comprehensive care, which involves a wide range of preventive and curative health services, while 10 were providing selective care, which involves a more limited offering of curative primary care services with an emphasis on particular health areas.

Table 6: Types of primary care provided by programs

Total number of programs	37
Direct provision of care and strengthening primary care	28
Only strengthening primary care	9

Table 7: Types of direct provision of care by programs

Total number of programs directly providing care	28
Comprehensive care	18
Selective care	10

Legal Status

All programs interviewed operate in the private sector or in collaboration with the private sector: 22 for profit, 12 non profit, and 3 programs operating as PPPs.

Geography Served

Almost half of the programs interviewed described serving populations in more than one geographical area (15/37; 41%): 26 operate in rural areas, 25 operate in urban areas and 12 operate in periurban areas. Eleven programs only operate in rural areas, while another 11 only operate in urban areas.

Population Served

Of the 31 programs providing data on income segments served, most in this study (24/31; 77%) described serving populations in the 20%-40% income quintile, while very few serve clients in the 80%-100% quintile group. More than half (20/31; 65%) serve the bottom 20%. Almost all programs serve multiple quintile groups (25/31; 81%), and half (17/31; 55%) serve clients in both the 20%-40% and 40%-60% quintile income range.

Start Date

The programs we studied began their operations between 1957 and 2014, with 76% (28/37) established in the last 10 years.

Results for Development Institute (R4D) is a non-profit organization whose mission is to unlock solutions to tough development challenges that prevent people in low and middle income countries from realizing their full potential. Using multiple approaches in multiple sectors including, Global Education, Global Health, Governance and Market Dynamics, R4D supports the discovery and implementation of new ideas for reducing poverty and improving lives around the world.

The Center for Health Market Innovations (CHMI), a flagship program of R4D, promotes programs, policies and practices that make quality health care delivered by private organizations affordable and accessible to the world's poor. Managed by Results for Development, CHMI works through regional partners around the world. Details on more than 1,200 innovative health enterprises, nonprofits, public private partnerships, and policies can be found online at HealthMarketInnovations.org.

GSK make innovative medicines, vaccines and consumer healthcare products that are used by millions of people around the world, allowing them to do more, feel better and live longer.

The products GSK develop and manufacture and how they do this contributes directly to the health of patients and consumers, and indirectly to the wider well-being of the economy and society. GSK has been fundamentally changing in recent years to create a more balanced business to address market challenges and deliver sustainable performance and returns for shareholders.

GSK are committed to generating that performance in a responsible way.

"Nearly every problem has been solved by someone, somewhere. The frustration is that we can't seem to replicate (those solutions) anywhere else." Bill Clinton

The International Centre for Social Franchising works with public, private sector and social pioneers to tackle the issue of scale. Its mission is to help the most successful social impact projects replicate.

We know organizations delivering community-transforming work can spend a lot of time and precious resources finding, and applying, the right solutions. Many are reinventing the wheel. Our role is to streamline this process, helping organizations get replication right the first time and achieve the change they want to see in the world. Using a combination of successful and tested commercial and social principles while drawing on extensive expertise, we help organizations identify, design and implement the right social replication model, enabling them to solve social

The International Partnership for Innovative Healthcare Delivery (IPIHD) is an impact driven nonprofit dedicated to increasing access to cost-effective and high quality healthcare around the world. IPIHD supports a diverse and global network of healthcare innovators, industry leaders, funders, and governments. Founded in 2011 by the World Economic Forum, McKinsey & Company, and Duke University, and supported by corporations, foundations, and governments, IPIHD works directly with organizations bringing to market transformative solutions that increase access to affordable high quality care. IPIHD provides targeted programming, connections, and resources

to help these innovators scale and replicate their models. The knowledge that IPIHD gains from research and working directly with the innovators is translated into insights and reports used to increase understanding of the potential of innovations to transform health systems globally. The IPIHD network includes more than 40 innovators and 15 corporate and foundation supporters.

Merck & Co., Inc., known as MSD outside of the United States and Canada, is an innovative, global healthcare leader that is committed to improving health and well-being around the world. Our product offering categories include heart and respiratory health, infectious diseases and women's health. We continue to focus our research on conditions that affect millions of people around the world - diseases like Alzheimer's, diabetes and cancer - while expanding our strengths in areas like vaccines and biologics. We also devote extensive time and energy to increasing access to medicines and vaccines through far-reaching programs that donate and deliver our products to the people who need them. At Merck, we're applying our global reach, financial strength and scientific excellence to do more of what we're passionate about: improving health and improving lives.

Merck is a leading company for innovative and top-quality high-tech products in the pharmaceutical and chemical sectors. Around 38,000 employees work in 66 countries to improve the quality of life for patients, to further the success of our customers and to help meet global challenges. We operate our businesses in four divisions: Merck Serono (biopharmaceuticals), Consumer Health (over-the-counter pharmaceuticals), Performance Materials (high-tech chemicals) and Merck Millipore (life science tools). Merck is the world's oldest pharmaceutical and chemical company. Since 1668 the Merck brand has stood for innovation, business success and responsible entrepreneurship. Merck is committed to expanding sustainable access to high quality health solutions for underserved populations in low and middle income countries by leveraging Merck core competencies, expertise, knowledge and experience across the health value chain in order to address barriers in access to health in developing countries. We aim to achieve this goal through a strategic focus on our Four As of Access: Availability, Affordability, Awareness and Accessibility. Availability entails R&D and refinement of health solutions to address unmet needs tailored to local environments. Affordability is assisting those who are unable to pay for needed health solutions. Awareness is the empowerment of people with appropriate tools & knowledge to make informed decisions. Accessibility entails the strengthening pf supply chains and development of localized health solutions. We recognize that we cannot work alone to address all the access gaps. We believe that partnerships, collaboration and dialogue are key to delivering sustainable access results and making great things happen.

Novo Nordisk is a global healthcare company with 90 years of innovation and leadership in diabetes care. The company has also leading positions within haemophilia care, growth hormone therapy and hormone replacement therapy. Headquartered in Denmark, Novo Nordisk employs approximately 40,700 employees in 75 countries, and markets its products in more than 180 countries.

Novo Nordisk applies the Triple Bottom Line business principle, and is accountable for the social and environmental performance as well as the financial performance. The Triple Bottom Line approach ensures that Novo Nordisk considers the impact of its actions on people, communities and the environment. In this way Novo Nordisk pursues business solutions that maximise value for all of its stakeholders and engages with society at large as it continues the work to prevent, treat and defeat diabetes.

Changing Diabetes® is the Novo Nordisk response to the global diabetes challenge. As the world largest insulin producer Novo Nordisk is committed to improving access to diabetes care. We are working with partners around the world to increase diabetes awareness and improve access to care and treatment options. For more information please visit www.changingdiabetesaccess.com

Save the Children works in more than 120 countries. We save children's lives. We fight for their rights. We help them fulfil their potential. Our vision is a world in which every child attains the right to survival, protection, development and participation. We've made dramatic progress in the last ten years in reducing child deaths, increasing the numbers of children in school and lifting millions out of poverty. Our three tier approach, known as our Theory of Change is our strength by directly helping millions of children through our world class programmes on the ground, collecting the evidence of what works to convince others to replicate this on an enormous scale and mobilising millions of people around the world to show they care and demand others fulfil their responsibilities too.

To achieve our ambitious plans we need to integrate our three strategic pillars so they support each other and maximise our impact by developing world class programmes; by becoming the cause of millions and by building an outstanding organisation. We need to find new ways of working and try fresh approaches – be collaborative, creative, ambitious, agile and open to new ideas and possibilities.

Our mission is to inspire breakthroughs in the way the world treats children, and to achieve immediate and lasting change in their lives. If we are successful we will have dramatically changed the world for children.

Toronto Health Organization Performance Evaluation (T-HOPE) is a research team composed of a diverse group of medical, management, and social science experts based at the University of Toronto's Rotman School of Management and Department of Family and Community Medicine. This interdisciplinary research team combines health and management experience and expertise with the aim of connecting theory to practice in the field of global health innovation and performance. Bringing together MBA students and medical residents to solve real world global heath challenges, this research group is led by Dr. Onil Bhattacharyya, Frigon-Blau Chair in Family Medicine Research at Women's College Hospital and Associate Professor in the Department of Family and Community Medicine at the University of Toronto, as well as Dr. Anita McGahan, Associate Dean of Research at the Rotman School of Management, University of Toronto, and Dr. William Mitchell, Professor of Strategic Management at the Rotman School. By engaging in rigorous and responsive research, the team strives to improve performance reporting of innovative health programs, understand and promote the scale up and sustainability of high-impact health initiatives, and identify successful innovations for improved health quality and access in low and middle income countries (LMICs).