Landscaping of Primary Healthcare in India

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Executive Summary

This landscape review of primary care services in India documents the state of primary care delivery and highlights a handful of initiatives that can inform the design of a future system. The study comprised a desk review of published and grey literature, as well as interviews and visits with nearly fifteen organizations.

Amid a growing and changing demography, large gaps remain in the ability of India to ensure equitable access to quality healthcare and to improve health outcomes. The public health system in India is unable to alter significantly the face of healthcare delivery as it stands. Consensus is emerging on the need to prioritize primary healthcare as the foundation for health reforms, to focus on prevention and community centered care that will act as a hub for hospital and specialist care, to improve access and equity through risk pooling, and to improve system oversight and governance. Primary care broadly encompasses preventive, promotive, curative, and rehabilitative care for both acute and chronic illness. Primary care varies in scope according to local need.

Our review is structured around four pillars that are considered important to a well functioning primary care system: service delivery (with a focus on networks), financing, community engagement, and governance. We map out the current state of each pillar in aggregate terms, across the country, identify notable initiatives based on secondary and published data, and finally, delve into a discussion that incorporates findings from our primary research. Below is a summary synthesizing our findings from both the secondary and primary research.

Service Delivery

Service delivery constitutes four broad, interrelated components: the scope of services offered, the people who provide the care, the quality of services rendered, and how technology plays a role. In general, service delivery in India is dominated by the private sector, in the form of ambulatory or outpatient care, and is typically provided by informal providers. Poor infrastructure, staffing, and quality in the public sector are some of the drivers for high use of private sector services.
**Scope of Services**
Curative care is the norm in India, with limited focus on prevention and screening. Unnecessary hospitalizations and excessive use of medication, especially nongenerics, compromise the effectiveness of care and escalate its cost.

**Quality of Care**
With few exceptions, the public and private sectors are characterized by poor service quality, in terms of effectiveness, safety, and patient centeredness. Poor quality stems from a lack of provider incentives to promote quality, weak regulation and oversight, and limited ability by consumers, particularly the poor, to distinguish and demand quality.

**Human Resources**
The health workforce is constrained in numbers and skewed against rural areas. Training and recruitment have typically been doctor centric, at the cost of adequately supporting nursing, midwifery, allied professionals, rural medical providers, and those trained under Indian Systems of Medicine.

**Technology**
Use of technology in both public and private sectors is growing to manage information and data, such as patient records and disease surveillance. Technology is also used in telemedicine to connect clients with medical providers. However, questions prevail about the cost and returns of using technology – particularly where it involves a client interface – given low acceptance levels. Challenges exist around interoperability and standards.

In our primary research, we learned that all of the organizations have unique definitions of what constitutes primary care – ranging from prevention, to maternal health, emergency services, dental, and mental health services. The choice is based on local need, the availability of comparable services in the community, and the focus of the particular organization. We did observe that a number of organizations are working to shift people’s orientation from reactive to proactive care. The organizations also report that changing behavior takes time and continuous engagement. Quality seems to be a larger focus for the smaller, centrally owned organizations that have invested heavily in training, performance systems, and measurement.

The design of health worker incentives has a strong bearing on quality as well. Many organizations are using community health workers. The organizations are
devising strategies to motivate doctors and other professionals to work in the community. These organizations face numerous challenges. Technology is advancing efficiencies and quality of care. Open questions remain about the value proposition of technology: community acceptance is mixed, fixed costs are high, and connectivity in rural areas is poor.

**Financing**

Financing refers to the collection of resources, public and private, that supports a health system. Financing is channeled to the supply side, to support the infrastructure of a system, or the demand side, to target resources to people, commonly through risk pooling. The majority of health spending in India is derived from private sources in the form of out of pocket expenditures. This lack of financial protection commonly results in poverty or in people delaying medical care. We focus on two aspects of financing that can improve access, equity, and efficiency: health insurance, or demand side financing, and capitation as a form of provider payment.

**Health Insurance**

When available, health insurance is typically restricted to secondary or tertiary hospital care. The difficulty in pricing outpatient care and its high administrative costs are contributing factors to the absence of outpatient insurance products in the market. The emergence of government sponsored health programs in various states and, in particular, the outpatient pilot program underway by Rashtriya Swasthya Bima Yojana (RSBY) are promising signs of change. The evidence to support the case that outpatient care can control health system costs is growing, from both public and private programs.

**Capitation Payments**

There is limited experience with capitation in India. Typically, providers are paid fee for service (private sector) or through budget line items, such as salaries (public sector). Government sponsored insurance programs use package rates, a fixed price in exchange for a set of services or inputs. The international models that we reviewed vary according to particular health system objectives and constraints. Several countries are still piloting programs. In general, capitation is combined with fee for service allocations or salaries to control and motivate providers.

Our primary research corroborates the finding that despite high need for outpatient health protection, there is limited access to such products. The RSBY
outpatient pilot program in Odisha and Gujarat is showing promise in promoting the uptake of primary care. The pilot program is also reducing inpatient claims costs. Similar results hold from the CARE Foundation and Uplift Mutuals. Though these two initiatives are small in scale, there is potential to expand the community driven initiatives and consider linkages between these groups and government programs.

Capitation payment models are proving to work effectively for primary care in a number of countries but require strong support infrastructure. Capitation calls for a paradigm shift among providers and therefore requires ongoing training and support. Capitation requires well designed performance incentives and monitoring to control underprovision of care. Often, capitation is mixed with other types of payment methods – such as fee for service – to incentivize providers appropriately. Capitation requires appropriate pricing and risk adjustments to fit local disease trends and to appeal to private providers. Supportive governance frameworks are also required to integrate capitation models within the broader health system.

Community Engagement
Community engagement is considered a cornerstone of a primary care approach, but one that typically receives limited attention at the policy level. This review focuses on two aspects of community engagement: the extent to which equity and gender considerations are built into primary care models and the mechanisms that are used to achieve community accountability.

Equity and Gender
Access to health services in India is highly inequitable, translating into major disparities in health outcomes along demographic lines: income, gender, tribe, caste, and location. Initiatives that bring education and care closer to the community – through rural outreach or social platforms – are able to make services more equitable, overcoming geographic and cultural barriers. Community engagement is also shown to improve awareness and health seeking behavior.

Accountability
One of the weaknesses in the Indian health system is its limited accountability to communities. Policymakers are neither fully aware of community needs, nor held accountable. Institutional reforms through the National Health Mission are underway to give greater voice to communities but call for greater momentum
and capacity. Efforts by civil society groups and nongovernmental organizations to demand consumer rights are also prevalent.

In our primary research, we observed that a community interface helps ensure greater equity and gender sensitive services. Through female community workers, intensive outreach, and group based forums, organizations with a strong community focus are able to ensure greater equity and access. The fundamental challenge in bringing about lasting change in community mindsets and health seeking behavior still persists. In terms of accountability to communities, we saw organizations use a mix of strategies: engaging with key stakeholders, building capacity of groups to lead their own programs, and routinely soliciting feedback from patients.

**Governance**

Governance is a key determinant of health system effectiveness and performance. It is multidimensional in scope and spans the policies and regulations that guide a system, decision making, leadership structures, and accountability and transparency within particular organizations. The Indian health system is characterized by weak governance and leadership, with corresponding high levels of corruption. This combination impedes health system performance.

**Regulation and Structure**

The government has limited ability to regulate and monitor the health system, particularly the pluralistic private sector. The system is also fragmented in terms of information architecture and monitoring. The system lacks adequate linkages between sectors. Decentralization efforts through the National Health Mission are leading to promising changes, especially in states where leadership is strong. In particular, this decentralization entails improved measures for community accountability and transparency of information. Although the government sponsored health insurance programs have created autonomous governing agencies, these agencies maintain little consistent coordination and consultation with key interest groups, including consumers and providers.

There are programs, like the Rajiv Aarogyasri Scheme in Andhra Pradesh, now known as the Dr. NTR Vaidya Seva Scheme, that have created a governance mechanism to improve transparency and dialogue with providers and consumers. Many health programs are also taking steps to streamline how health information is collected and managed. Far more effort is needed to integrate fully the collection and use of data across public and private sectors, between
ministries, and with health financing platforms. The organizations included in our primary research, with the exception of the public private partnerships, have not explicitly partnered with government to share medical data.

Given that most organizations in our primary research are privately funded and remain largely autonomous from government oversight, the focus of our discussions on governance centered on the internal leadership frameworks of the organizations. All groups are constituted with a board though the structures and levels of engagement vary.
Introduction

India is the second most populous country in the world, with an estimated 1.2 billion people, according to the 2011 census (http://censusindia.gov.in/). The country has undergone significant demographic and socioeconomic changes in the last several decades. These changes include economic growth, rapid urbanization, and an expansion in the aged population (WHO, 2012). The face of healthcare delivery must evolve to address this changing demography but also contend with the India that is still primarily rural, dispersed, and overwhelmingly poor. Two thirds of the population lives in a rural area. Over four hundred million live in extreme poverty (WHO, 2012).

India has made significant progress in improving key health indicators. Life expectancy has doubled in the years since independence, but India remains well behind comparable countries in achieving health outcomes (Reddy et al., 2011). Today, India accounts for twenty one percent of the global disease burden (WHO, 2012). Huge disparities exist between Indian states. On aggregate, several trends persist (GOI, 2013): India carries the largest burden of infant, maternal, and child deaths in the world, despite prominent gains in the last two decades. Immunization coverage is far from universal, especially in northern states. Preventable illnesses, including diarrhea and related water borne diseases, continue to be a major burden on households and on the health system. Tuberculosis related mortality and morbidity also remain high. Several northern states continue to have high rates of fertility, a trend attributed to early marriage and lack of quality family planning services (Ibid.). A critical point for the future of India is that its epidemiological burden is shifting toward noncommunicable diseases (NCDs). As of 2012, these diseases accounted for two thirds of total morbidity and more than half of total deaths (WHO, 2012).

“Health expenditures are the cause of more than half of Indian households falling into poverty, estimated at thirty nine million people every year.”

The public health infrastructure and systems in India are unable to alter significantly the face of healthcare. Despite increases in per capita health
expenditure over the last decade, India remains among the five countries with the lowest levels of public health expenditure in the world (WHO, 2012). Government expenditure on health is a mere 1.1 percent of GDP, roughly a fourth of the total health expenditure of 4.2 percent (WHO, 2012). Out of pocket payments, payments made at the point of care, are the primary source of financing. These payments account for over seventy percent of total expenditure. An equivalent share of these payments (seventy percent) is directed toward pharmaceuticals in the context of outpatient care alone (Balarajan et al., 2011; Gill and Taylor, 2013). Price increases for pharmaceuticals are twice as high as general inflation, causing a disproportionate burden on the poor (Balarajan et al., 2013). This financing scenario, largely in the hands of consumers, creates a vicious cycle of impoverishment and poor health among vast segments of the population. Health expenditures are the cause of more than half of Indian households falling into poverty, estimated at thirty nine million people every year (Ibid.).

With historically low levels of public investment, planning, coordination, and leadership, the supply of health services is far from able to deliver care at the required capacity or quality. Public health facilities lack adequate infrastructure, skilled human resources, and the incentives to deliver effective and efficient healthcare. In this context, the private sector has emerged as the primary source of healthcare delivery (Reddy et al., 2011). This sector is dominated by fragmented, pluralistic, small scale health providers that are poorly coordinated and regulated, ensuring neither quality nor access to the masses. Likewise, human resources for health in India have significant deficiencies in terms of workforce size, geographic distribution, training, and supervision. The policy framework of India has historically emphasized the role of medical doctors at the cost of engaging and supporting other health professionals, such as nurses and community health workers. The promotion of specialized care over primary care has deepened inequities in access while simultaneously increasing the cost of care (Reddy et al., 2011).

There is growing recognition that the Indian public health strategy needs to prioritize primary healthcare delivery to maximize health impact, with access, affordability, and equity objectives at the forefront (GOI, 2013; Rao and Mant, 2012). Recent government commitments signal support for a stronger primary healthcare backbone. These commitments include its flagship National Health Mission and the Rashtriya Swasthya Bima Yojana (RSBY) health financing platform. Approaches to achieve universal health coverage (UHC) are being
debated. These approaches underscore the importance of investing up to seventy percent of health expenditure toward primary healthcare (GOI, 2013).

Consensus is emerging on the key elements for an affordable and effective primary healthcare system in India. It is a system that focuses on effective prevention and community engagement. It delivers most care outside hospitals in an outpatient setting, while carefully prioritizing hospital based specialist care on medical need. It ensures equitable access through demand side financing. Such a vision requires that policymakers reform aspects of the current system. They must strengthen governance frameworks, widen the scope of healthcare delivery to include different cadres of primary care workers, and create stronger institutional linkages with social sectors beyond healthcare (Rao and Mant, 2012; Reddy et al., 2011; GOI, 2013).

In the spirit of reconfiguring primary healthcare systems for India, this paper reviews the recent literature on healthcare delivery, including firsthand research on fifteen models, to shed light on what has worked and not worked and what elements must factor into the design of a future primary care model.
Methodology

Objectives of the Study

This study of primary healthcare initiatives is driven by three objectives:

To conduct a literature review of the state of primary healthcare in India;

To identify initiatives or solutions that can improve the delivery of primary healthcare; a related objective is to identify international examples of capitation based provider payment systems that may be of relevance for India; and

To propose two primary healthcare models that use capitation payments, have network effects across private sector healthcare providers, and can demonstrate community outcomes.

Landscape of Literature Related to Primary Healthcare

The literature review is organized around four pillars that we consider important in a well functioning primary care system: service delivery (with network effects), financing, community engagement, and governance.

Service Delivery

We focus on the role of networks as effective channels to deliver primary healthcare. Within service delivery, we consider the scope of primary healthcare services, human resources, quality of care, and the role of technology.

Financing

We place attention on two aspects of financing, health insurance or demand side financing and provider payments, with a focus on capitation.

Community Engagement

We consider the extent to which gender and equity factor into primary care models and review measures that are used to ensure community accountability.

Governance

We review the extent to which systems and organizations are governed, including their regulation and enforcement of rules, decision making structures, and accountability, transparency of information.
A list of keywords was developed along the pillars described above. In addition, notes from discussions held during the expert consultation meeting in July 2013 offered background for narrower keyword searches.

Most of the literature that was reviewed consisted of peer reviewed articles and published working papers. In some cases, we referred to grey literature. The majority of the literature was sourced through the following databases: Science Direct, Google Scholar, Wiley, Business Source Complete, Scopus, and PubMed. Specific journals hosted on these sites include The Lancet, Health Policy and Planning, Health Affairs, the International Journal for Quality in Healthcare, and the BMJ (formerly the British Medical Journal). In addition, we sought reports and publications of the World Health Organization (WHO), the Ministry of Health and Family Welfare, the National Health Service, the Planning Commission of India, the National Health Systems Resource Center, the World Bank, PricewaterhouseCoopers, and others.

We scanned approximately 340 articles, of which 207 were reviewed by the researchers. We referenced eighty six in this report. We also reviewed literature pertaining to the fifteen primary healthcare institutions. This literature was commonly in the form of grey material available from the websites of these institutions. We found the greatest amount of published literature in the area of service delivery and health financing, with less material available on community engagement and governance.

**Landscape of Primary Healthcare Solutions**

The review team compiled a list of primary healthcare organizations in India by searching the Center for Health Market Innovations website, as well as Google search. In this initial search, we found more than one hundred organizations. Approximately forty organizations were selected from these two sources, based on the fact that they were presently functional, as per their website and published literature. Most of these organizations work in the private sector. This group was shortlisted to twenty organizations, based on the availability of secondary data. We then used four criteria to narrow our selection to fifteen organizations. These criteria included geographic representation across India, mix of not for profit and for profit orientation, urban and rural distribution, and representation of government funded programs or public private partnerships. (See Appendix 1 for a breakdown according to these criteria.) We also ensured that the selected cases were representative of the four broad pillars of primary healthcare: service
delivery, health financing, community engagement, and governance. (See Appendix 2 for the distribution.)

The review team visited most of the organizations in person. The team developed a structured questionnaire with open ended responses. The questionnaire had four sections, each representing the critical pillars of primary healthcare. If an interview was not possible in person, the team conducted interviews by telephone. It was the interviewer’s responsibility to ensure that he or she collected information about these organizations before the visit and be well versed with the model. Despite the structured nature of the tool, the team also asked many questions to compare and contrast with other models. (See Appendix 2.) Our objective with these interviews was to discuss solutions and constraints in primary care delivery that the organizations themselves viewed as important, rather than to evaluate or assess their strategies. We developed a guide that included approximately fifty questions across the four pillars. Given the length of the survey, we were unable to cover the entire set of questions with all organizations. Whenever possible, we arranged follow up phone calls to complete the discussion, to clarify points, or to probe a particular area.

**Weaknesses of the Study**

There is limited published and current literature on innovative healthcare models and primary healthcare policy in India, which posed a challenge in the review process. Much of the information about specific organizations is self reported and thus biased to a degree.

The interviews with selected organizations were often constrained by time and restricted to the leadership. While we deliberately chose to speak with senior managers – given our aim to capture solutions that the organizations themselves consider critical or salient – we were, in most cases, not able to hold discussions with staff and beneficiaries that would have offered additional, valuable perspectives.
Critical Aspects of a Primary Care Model in India: A Review of the Literature

**Background**

*The Public Health System of India: Gaps and Opportunities*

Below is a summary drawn from the literature of the key limitations across the public health system in India as well as the opportunities that deserve further attention. These constraints and opportunities do not capture variation between states, nor do they characterize issues that are salient only in certain geographies.

**Inability to Deliver Cost Effective Care**

With few exceptions, the system does not give adequate focus to preventive health and care of chronic diseases, including effective screening, diagnosis, and referrals for hospital services. These services are necessary to promote community health and contain costs. Poor distribution of generic medicines – universal access is not yet a reality – results in the high cost of treating basic acute illnesses, such as pneumonia, and chronic diseases, such as hypertension.

**Inadequate Human Resources for Health**

The health system is constrained in its ability to recruit, train, and retain high quality staff. These constraints are particularly pronounced in remote and difficult to reach areas. An important component of this shortfall is the limitation around engagement with nurses, community health workers, and those qualified under Indian Systems of Medicine.

**High Out of Pocket Expenditures and Medical Inflation**

Only a small fraction of Indians participating in any health insurance or risk pooling program. Healthcare delivery is highly inequitable and unaffordable for most people. With escalating prices, particularly in the private sector and for pharmaceuticals, nearly forty million people are forced into poverty every year as a result of health expenditures. A lack of regulation also drives medical inflation.

**Poor Regulation and Enforcement of Quality Standards**

The government lacks the capability to regulate, enforce, and monitor quality in a highly dispersed and pluralistic health system. Current funding models do not distinguish or value the delivery of high quality healthcare.
Lack of Community Engagement and Accountability
There are limited institutional channels to enhance health literacy among communities, so individuals understand the risks of overmedication, for example, or to engage communities actively in decision making and delivery, so services are more responsive to local needs and accountable to communities.

Lack of Governance and Institutional Integration
The system suffers from poor governance and leadership in administrative and clinical practices. For example, the healthcare system lacks integrated information technology to support monitoring, planning, and policymaking across the public and private sectors or between related ministries and departments.

This weak state of public health delivery creates space for innovation and testing. Key opportunities to strengthen the primary care system in India include the high quality of medical care that is available in select hospitals, which can be a template for expanding access to wider populations, and the existence of a relatively large health workforce, albeit with varying qualifications, that can be used to task shift and improve representation in rural areas. Opportunities also include the capability of the country to produce generic medicines that can ensure access to low cost, effective medications for all and the growing support for universal healthcare, which signals the political opportunity for larger reforms in primary healthcare. The emergence of mobile phones and low cost technology can also help to bridge the access divide.

Toward a Primary Healthcare System
There is growing consensus in the global health agenda on the need to renew focus around primary healthcare. Primary care is seen as necessary to improve the health of a vast majority of the world’s poor that remain without access to high quality and essential healthcare. This call for a refocus on primary care stems from several developments, all of which are applicable in the context of India. First, access to basic health services remains very low in most developing countries, rendering the targets set under the Millennium Development Goals (MDG) unachievable. Second, an historical emphasis on vertical disease control programs, including Maternal and Child Health (MCH) in India,¹ has come at the cost of strengthening health systems and ensuring access to primary care for all. Third, the need for community ownership and participation is increasingly

¹ A point expressed by Dr. Sujatha Rao, former Secretary Health, Government of India, during an expert consultation meeting in Delhi, July 2013.
recognized as a critical pillar in the delivery of and demand for healthcare, and one that has traditionally fallen to the sidelines. Finally, given changing demographics and epidemiology, in particular a growing aging population and a shift in the disease burden to chronic, noncommunicable illnesses, the case is even stronger for investing in primary healthcare systems that can ensure a continuum of care (WHO, 2008; Perry, 2013).

The three pillars of primary care, as defined at Alma-Ata, are commonly referred to as community participation, equity, and intersectoral development.

**Defining Primary Healthcare**

Primary healthcare is the first level of contact that individuals and communities have with the health system. Primary care responds to the broad health needs and the epidemiological priorities of the community. This implies that a primary care approach will also address underlying social and environmental determinants of poor health, including safeguards to ensure access to water, sanitation, nutrition, and education (WHO, 2008; Perry, 2013). From a “health service” point of view, primary care comprises preventive, promotive, curative, and rehabilitative care. Increasingly, the term “comprehensive care” is used to refer to the full continuum of care, spanning both acute and chronic. In its role to ensure access to comprehensive health services, primary care acts as a hub to guide people through a health system (WHO, 2008). The notion of equity and access is central to a primary care model, ultimately aimed to ensure “Health for All.”

The 2008 World Health Report summarizes the key tenets of a primary care approach as one that is **person centered** and responsive to individual and community needs, that ensures **continuity of care** over a lifetime, “The service delivery reforms advocated by the PHC movement aim to put people at the center of health care, so as to make services more effective, efficient and equitable.” (WHO, 2008).

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2 The International Conference on Primary Care, held in 1978 in Almaty, called for the achievement of “Health for All” by 2000.
that is comprehensive in the type of diseases prevented and cured, and that is integrated with other arms of a health system, including tertiary and specialist care, as well as social services beyond healthcare (Bhatia and Rifkin, 2012; Perry, 2013). Moving to a primary healthcare model typically calls for a reorientation along the following priorities:

Addressing social determinants of health and taking a view that is broader than the classical biomedical approach;

Ensuring equity in systems that have traditionally relied on the private sector and on out of pocket payments;

Building community engagement and ownership as a central feature of a primary healthcare framework; and

Ensuring a stronger role for disease prevention that is linked to existing vertical programs, as well as ensuring a role for certain curative services that are not included in the traditional scope of primary care (Perry, 2013)

**An Analytical Framework**

Our framework is centered on the four key pillars in a health system: service delivery, financing, community engagement, and governance. These pillars are closely interconnected and dynamic. Each deserves equal attention for a primary care system to function optimally. Constraints in a given context, however, may require a prioritization or sequencing of activities across these pillars.
Service Delivery with Network Effect

This review places particular attention on networks as effective channels to deliver primary healthcare. Networks can be characterized broadly as associations, health chains, franchises, or even a group of public primary care centers. In highly fragmented and disorganized healthcare systems, such as the system in India, networks can serve as an important intermediary between governments and disbursed providers. Networks are especially relevant in environments where the private sector is dominant and where capacity for public supervision is relatively weak (Bellagio, 2012). Networks are an effective way to pool resources among autonomous providers. Networks offer efficient replication and scale up, enforce quality standards, and provide a “brand” to which consumers can respond. Networks can also serve as channels through which subsidies or public goods – preventive healthcare or information – are delivered to a given population (Ibid.).

The exact structure of networks, including their profit orientation or level of control over their units, varies widely. For example, in the LifeSpring model, clinics are owned by a company. This company maintains full control over the services offered, financial management, and operating systems. In a social franchise, such as the MerryGold Network, contracted providers have greater independence. Providers are trained to promote a particular set of services – in this case, focused on maternal and child health – and refer clients within the network, in return for adherence to protocols and submission of data. In insurance models, such as Rashtriya Swasthya Bima Yojana (RSBY), the network of accredited providers is more expansive, arguably with less oversight than a social franchise, and requires robust information technology to ensure effective payment and claims administration.

Primary care networks can help ensure the following conditions:

Care is brought closer to the community, moving from specialist to generalist services.

Providers are responsible for addressing the needs of a defined population, through active outreach, prevention, and screening.

Care is coordinated through a “gatekeeper” and includes linkages to emergency or specialist care and nutrition or other services.

(WHO, 2011)
This review considers all types of networks, managed by varying levels of control and profit orientation, and driven by public or private agencies.

The service delivery pillar is expansive and includes a) the *scope of services* that fall under primary healthcare, b) *who* in the workforce delivers these services – their qualifications and the sector in which they belong (public or private), c) the *quality* of health services rendered, and d) how *technology* plays a role in delivery. While we place attention on each component independently, we recognize the inherent interconnections.

**Scope of Services**
Primary healthcare comprises three broad types of services, which, in practice, overlap: services oriented care, disease oriented care, and community oriented care. Services oriented care, also referred to as ambulatory care that is delivered in clinics or outpatient facilities, is focused on an episode of illness and is the dominant type of healthcare delivered in India. Disease oriented care represents efforts to control a particular disease that constitutes a significant burden, such as polio, malaria, or HIV/AIDS. This type of care has historically attracted the largest amount of funding and technical resources in low income countries. Disease oriented care is “top down” in approach. Disease oriented care is generally implemented in coordination with the primary healthcare system (Perry, 2013). Community oriented care represents efforts to work in partnership with communities to address their localized health needs in a way that is responsive and comprehensive. Community oriented care has historically received the least priority within health systems.

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3 The term "comprehensive" and "selective" primary healthcare, as well as "horizontal" or "vertical” approaches are also used to describe these distinctions (Bhatia & Rifkin, 2010; WHO 2008).
While all three types of services are considered necessary in a primary healthcare system, there is growing agreement on the need to move toward a community centered approach. This is also referred to as patient centered care. Relationships with providers are maintained over time. Each person is afforded a continuum or full cycle of care, rather than the sum of discrete interventions (Perry, 2013; Yong Kim et al., 2013; WHO, 2008). Such care is not only effective from an operational standpoint – reducing inefficiency and duplication – but it also adds value to clients, who are inclined to take up services more readily when the full cycle of care is available to them (WHO, 2008).

The goals of health systems are complex. Health systems possess the ability to respond to evolving diseases patterns. Given these factors, a strong case can be made for the need to move away from an either/or position on vertical and horizontal approaches and move toward a diagonal approach that integrates sound disease management practices – for example, in HIV/AIDS and malaria – into existing health systems. (Yong Kim et al., 2013; Perry, 2013).

To move from a fragmented health system to one that affords people the type of continuum described above requires the integration of activities and services
across various levels. The Care Delivery Value Chain Framework developed by Yong Kim, Farmer, and Porter offers an insightful lens. The framework views integration at four levels: 1) across interventions for every medical condition, including prevention and care for related diseases; 2) between the different components of “delivery infrastructure,” such as clinics and hospitals, and among providers, such as nurses, community health workers, and doctors; 3) with the local environment, such that contextual knowledge and constraints are factored in; and 4) with economic and community development programs, so that resources are shared and generate added value.

**Current Scenario**
While the government of India has expanded its health infrastructure in the last decade – increasing the number of primary healthcare centers (PHC), community health centers (CHC), and district hospitals – large shortfalls of between twenty to forty percent remain (GOI, 2013). These gaps are particularly large in Bihar, Jharkhand, Madhya Pradesh, and Uttar Pradesh (Ibid.). We are far from meeting the facility to population benchmark as spelled out by Indian Public Health Standards. Besides limited coverage, which is exacerbated by high vacancy rates and absenteeism (Rao et al., 2011), the poor quality of services in the public sector results in extremely low usage levels (Wharton, 2013). Institutional structures within the health system do not fully support the integration of health, nutrition, and other social services (GOI, 2013; Deo, 2013). Usage patterns reveal that the rich use a greater share of public services than do the poor. The rich are more likely to use hospital based or inpatient care in public facilities, including tertiary medical services (Balarajan et al., 2011). A 2000 study revealed that thirty six percent of public funding for hospital care benefitted the top income quintile, and only 8.1 percent benefitted the lowest quintile (Mahal et al., 2000).

By wide margins – estimated at above seventy percent – the private sector is the dominant source of health service delivery in India, for the rich and poor alike (Rao et al., 2011; Das et al., 2012). The private sector is characterized by
ambulatory or outpatient facilities that provide care at a variety of price points and quality standards. The qualifications of providers vary, from bachelors of medicine or surgery (MBBS); to certificates obtained under the Indian Schools of Medicine and homeopathy (AYUSH), including Unani or Ayurveda; to no formal medical training (Das et al., 2012). Research on healthcare use in rural areas shows that a stark ninety percent of the population seeks care from private providers, with over seventy percent of those providers being unqualified (MAQARI, 2011).

With little emphasis placed on preventive, diagnostic, or affordable care, this system can also result in delays before people seek quality care. People often address their basic healthcare needs in hospital settings (Rao and Mant, 2012; Wharton, 2013). Hospital based care typically involves higher levels of investigation, potential for inappropriate or overtreatment, and use of expensive nongeneric medicines. The lack of systematic screening and prevention for both acute and chronic illness is a greater constraint for poor and rural populations. It disproportionately affects their burden of disease and expenditures (Rao and Mant, 2012). Recent evaluations show that the uptake of care in the public sector for chronic illnesses remains very low in Uttar Pradesh (forty five percent), Madhya Pradesh (sixty three percent), and Jharkhand (seventy percent), but high in Tamil Nadu (ninety four percent). This variation is attributed to a difference in service quality (GOI, 2013). Rehabilitative and palliative care for the sick and elderly also remain neglected. This lack of availability of preventive care services in the public system has negative consequences for individuals suffering from multiple morbidities and leads to high treatment costs. Another area deserving attention, particularly in northern states, is family planning services. Integrated programs are needed to prevent early childhood marriage and to encourage birth spacing (GOI, 2013).

**Select Initiatives**

In 2005, the government of India launched Janani Suraksha Yojana, a national conditional cash transfer program under the umbrella of the National Health Mission. The program promotes institutional deliveries among poor women to reduce the incidence of maternal and neonatal deaths. It is implemented with the help of community level health workers – accredited social health activists or ASHAs. The health workers receive incentives to identify pregnant women and help them use a health facility for antenatal care, deliveries, child immunizations, postnatal checkups, and counseling. Pregnant women that deliver their children
in a government or accredited private health facility receive cash benefits (Lim et al., 2010).

Two to three years after the program was launched, an evaluation found that the rate of institutional deliveries increased on aggregate, though there was wide variation in uptake between states and districts. Financial assistance was generally higher for middle income groups with higher education. This pattern suggests that the program was unable to target the most disadvantaged communities effectively. The evaluators underscore the need for more appropriate communication strategies to raise awareness among illiterate women. The evaluators also highlighted the need to network higher level facilities with remote health facilities so distance does not pose a barrier for women needing advanced care. While the program led to reductions in perinatal and neonatal mortality, it did not reduce maternal mortality rates or improve the availability and quality of maternal and newborn health services, particularly emergency obstetric care (Lim et al., 2010).

**Human Resources**

The heart of a public health system lies in its human resources – the individuals that “promote, protect, or improve population health” (Nandan and Agarwal, 2012). The availability and type of human resources in a given system directly correlate to health outcomes. Human resources also impact maternal and child mortality and uptake of immunization and other health indicators (Ibid.).

The Declaration of Alma-Ata called for services to be provided “as close as possible to where people live and work” and for services to be provided by “health teams composed of physicians, nurses, midwives, auxiliaries, and community workers, as applicable, as well as traditional practitioners as needed.” There is growing evidence that supports the notion that effective healthcare delivery must be conceived both within and outside the walls of a medical facility. Today, the role of community health workers and other nontraditional human resources are considered essential in the delivery structure. Their importance to the health system is supported by global evidence from Brazil, Nepal, and Bangladesh and is recognized by the Planning Commission in its Twelfth Five Year Plan. (GOI, 2013; Perry, 2013).

**Current Scenario**

The health workforce in India is severely constrained in number. The distribution of health workforce is skewed against rural areas. The health workforce is highly
unregulated in terms of licensing or service quality. India has around 4.5 doctors per ten thousand in population. This figure is far from its target of 8.5 per ten thousand. The shortage of auxiliary nurse midwives (ANMs) is more severe, at 7.5 per ten thousand people. The desired target is 25.5 for the same population (GOI, 2013).

In the public system, high vacancy rates mean that between eighteen and thirty eight percent of primary healthcare centers lack a doctor, pharmacist, or laboratory assistant. Over half of the community health centers lack specialist doctors. (Rao et al., 2011). It is estimated that seventy four percent of the 1.4 million qualified medical practitioners live in urban areas and serve less than thirty percent of the population (Sundaraman and Gupta, 2011). These figures translate to an extreme shortage of both undergraduate and specialist doctors in rural areas.

Most of the population, particularly the poor, is served by the informal health sector. Commonly referred to as informal providers, these providers operate without a license or medical qualification, yet are typically the most accessible. It is estimated that there are over one million informal providers in India (Balarajan et al., 2013). The vast majority of these providers are men (Das et al., 2009). It is common for informal providers to practice allopathic medicine or maintain referral linkages with private medical doctors, laboratories, or hospitals (Rao et al., 2011). Despite the prominence of informal providers in the healthcare system, the government, nongovernmental organizations, and the private for profit sector have made few formal efforts to engage systematically with informal providers. When linkages exist, they are generally restricted to nonclinical activities and referral agreements, such as those under the Revised National Tuberculosis Control Program.

Nurses can address the basic needs of more people at a lower cost than doctors (GOI, 2013). The ratio of doctors to nurses in India is one to 1.6, lower than the optimal ratio of one to three. In general, women are underrepresented in the health workforce, comprising only seventeen percent of allopathic doctors. This underrepresentation has implications for the responsiveness of health services for women (Rao et al., 2011). Recent efforts under the National Health Mission to recruit nurses and auxiliary nurse midwives have bridged a portion of the staffing gap in the public sector. Shortages of around fifty two percent still remain for both cadres (GOI, 2013). The large scale recruitment of female accredited social health activists under the National Health Mission – estimated at 850,000 – has
promoted awareness of obstetric and child care services in the community. Evaluations point to the need for better training, improved structure, and timely disbursement of incentives (GOI, 2013; Nandan and Agarwal, 2012), as well as greater local political support for the program (Banerjee et al., 2008).

Public health training in India has historically centered on medical colleges. The health system has prioritized clinical training over social and preventive medicine. A significant example is the fact that the Medical Council of India (MCI) does not regard primary care as a specialty beyond the graduate level. Doctors who practice in this field have limited postgraduate training, accreditation, or opportunities for career progression (Rao and Mant, 2012). The Medical Council has advocated for a stronger focus on family medicine at the postgraduate level. The Medical Council recommends that doctors obtain a Master of Science in Family Medicine (MCI, 2011). Some states are introducing continuing medical education (CME) courses in primary care for doctors. Various medical colleges offer postgraduate degrees in community medicine. In total, however, the lack of streamlined continuous medical education, career progression, and leadership positions in community and family medicine render these specialties less attractive.

Public health training in India is also “doctor centric.” Historically, the system has neglected the growth of nursing and allied health professions (Rao et al., 2011). A majority of the training for nursing cadres is poor quality and lacks continuous capacity building. These cadres are typically not represented at leadership positions. This lack of representation signals a need to invest in their public health and management skills (Lisam, 2011; Nandan and Agarwal, 2012).

The AYUSH sector also remains underused. Advocates push for increased training and task shifting to meet the immediate healthcare needs in India (Rao et al., 2011; Nandan and Agarwal, 2012). Proposals to mainstream AYUSH in the public health system are under debate. These proposals require that AYUSH workers be trained in emergency and obstetric care. They also call for the inclusion of AYUSH departments specializing in Indian Schools of Medicine within district and tertiary hospitals (Gopichandran and Kumar, 2012). The Planning Commission is broadly in support of reform to mainstream AYUSH. The Planning Commission cites the need to amend the legal framework to authorize AYUSH graduates to practice modern medicine for primary care and the need to supplement the clinical skills of AYUSH workers through bridge courses (GOI, 2013). The Planning Commission also advocates for a stronger
“public health” cadre that will include professionals from multiple disciplines, including epidemiology, nursing, and community work (GOI, 2013).

**Select Initiatives**
A range of strategies is being implemented across India to address the shortage, uneven distribution, and lack of skills in the health sector. These strategies include monetary incentives or service bonds to encourage medical officers or doctors to work in rural areas (Tamil Nadu, Kerala, Meghalaya); priority admission at the postgraduate level for professionals who have served in rural areas (Tamil Nadu, Gujarat, Andhra Pradesh); localized recruitment and training to meet immediate staffing shortages (West Bengal, Haryana); rotational posting to rural areas (Tamil Nadu and Karnataka); training of new cadres of health workers, typically called rural medical practitioners, to address primary healthcare needs (Chhattisgarh, Assam, West Bengal); recruitment of AYUSH staff to serve as medical officers in public facilities (in most states, led by Tamil Nadu and Maharashtra); outsourcing of private gynecologists to supplement service delivery in understaffed public facilities (Gujarat); training of general physicians to provide specialist care, such as emergency obstetric services (many states); and contracting out primary care centers to nongovernmental organizations (many states) (Rao et al., 2011; Rao and Mant, 2012).

A recent evaluation of innovation in training a new cadre of rural medical providers in Assam shows that the program has the potential for replication (CIPS, 2013). The effort, initiated in 2004, includes a three year diploma course to train a new tier of informal providers in primary healthcare. Once trained, these providers are placed in rural settings that have staffing deficiencies. The effort in Assam obtained upfront legal support from the state, but like its predecessors in West Bengal and Chhattisgarh, it failed to obtain backing at the central level. The effort has made significant progress to date. Since 2010, the informal providers have overseen over 1.9 million outpatient cases and twelve thousand deliveries, with the assistance of auxiliary nurse midwives. The quality of training is regarded as high. The training occurs at a dedicated institution that has linkages to the state medical college for internships. An automated human resource deployment system ensures transparent and merit based employment postings. However, because the program is not a degree course, informal providers’ career progression is in question, as is their ability to attend additional mainstream training. The program has not yet received formal acceptance from the Medical Council of India (Ibid.).
While the Chhattisgarh program is currently discontinued, the effort was considered successful in closing the staffing gap at primary healthcare centers. Although the professional status of rural medical assistants was not clearly recognized or transferable, evaluations showed that the knowledge and skills of the rural medical assistants with regard to their ability to provide primary care services were on par with those of MBBS doctors. From an administrative angle, the program had limited capacity to forecast its human resources needs. The program also had poor academic capacity, attributed to multiple partnerships with nongovernmental organizations (CIPS, 2013; Sundaraman, 2013).

On a national scale, the National Health Mission has used workforce incentives, education, and continuous professional development to engage alternative service providers and community health workers. Additional evaluations are needed to understand the effectiveness of retention strategies and how they can be tailored to local contexts. Researchers question the effectiveness of community health workers in government programs. Inadequate reward structures and lack of support from other providers contribute to low motivation levels. Community health workers also have limited accountability to the community and inadequate skills (Mahal et al. 2013). The tension between their focus on prevention and the community’s demand for curative care and drugs creates an additional challenge in their work (Ibid.).

At the national level, the creation of public health management programs and short, targeted, and distance learning courses – including those established by the Public Health Foundation of India and the Indian Council of Medical Research – represent important resources for health workers to build skills and evaluate and scale up new innovations (Deo, 2013).

**Quality of Care**

The World Health Organization (WHO) broadly defines quality of care as, “...proper performance (according to standards) of interventions that are known to be safe, that are affordable to the society in question, and that have the ability to produce an impact on mortality, morbidity, disability, and malnutrition.” When primary care is high quality, it can improve healthcare utilization, reduce the need for secondary and tertiary level care, and impact health outcomes. There are several common dimensions of quality, including effectiveness, efficiency, equity, access, safety, and patient centeredness (WHO, 2006).
Quality of care can be viewed through two lenses: the provision of care by the provider and the experience and perception of care of the client. The provider interface includes human and physical resources, adherence to good practices, referral systems, appropriate technology, and information systems. Client experience is broadly viewed in terms of equity, dignity, respect, and access to ongoing support (Hulton et al., 2005).

There are numerous challenges in assessing healthcare quality. Among these challenges are the lack of aggregate or standardized performance measures and the difficulty of determining causality between inputs, practices, and health outcomes (Powel-Jackson, 2013, Banerjee and Duflo, 2009). Quality assessments are often limited to structural elements, which may have little bearing on clinical practice or health outcomes (Schlein, 2013). Other assessments may not be sufficiently oriented to clients’ experiences with healthcare (Dipankar Rao, 2006).

Current Scenario
The evidence related to the quality of healthcare provision in India is slowly expanding. The growing body of evidence sheds light on the poor state of healthcare and its regulation and the drivers of provider and consumer behavior.

A recent national assessment of the quality of primary healthcare in the public sector offers an important baseline. The study sample included over eight thousand primary healthcare centers spread across 586 districts. The study focused on structural elements, including staffing, recent training, basic infrastructure, and availability of equipment and medicines. On average, primary healthcare centers scored only fifty two percent in their ability to meet predefined government standards. The study revealed significant shortfalls. The northern states, particularly West Bengal, Uttar Pradesh, and Manipur, were the weakest performers. Often, the majority of the variation was within districts, a pattern that suggests that local factors had a strong effect on quality of care (Powell-Jackson, 2013).

Overall, quality of care was highly correlated with lower infant and under five mortality and better healthcare utilization in a given catchment area, though the authors do not draw a causal link between the two. A significant finding was that good management practices were a predictor of better quality. Urban facilities with larger population catchments tended to have higher quality standards. Nongovernmental organizations that were reviewed fared better than public facilities, though not by a significant margin (Ibid.).
One of the drivers that led people to seek care in the private sector is this poor service quality in the public system (Powell-Jackson, 2013; Kumar et al., 2011; Banarjee and Duflo, 2009; Butt, n.d). The quality of medical care also suffers in the private sector, where care is dominated by informal sources. This pattern is true even in urban settings. In Delhi, forty one percent of providers are unqualified (Roa, P.H, 2012). There is wide variation in private providers’ competence, knowledge, and implementation of correct treatment. Yet, private providers tend to be more patient oriented than government facilities, enjoy the trust of the community, and offer promotions and discounts to retain clients.

Results from a 2009 to 2010 population level study on the quality of primary care in public and private clinics are instructive. The study used standardized patients in rural Madhya Pradesh and urban Delhi. The study design provided a basis for rural/urban and public/private comparisons. Nearly seventy percent of the rural providers had no medical training, and over twenty percent had AYUSH training. Most visits to public clinics (sixty three percent) were attended to by staff without any medical training. The quality of care was poor across the board, characterized by brief consultation times and limited use of correct protocols (thirty percent). Fewer than half of the treatments provided were medically appropriate (forty one percent). Providers also prescribed harmful or unnecessary medications in the majority of cases. In the final analysis, medical training was not a determinant of better quality care. In fact, untrained providers were better at adhering to checklists (Das et al., 2012). The authors concluded that provider effort, rather than training, may be a stronger determinant of quality of care.

The notion that qualifications and training have little bearing on quality is supported by other research. A 2007 study showed negligible differences in competence among MBBS doctors, providers trained in alternative five year programs, and those who have undergone shorter six month courses (Hammer, 2007). Incentives, however, do impact provider behavior. Private providers tend to oversell services and medicines, driven by profit and customer desire for medication. In contrast, the study found that public providers do “too little” in terms of effort (Hammer, 2007).

From a consumer standpoint, the rich have access to more knowledgeable and competent providers than do the poor (Hammer, 2007). The poor tend to make decisions about where to seek care based on cost and accessibility alone. The rich and those with more education also value provider competence and interpersonal skills (Narang, 2011). A study on client perceptions of quality conducted at public
facilities in Uttar Pradesh found that the interpersonal skills of medical personnel were a key driver of patient satisfaction, as was the availability of medicines. Long wait times, on the other hand, had a strong negative effect on patient satisfaction (Dipankar Rao, et al., 2006).

Select Initiatives
The government of Gujarat has initiated a statewide effort to upgrade its public health system through a total quality management approach. The government aimed to address a wide range of issues, from the lack of standards in facility management to infection control, poor physical infrastructure, and limited accountability to the patient. The thrust of this reform effort has focused on behavioral change toward quality improvement. The government created new staffing positions to support quality assurance and continuous training. The initiative also included the creation of a distance learning course on quality assurance.

Hospitals participate in their own assessments of quality. They are accredited under the National Accreditation Board for Hospitals and Healthcare Providers and the National Accreditation Board for Testing and Calibration Laboratories after they meet performance targets. Nearly hospitals, focusing on women and children have also been accredited. The state claims to have made improvements in patient satisfaction as well as on structural and process related performance measures but cites concerns around the high cost of accreditation, particularly for smaller hospitals (Meena, n.d).

Private health networks are using a variety of strategies to improve quality of care. As we learned through our primary research, these networks are increasingly using technology as a facilitation tool. The strategies include using standard clinical protocols and monitoring dashboards, carefully incentivizing staff based on performance, offering upfront and continuous clinical training, and routinely incorporating feedback from patients (See Discussion).

Use of Technology
Technology has expansive applications in healthcare. It is transforming the effectiveness and efficiency of healthcare delivery. Technology is used widely in mobile communication, telemedicine, health management information systems (HMIS), provider payments, community and health worker education, and numerous other settings. Despite the wide use and promise of technology, there
remains a fair degree of skepticism among doctors and clients and a reluctance to adopt technology for health (Kumar and Ali, 2013).

Technology is applied across the four pillars in our framework, from building community awareness to facilitating provider payments. Technology is covered extensively within the service delivery pillar, where it has broad application.

The factors that enable the effective application and scale up of technology for health include supportive policies by governments to encourage and regulate the use of mobile health, health management information systems, and other platforms, including patient privacy and access to medical information (development of standards will also be critical to ensure interoperability across technology platforms). They also include acceptance by physicians, health workers, and administrators to adopt new technologies, followed by requisite training; the availability of cost effective technology solutions and devices; and the affordability and adoption by the mass market or targeted users (PwC, 2011; Wharton, 2012).

**Current Scenario**

In the context of India, where health workers are scarce and unevenly distributed, technology can and has played a transformative role. Technology has brought services closer to the community and expanded the capacity of the health system to provide care. Several converging opportunities have driven the application of technology in healthcare: widespread mobile networks and the high rate of mobile phone penetration (approximately eight hundred million users), availability of low cost medical diagnostic devices and communication systems, and the proliferation of technology enabled health networks (Wharton, 2012).

The government of India recognizes the utility of technology. (See box on the following page.) The government envisions an integrated health information system across the states to manage all aspects of healthcare planning, delivery, and monitoring, including disease surveillance, patient medical records, planning for human resources, continuing medical education, facility registration, and telemedicine initiatives.
Researchers argue that fifty to sixty percent of government services, including the management of primary care, can be delivered via mobile platforms (Murthy, n.d.). Others see an opportunity to deliver up to forty million telemedicine consultations per year for specialist care in rural areas (Wharton, 2012). Questions remain about the business viability of technology applications in health (Rajkumar, 2011; Currell et al., 2010). Hospitals remain reluctant to invest in health information technology, given the difficulty in assessing its business value and open questions about its usability and uptake by staff and patients (Murthy, n.d.). Such positions on technology can shift when providers are mandated to use it and supported, as has been the case with Rashtriya Swasthya Bima Yojana (RSBY) and the Dr. NTR Vaidya Seva Scheme in Andhra Pradesh. In both cases, the use of information technology is mainstreamed at network hospitals. (See Select Initiatives.)

While accurate data on the scale of telemedicine services is unavailable, many organizations seem to be working on solutions that include telemedicine services. Some of the major players in the private sector include Narayana Hrudayalaya, Apollo Telemedicine Enterprises, Asia Heart Foundation, and Aravind Eye Care. Narayana Hrudayalaya has a network of one hundred centers that provide specialist services in cardiology, neurology, urology, and cancer. They also have a discrete network that offers tele-electrocardiogram services (Wharton, 2012). To service the low income market, Apollo Hospital has engaged in a partnership with Equitas Micro Finance and HealthNet Global. Through this partnership, Apollo is able to offer low cost video consultation services to clients of the microfinance

*The government of India identifies four ways in which it intends to use technology:*

*Support public health decision making for better management of health programs and health systems;*

*Support service providers to deliver better quality of care and follow up;*

*Provide quality services in remote locations through telemedicine; and*

*Support education and continued learning in medicine and health.*

*(GOI, 2013)*
Various players also offer mobile based consultation services: Airtel has partnered with HealthFore and Fortis Healthcare to offer a subscription based, twenty four hour medical consultation service for its subscribers. MeraDoctor is a phone based medical consultation service offered to families on a membership basis. MeraDoctor also offers discounts at select diagnostic centers (Ibid.). The government itself is engaged in large scale teleconsultation solutions in several states through the Health Management Research Institute (HMRI). (See Select Initiatives on the following page.)

A study of telehealth (or mHealth) in India reviewed twenty six public, private, and nongovernmental organization initiatives and drew important conclusions. The study observed that sustainable business models are few; the vast majority of programs remain funded by the government and nongovernmental organizations. In terms of service delivery, most programs are involved in preventive and patient care management in which the patients report problems. Fewer than five percent of programs offer proactive surveillance or patient support. Only a fraction of the programs managed transactions over mobile or smartphones. The majority used desktop computers. Where phones were used, patient demographic and monitoring data was effectively captured using SMS and the web.

The initiatives may have used videoconferencing to train medical staff, but the use of computer based distance learning or technology for client education was negligible. All of the telemedicine models face the common challenge of unreliable power supply in rural areas. This unreliability resulted in severe underuse of telemedicine services. The study author called for greater “service integration” of telehealth, infrastructure, governance, and financial support services to improve outreach and affordability of care (Ramkumar, 2011).

Telemedicine can support the ability of cadres of alternative workers to deliver care at lower costs and increase access and utilization. Less is known about its impact on health outcomes or on improving the quality of health services in low resource settings (Peters et al., 2006; Rajagopal, 2013; Tomasi et al., 2004).

A quasi experimental study in public facilities in Tamil Nadu evaluated the impact of decision support technology on service usage levels, patient satisfaction, and staff attitudes. Decision support technology is used to screen patients, to provide medical advice, or to make referrals. The study results showed that the use of technology led to an increase in outpatient visits and patient satisfaction. Patients who participated in the study perceived
improvements in communication and quality. In contrast, health workers were not motivated by the decision support technology. Many regarded its use as additional work or an obstacle to their regular practice. In terms of its diagnostic efficacy, the tool was conservative in screening patients. It referred many patients to a physician even when it was unnecessary (Peters et al., 2006). The authors recommended that such decision support technology should be reviewed regularly to ensure that diagnostic algorithms are accurate and suited to local conditions and standards.

In a smaller scale experiment in Kerala, researchers explored patient satisfaction with the use of information technology at three private hospitals. Patients perceived the health services to be of high quality and medical tests more accurate. However, they also reported having limited access to medical information and reports (Rajagopal, 2013).

The research points to a need for more training for health workers across clinical, management, and communication skills, as well as greater use of technology for client education.

**Select Initiatives**

The Rajiv Aarogyasri Scheme in Andhra Pradesh, now known as the Dr. NTR Vaidya Seva Scheme, has advanced the use of technology on several fronts. The program has over three hundred network hospitals. It requires all of the hospitals in the network to have an internet connection and to invest in computer equipment. The program provides the equipment as an interest free loan. This accommodation ensures that all providers are able to procure and own the hardware. The program uses electronic medical records. Electronic records enable managers to review data from all hospitals on a daily basis and track patient referrals between facilities. In addition to medical records, the program also transmits angiograms and other diagnostic information over video for medical verification prior to surgeries and treatments. A recent evaluation of the program found that hospitals were initially reluctant to use information technology. With training, support, and exposure the staff at the hospitals have come to value the technology. Staff at many of the hospitals has also expressed interest in using the same software and medical records for non program patients, to have an integrated platform across their facility (Rao et al., 2013).

The **Health Management Research Institute (HMRI)** implements large scale technology based services in several states, including Andhra Pradesh, Maharashtra, Assam and Rajasthan. The Institute often implements these
services in partnership with state governments. It commonly provides an integrated platform that bridges information hotlines for patients, referral services, linkages to an emergency response system, and in some cases, telemedicine and outreach by community workers. In Andhra Pradesh alone, twenty eight million callers have used the hotline, and 11.5 million people have accessed mobile screening and referral services. An eight thousand household evaluation of the program in Andhra Pradesh showed high awareness for the hotline among the population, including among the poorest (seventy six percent). Ninety percent of people surveyed were aware of the number to call for emergency response services (Rao et al., 2013).

**Financing**

Financing for healthcare refers to the resources that support a health system. Health financing aims to provide all people with access to needed services of sufficient quality and to ensure that the use of services does not cause financial hardship on the user (WHO, 2010). Finances are sourced from tax revenues and transfers, as well as from private sources, such as consumers and employers. Private sources represent the major source of financing in India.

“Financing relates to two fronts: The supply side supports service delivery infrastructure. The demand side targets resources to particular segments of the population.”

Financing relates to two fronts: The supply side supports service delivery infrastructure. The demand side targets resources to particular segments of the population. Demand side financing also improves system efficiency and performance. Both types of financing are necessary, as they are also complementary. The health financing architecture of the Indian government has focused traditionally on the supply side – investing in facilities and infrastructure – while compromising efficiency, access, and equity in the system. The lack of financial protection for the majority and soaring out of pocket expenditures result in people commonly delaying or avoiding medical care altogether. According to 2004 survey data from the Ministry of Health and Family Welfare (MOHFW),

4 http://www.hmri.in/index.html
twenty eight percent of ailments in rural areas and twenty percent in urban areas went untreated. Many people finance their hospital admissions by borrowing or selling assets in rural (forty seven percent) and urban (thirty one percent) areas. These patterns make a case for improved financial protection (GOI, 2010).

This review places attention on two aspects of financing that have the potential to improve access, equity, and efficiency in the system: health insurance, or demand side financing, that is available through public, private, and community based channels; and provider payments that are used to administer health services. Of the different payment methods, we focus on capitation based payments.5

**Health Insurance**

The aim of health insurance is to improve access to and use of health services, to offer financial protection to communities, and ultimately, to impact health outcomes (La Forgia and Nagpal, 2012). By pooling risk among communities, health insurance can also improve the efficiency and effectiveness in the way resources are allocated and used.

> “Funding of this nature is unable to target the most needy, provide choice to users, or link provider payments to performance.”

**Current Scenario**

Health financing in India is characterized by low public and high private spending, coupled with negligible financial protection for the poor. According to 2010 estimates, only one fourth of the population of India is covered by insurance. Around nineteen percent are covered by government sponsored health insurance programs. The remaining six percent are covered by private or community based programs (La Forgia and Nagpal, 2012). Cumulative spending on insurance from government, private, and community based programs is approximately 6.4 percent of total spending (Ibid.). The dominant share of government spending – ninety percent of public expenditure— is directed toward the supply or service delivery infrastructure. Funding of this nature is unable to

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5 Given the dearth of experience with capitation models in India, we consider public and private models from outside the country.
target the most needy, provide choice to users, or link provider payments to performance (ITAP, 2012).

Two prominent government sponsored insurance initiatives that have been in effect for over fifty years are the Central Government Health Scheme (CGHS) and the Employees’ State Insurance Scheme (ESIS). Both are restricted to particular population groups. The Central Government Health Scheme offers comprehensive coverage for government employees and their families. The Employees’ State Insurance Scheme provides medical benefits to a select category of employees. In the last seven years, a new wave of state and central programs have been introduced to reform how resources are allocated and to provide greater financial protection for the poor. These include RSBY in many Indian states, Dr. NTR Vaidya Seva in Andhra Pradesh, Vajpayee Arogyasri in Karnataka, and Kalaignar in Tamil Nadu. With continued political and financial support, these programs are likely to cover up to half of the population of India by 2015. This projection does not account for new state programs that may also be underway (La Forgia and Nagpal, 2012).

Insurance covered under these new programs is restricted to “catastrophic” health events. Such events are low frequency and high cost. As such, coverage is restricted to secondary or tertiary care, often with a particular emphasis on surgeries. For instance, RSBY focuses on secondary care, with a benefit limit of thirty thousand Indian rupees. Most of the state programs focus on tertiary care, with correspondingly higher limits. This design choice limits the impact of financial protection, given that seventy four percent of out of pocket expenditures are made toward outpatient care and medicines, rather than hospitalization (Kumar et al., 2011). Researchers concur that by focusing solely on catastrophic events, the state sponsored programs fail to offer adequate financial protection for the full continuum of care (Selvaraj and Karan, 2012; La Forgia and Nagpal, 2012). Both patients and providers have an incentive to substitute outpatient for inpatient care. Doing so ultimately drives costs up. In recognition of this gap, RSBY is piloting a linked outpatient program in Gujarat and Odisha. This program is beginning to show promising results and makes a strong case for replication. (See Select Initiatives.) The Planning Commission has expressed the need to reform RSBY in the future so that it can provide access to a continuum of care, including ambulatory and primary care (GOI, 2013).

The private voluntary insurance sector has also grown in the last decade. This sector consists of for profit and community owned initiatives. They account for an
estimated three percent of total health expenditure. As of 2010, the sector reached around sixty five million people (La Forgia and Nagpal, 2012). In general, commercial insurers do not offer outpatient and preventive healthcare that is difficult to price and more costly to deliver (Chandani and Garand, 2013). There are an estimated ninety community based programs in India. Though constrained in scale, these programs tend to offer more client centered benefits, including primary healthcare and maternity care (Mukherjee et al., n.d.). Although sixty five percent of most government and community based programs are backed by commercial insurers, the health insurance industry in India is and will continue to be driven by government contracts and payments (Koven et al., 2013; Mukherjee et al., n.d.).

Championed by the government sponsored health insurance schemes, the Indian insurance sector has grown. Despite this growth, the sector is still in a nascent stage. It is comprised of fragmented and often duplicate efforts by central and state governments and by the private sector.

Select Initiatives
Though limited, the evidence signals a promising impact of both government sponsored health insurance programs and private health insurance in India. The evidence also points to the need for tighter controls; stronger management capacity; and alignment of incentives between beneficiaries, providers, and insurers. These needs are particularly relevant if insurance programs are to expand coverage to outpatient services. In this expansion occurs, moral hazard and fraud may require a rethinking of products and delivery channels (La Forgia and Nagpal, 2012).

**RSBY** piloted an outpatient healthcare program in Puri, Odisha, and Mehsana, Gujarat. This program provides access to primary care consultations and drugs to eligible populations. As of February 2013, nearly seven hundred thousand people had enrolled in both districts. Sixty percent of those used services, and over half used services repeatedly. Low usage in the initial months was attributed to limited awareness about the product benefits. This period was followed by directed education campaigns to beneficiaries, providers, and local panchayat officials. In an early analysis, the outpatient program led to a reduction in inpatient claims costs of around fifteen percent in both districts. This finding underscored a potential win-win for clients, insurers, and the government (ICICI Foundation, 2013).
A rigorous study on the impact of outpatient insurance at the Care Foundation in Maharashtra showed that having outpatient insurance led to more frequent visits to community health workers. This pattern in turn resulted in earlier identification of illnesses, more timely referrals to hospitals, and ultimately, to shorter and less costly hospital visits. A prepaid insurance card provided access to primary care. This card significantly altered the health seeking behavior of clients, compared to those who had to pay even a nominal fee for consultations. Inpatient coverage bundled with an outpatient product can potentially reduce the need for hospitalization, control claims, and improve program viability (Mahal et al., 2013). The experience at Uplift Mutuals supports these findings. A recent study on the business case for health microinsurance in India reviewed financial data of four programs over a two year period. The study concluded that Uplift had the lowest comparative claims cost per member. This achievement was attributed to the health prevention and gatekeeper services that Uplift instituted. These services include a telephone hotline and health education for the community. Together, they reduced the need for hospitalization. Additionally, because Uplift is community managed, members had an incentive to ration benefits and help control costs for the program. (Koven et al., 2013).

Provider Payment Methods – Capitation

“The way that health providers are paid to deliver services directly impacts the financial sustainability, efficiency, and the quality of care rendered.”

The way that health providers are paid to deliver services directly impacts the financial sustainability, efficiency, and the quality of care rendered. Payments can either be made after a service is provided, as with fee for service or reimbursement based models, or before service delivery, as with capitation. Payments may also involve the transfer of risk to the provider, as is the case with capitation or case based payments. This transfer of risk provides important levers to shape provider behavior and performance.
Fee for service payment is the most widely used method to compensate providers. Because fee for service payment gives providers an incentive to increase their service volume, it is usually associated with an increase in both volume of services and overall expenditure (Le Roy and Holtz, 2012). In the public sector, line item budgets are commonly used. Providers receive a fixed amount retrospectively to cover predetermined input expenses.

Methods that transfer some risk to providers have a greater potential to contain costs and induce providers to become more efficient. Capitation, in particular, can encourage early and less costly treatment. It is considered especially appropriate to compensate providers for primary healthcare, covering high frequency, low cost events. In primary healthcare, it is possible to predict how often people may require such care and to estimate associated costs. Capitation can also ease administrative costs since claims are not submitted (Le Roy and Holtz, 2012). However, unless performance targets are set and monitored, capitation can also induce underprovision of care or high referral rates (Langenbrunner et al., 2009), which has been the experience in the Philippines (Joint Learning Network, 2013). Capitation may be better suited for environments where high quality providers are scarce and where a critical mass of enrollment can be achieved with a given provider (Le Roy and Holtz, 2012). Commonly, insurance programs use a combination of payment methods to deliver their objectives. Insurance programs may combine capitation for primary care with case based package payments for hospitalization (Langenbrunner et al., 2009). (See Appendix 3 for advantages and disadvantages of provider payment methods.)

### Factors Affecting the Impact of Capitation

- The size of the pool of enrollees
- The “risk group” of enrollees, as defined by diagnosis
- The scope of capitated services
- Other incentives in place that influence provider behavior
- The adequacy of the capitated payments
- Protection or “adjustments” against undue financial risk
- The proportion of practice revenue derived from capitation

(Goodson, Bierman & Selkar, 2001)
The choice of payment method can certainly influence provider behavior, such as by promoting continuity of care in capitation models. Payment methods alone cannot ensure that service delivery objectives are met. It is also essential to ensure adequate attention to building capacity of service providers and strengthening regulatory and supervisory functions (GOI, 2013).

**Current Scenario**

Capitation based provider payments are not currently used in India, with the exception of fixed packages offered by some hospital chains, such as NationWide, to individual clients. Typically, services are paid at the point of care (fee for service), or in the case of insurance, services are offered “cashless” to clients. In this case, either the providers or the clients are subsequently reimbursed for the service costs.

The dominant provider payment method used by insurance programs in India is a package rate. This is a simplified rate that consists of a single fee or payment made in exchange for a set of inputs and services that are predetermined for a given treatment or case. For example, package rates for hospitalization will typically cover room charges, professional fees, diagnostics, and drugs – all the necessary components of a particular case (La Forgia and Nagpal, 2012).

Given the limited experience with capitation in India, our review considers experiences from other countries where capitation payment systems have been used. Below are illustrative examples of capitation payments used in the context of primary healthcare.

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>HOW CAPITATION IS USED</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>The family health program in each municipality is paid through capitation for basic care.</td>
</tr>
<tr>
<td>Canada (Ontario)</td>
<td>Family health networks are paid by capitation for primary care services.</td>
</tr>
<tr>
<td>Chile</td>
<td>Public health centers are paid by capitation, with a small portion reserved for case by case payments.</td>
</tr>
<tr>
<td>Estonia</td>
<td>Public sector family doctors are paid by capitation for primary care services. These doctors also receive a small basic payment, performance bonus, and fee for service allocation.</td>
</tr>
<tr>
<td>Country</td>
<td>Payment System</td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Thailand</td>
<td>In the Universal Coverage Scheme, health centers are paid for ambulatory services by capitation.</td>
</tr>
<tr>
<td>UK</td>
<td>Private general practitioner practices are paid by capitation for primary care services with performance bonuses.</td>
</tr>
<tr>
<td>Denmark, Italy, Netherlands, New Zealand</td>
<td>Private general practitioners are paid a combination of capitation and fee for service for primary care services.</td>
</tr>
<tr>
<td>Ghana, Kenya, Indonesia, Vietnam, Philippines</td>
<td>Currently being piloted.</td>
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</tbody>
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Sources: Cashin, 2013; Vega, 2011; Binge, 2010; Joint Learning Network, 2013

Primary care system reforms are designed to meet particular, context specific objectives. In the case of Central Asia, reforms were focused on addressing the hospital centric health systems. Hospital care accounted for over seventy percent of the health budgets in many countries (Langenbrunner et al., 2009). Medical care was predominantly delivered by physicians and specialists who placed very little attention on primary care. In the 1990s, following the breakup of the Soviet Union, many Central Asian countries initiated health reforms to build out a primary care backbone with autonomous primary care centers. Per capita payments to doctors were a central feature in this reform to prioritize delivery of comprehensive healthcare. An important factor in their success was the separation of pooled, centralized financing with decentralized management of care at the centers. This separation enabled broad access through the network. It also ensured improved quality and accountability (Langenbrunner et al., 2009).

In the European Union, most countries use mixed payment systems that entail fee for service for priority services, such as preventive care, and prospective capita payments for other primary care. Inpatient expenditures are typically capped and adjustments provided for variations in the risk group and resources used across facilities (Langenbrunner et al., 2009). Also in Latin American countries, such as Colombia and Chile, capitation payments are complemented with a fee for service component or a case by case allocation to prevent excessive referrals (Telyukov, 2001; Vega, 2011).

Though fewer in number, capitation payment models have also been tested by nongovernmental organizations, outside the context of health system reforms. In Tanzania, for example, PharmAccess Foundation and MicroEnsure are implementing a capitation based health financing initiative with a cooperative of
coffee farmers, which covers fifteen thousand lives. The two organizations found that establishing capitation contracts with providers was difficult up front. This difficulty eased as the program rolled out and providers reached a critical volume of cases. Providers allegedly made more money under capitation. Clients who otherwise avoided seeking care or went directly to hospitals started to visit their primary care centers. Another important lesson was that capitation payments “made providers treat properly the first time around.” The onus was on providers to make the diagnosis and treatment more accurate. However, MicroEnsure also described this experience as “a never ending treadmill of training providers” so that they understood the importance of proper diagnosis.

**Select Initiatives**

The following examples highlight the challenges around controlling for underprovision of primary care (Philippines), changing the orientation of a health system to focus on primary care (Thailand), pricing capitation payments so the system reflects epidemiological priorities (Chile), and the need to supplement payment methods with clear performance measures and capacity building of staff (Turkey).

The national insurance program in the **Philippines**, PhilHealth, prioritizes outpatient, primary care within its coverage. In 2000, it introduced an outpatient consultation and diagnostic package but found that usage was low. In 2012, the program enhanced the scope of services within this package to increase usage. It also changed the way in which it incentivizes providers to encourage them to promote primary care actively. As part of this effort, PhilHealth has replaced capitation with a fee for service payment for primary care to ensure that providers promote these services. Specifically, the program compensates community health workers for going out to the community and conducting an annual checkup of all clients who are registered with the facility. This strategy ensures more extensive outreach and screening, as well as stronger community linkages.

**Thailand** initiated the universal coverage program in 2001 to strengthen the primary care system in a country where hospital centric care was the norm. The reform entailed outpatient care offered on a capitation basis and inpatient services paid through fixed budget transfers to hospitals. The program was open to public and private facilities. Few private clinics joined because they considered the rates too low. Each participating primary care facility – staffed with at least one doctor, pharmacist, and dentist – was responsible for a given population that
had registered at the facility. In rural areas, this policy often meant that people had limited choice in selecting a center. As an additional part of its universal coverage policy, Thailand instituted fast track, three year training programs for doctors to practice family medicine and promoted nursing practice.

Reviews of the reform have indicated that there was insufficient integration between primary and curative care. The two pieces function as discrete models. There was a cultural divide between health professionals with training in family medicine and those who prioritized curative care. Eighty percent of the newly trained family doctors worked in hospitals rather than primary care centers. Evaluations reported that primary care centers that were family centered were more responsive to patient needs than other clinics. After ten years of implementation, the reform resulted in high coverage and use of primary care (over ninety percent) and stronger integration of care with nursing staff. These changes did not correlate with a strong reduction in hospitalization (Evans et al., 2011).

An evaluation of the capitation payment model in Chile offered insight into how well the payment amount was able to cater to changes in demographics toward an aging population and epidemiological profile with more chronic disease. For nearly two decades, Chile has operated a capitation payment system at the primary healthcare level. The Ministry of Health transfers sixty percent of funds per capita for registered beneficiaries, with additional case by case payments. In 2000, the base capitation rate was adjusted if the location was rural and the municipality poor, by twenty and eighteen percent, respectively. These adjustments ensured that these populations had adequate resources. A 2006 evaluation found that despite this adjustment, expenditures for older, nonindigent groups were substantially higher than for indigent groups. This difference was attributed to higher coverage of the nonindigent for the treatment of chronic diseases, such as hypertension and diabetes. The researchers advocated for a special capitation adjustment for chronic conditions so that providers would have the incentive and means to adequately treat indigent populations at high risk for chronic illness (Vargas and Wasem, 2006).

A 2007 World Health Organization evaluation of the primary care system in Turkey called for a more systemic focus on quality improvement to supplement the performance based provider payments. Ninety percent of family doctors in the Turkish health system are employed by the state and receive a fixed salary. They receive an additional capitation payment for working in rural areas and
offering predefined preventive services. Recently, the government introduced greater performance incentives to ensure delivery of care in a comprehensive and efficient manner. These new incentives also aimed to address long standing limited integration between primary and secondary care and an insufficient gatekeeping role by family doctors. Policymakers have advocated for a national strategy on quality improvement to support the performance based payments through certification programs, continuous medical education, medical audits, peer review circles, and use of electronic medical records (Kringos, 2011).

Community Engagement

Community engagement is widely regarded as a cornerstone of a primary healthcare approach, but one that has traditionally received limited attention (Bhatia and Rifkin, 2013). In recent years, practitioners have begun to distinguish between community participation, where there is an acceptance of what professionals determine to be priority activities for health, and community empowerment, where communities make active decisions about their health choices and assume greater ownership and control of the process (Ibid.). This review considers a wide range of methods through which communities engage in healthcare decisions and service delivery.

Community engagement has multiple definitions. These efforts are difficult to evaluate. There is growing global evidence that health initiatives that extend beyond the walls of health facilities and engage the community as partners have great potential to improve equity, access, and health outcomes (Perry et al., 2009, Bhatia and Rifkin, 2013, Robyn et al., 2010). Such initiatives are also critical to changing perceptions and health seeking behavior in the community. There is evidence

<table>
<thead>
<tr>
<th>Factors Leading to the Success of Community Based Health Interventions</th>
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<tr>
<td>Community trust and respect in the health system</td>
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<td>Effective outreach through community workers</td>
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<tr>
<td>Methods for screening and monitoring clients</td>
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<tr>
<td>Household engagement to result in behavior change</td>
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<tr>
<td>Linkages and referrals for high quality curative care</td>
</tr>
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<td>Provision for long term planning to achieve buy in</td>
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(Perry et al., 2009)
that community based interventions are effective when integrated with a wide mix of health and development services (Perry et al., 2009). Community based interventions have the greatest potential for impact in weak health systems, where they complement the public infrastructure (Ibid.). While policymakers recognize the value of engaging communities to deliver health interventions at scale, there is limited evidence of successful scale up when governments have led such efforts (Rosato et al., 2008).

The literature is clear about the fact that any successful community based intervention must derive from local need, continually involve the community, and be adapted to particular health and social priorities (Perry et al., 2009, Bhatia and Rifkin, 2013). With this caveat, researchers present several factors that are instrumental to the success of community based interventions. (See box.)

This review places attention on two aspects of community engagement: a) the extent to which equity and gender considerations are built into primary care models and b) the mechanisms that are used to achieve community accountability.

**Equity and Gender**

One of the rationales behind direct engagement of communities is that this engagement ensures that services are both equitable and inclusive in their reach. Healthcare services are commonly unequal in their distribution. Unequal distribution usually results in lower access to effective health services for women, the poor, tribal communities, and other disadvantaged groups (Baqui et al., 2008). In particular, gender discrimination and insensitivity to women’s needs result in wide disparities in health outcomes. These disparities severely limit the ability to achieve Millennium Development Goals and other targets (HLEG, 2011).

**Current Scenario**

Despite improvements in aggregate health outcomes in India, demographic factors, such as gender, caste, wealth, education, and geography remain strong determinants of health status.

The global ranking of India in terms of gender equity is abysmally low, at 113 out of 134 nations (OECD, 2012). Gender disparities are most strikingly reflected in the female to male ratios among children. The sex ratio declined from 927 girls per one thousand boys in 2001 to 914 per one thousand in 2011 (HLEG, 2011). Child mortality rates for girls are sixty one percent higher than for boys (Kishore,
Child marriage is still a common phenomenon: twenty eight percent of all Indian women between fifteen and nineteen years of age are married (OECD, 2012). Early marriage interrupts education and leads to early pregnancy and motherhood, and poverty exacerbates this picture. Women in the richest quintile are six times more likely than those in the poorest quintile to deliver in an institution (Balarajan et al., 2011). This disparity points to a direct relation between being wealthy and access to institutional health services. Finally, distance to health facilities – a key determinant of access – remains a greater barrier for women than for men (Ibid.).

Tribal communities in India have far poorer health indicators than the general population. This disparity is caused by malnutrition, inadequate access to clean water and sanitation, inaccessible health services or lack of appropriate medical attention, and limited education and awareness. Tribal women and children, in turn, are most disadvantaged. The clearest indicator of tribal deprivation is child mortality. In 2005, under five mortality rates among rural tribal children in India were about one hundred deaths per thousand live births, compared to eighty two among all children in India (World Bank, 2011). The incidence of malnutrition is also high. Children under three years of age in scheduled tribes and scheduled castes are twice as likely to be malnourished than the general population (Deogaonkar, 2004).

In the Twelfth Five Year Plan for health, the Planning Commission recognized the need to achieve inclusive growth in the system. The objective of inclusive growth is to ensure that women, scheduled castes and tribes, and other vulnerable groups are afforded equitable access to services (GOI, 2013). Donors, nongovernmental organizations, and civil society groups are working with governments to devise strategies to reduce inequities in the delivery of healthcare. Approaches that address social determinants of health – in the distribution of resources, education, and other public goods – are also critical (Balarajan et al., 2011).

Community based programs and outreach workers can help to bring about behavior change among disadvantaged communities by targeting these groups (Rao and Mant, 2012; Baqui et al., 2008). Poor awareness and education, as well as sociocultural factors, such as religion, gender, or cultural beliefs, can directly influence health seeking behavior. According to the National Family Health Survey (2005-2006), seventy two percent of women who did not give birth in a health facility did not believe that such care was necessary (Balarajan et al., 2011). Often, the ability to influence demand for services is at the heart of how the
community responds to new programs and services. The ability to influence demand is necessary to ensure that a supply side intervention is sustained (Banerjee et al., 2010). Unless the demand side interventions are strong, supply side interventions alone do not lead to better outcomes. Community based interventions can be a critical ingredient to build awareness, to improve health literacy, and ultimately, to change health seeking behavior.

**Select Initiatives**

A qualitative gender assessment of RSBY reinforces our knowledge that women typically face greater barriers to healthcare. The study highlights the importance of incorporating design features that explicitly enhance access for women. Based on 2012 data, the study found that the number of women enrolled in the program was lower than men, by two thirds. Women also reported that they faced barriers in access to care. The barriers they cited included distance to facilities and lack of control over household finances. Once enrolled in RSBY, however, women had higher usage rates than men. This difference is attributed in part to the cashless services and access to a smart card, though women did report that they faced discrimination from health providers. The study highlighted the importance of gender specific programming. Such programming includes the use of participatory communication strategies to engage women who are largely illiterate and have little awareness about RSBY benefits. The gender specific programming ensured access to female counselors at health facilities to improve quality of care (Cerceau, 2013).

**CARE India** partnered with government ministries to implement the Integrated Nutrition and Health Program in Uttar Pradesh. An evaluation of the program drew important conclusions about how to reach the poorest. The partnership aimed to improve the health and nutritional status of women and children. The partnership placed a specific focus on improving coverage of healthy maternal and newborn care practices. The strategy used home visits by community based workers who were trained and assisted by nongovernmental organizations. The evaluation was conducted between 2003 and 2006. Results showed that districts where the program was facilitated by nongovernmental organizations had greater overall coverage and equity than government districts. This finding underscored the added value of these organizations to outreach efforts. Community workers ensured that the poorest segments were equally capable of changing household practices to improve their health. However, the poorest were most disadvantaged with regard to the use of facility based services, given issues of accessibility and
cost. The study authors advocated for additional safety nets for the poorest to address such barriers to care (Baqui et al., 2008).

Three World Bank health systems projects in Rajasthan, Karnataka, and Tamil Nadu have explicit strategies to improve the health of tribal groups through targeted information, counseling, and community outreach. The World Bank implemented these interventions in partnership with local nongovernmental organizations and governments. The projects are being scaled up to improve both the health seeking behavior of tribal communities as well as community members’ experiences at public health facilities. In Karnataka and Tamil Nadu, tribal auxiliary nurse midwives and counselors are being recruited and trained to provide outreach for communities and to guide patients during their visits to public facilities. Karnataka has also introduced a twenty four hour help desk to address complaints and to mediate between patients and service providers (World Bank, 2011).

Accountability
One factor that weakens the public health system is the limited means to ensure the accountability of the system to the community. Accountability is simply the relationship in which decision makers or those who hold power (the government) are held accountable for their conduct to the public or consumers (Perry et al., 2006). Accountability is an important foundation of health systems governance, which is discussed in the following section.

Current Scenario
The public health system of India has weak accountability measures. Lack of strong accountability suggests that policymakers are neither fully cognizant of community needs nor held accountable (Perry et al., 2006). However, significant reforms are underway to decentralize services to local government and give greater voice to communities. This process also positions communities to monitor service delivery better.

A pair of landmark constitutional amendments – the seventy third and seventy fourth amendments – gave greater authority to Panchayat Raj Institutions. The amendments have catalyzed the decentralization agenda in health and other social sectors. The Panchayat Raj Institutions consist of gram sabhas, representatives from the village, that are responsible for decision making and ensuring that elected officials are accountable in their positions. The Panchayat Raj Institutions have reserved seats for women, scheduled castes, and tribes to
ensure inclusive representation (Perry et al., 2006). In most states, the Panchayat Raj Institution framework is complemented by additional village level accountability mechanisms, such as the right of recall and information, patient welfare committees in hospital settings, and platforms for community grievances (Perry et al., 2006).

Some states, including Kerala, West Bengal, Gujarat, and Maharashtra, have made important progress toward decentralizing authority to deliver primary healthcare. Practitioners advocate for greater community consultation and inclusiveness in the national landscape (Yeravdekar et al., 2013). Practitioners recommend devolving more authority and strengthening the management capacity of the Institutions. Practitioners also recommend increased community participation in audit processes, regular evaluation and dissemination of results to ensure transparency, and replication of the efforts in community based monitoring that are currently being piloted under the National Health Mission (Yeravdekar et al., 2013; John, 2012). The Planning Commission admits that more work is needed to strengthen community accountability by improving the effectiveness of patient welfare committees, also known as Rogi Kalayan Samitis, village health and nutrition days, and public hearings (GOI, 2013).

Nongovernmental organizations also play an active role in mobilizing communities, delivering primary healthcare services, and explicitly improving community accountability. These organizations are often commissioned by the government (for example, under the National Health Mission) to deliver a particular package of services, or they may operate autonomously (as outlined below in Select Initiatives).

Select Initiatives

The state of Kerala has made significant progress in transferring its public health facilities to the management of the Panchayat Raj Institutions. There are over one thousand of these institutions in Kerala. This process of transferring health facilities has resulted in an institutionalized platform of representation by the community, elected officials, and department heads from other sectors. In 2011, the Planning Commission sponsored an evaluation of forty-two Panchayat Raj Institutions. The study offered important insights about the contribution of these institutions to the public health system (John, 2012).

By transitioning to management by the Panchayat Raj Institutions, public health facilities maintain dual lines of control: the state government employs medical personal, and the Panchayat Raj Institutions oversee administrative functions,
including management of facility infrastructure and supplies. The evaluation indicated that when relations between both groups are strong, there was substantial improvement in staff attendance levels, availability of medicines, quality of services, and infrastructure. The opposite was true when there was a conflict between the Institutions and medical leadership. The review also drew attention to the lack of adequate professional support provided by the Panchayat Raj Institutions to the public health institutions. Lack of support resulted in the Panchayat Raj Institutions playing only an administrative oversight role. On the whole, the Panchayat Raj Institutions fared well in terms of community engagement. They solicited continuous input from the community via gram sabha meetings and created effective linkages to address improved water, sanitation, and other social issues (John, 2012).

**Partnerships with nongovernmental organizations and civil society groups** also have the potential to impact accountability and health programming. One such partnership involved a coalition of thirteen nongovernmental organizations representing 226 communities in Maharashtra. The coalition carried out an audit of the vital registration system used by the government. The group found that neonatal infant and child mortality rates were underestimated by a significant margin of twenty points. This effort resulted in government reforms to strengthen the vital registration system (Perry et al. 2009).

In Bangalore, an independent group known as the Public Affairs Center has used citizen scorecards to collect and disseminate information about public satisfaction with health and other social services. This process has led to advocacy for change (Hammer at al, 2006). In one initiative, the Public Affairs Center worked in partnership with the Bangalore Municipal Corporation to assess the quality of services delivered through their maternity homes. The scorecards revealed low quality services: Only thirty percent of the clients received free medicines. Only fifty four percent reported that a disposable syringe was used. They also revealed high levels of corruption. Public disclosure of these findings pressured the corporation into taking action in these areas (World Bank, 2013).

**Governance**

Governance is increasingly recognized as a core function of a health system and a determinant of its effectiveness and performance. In broad terms, health system governance comprises the “actions and means adopted by a society to organize itself in the promotion and protection of the health of its population” (Dodgson et
al., 2002). Good governance can lead to inclusive, responsive, and fair processes and outcomes and public trust in the system (Huss et al., 2010). The concept of governance is multidimensional and has varying definitions. The box below outlines the key variables of health system governance articulated by the World Health Organization.

The World Bank offers a helpful framework that distinguishes health systems governance across three levels:

- At the broadest level, governance captures the political actors who contest and collaborate to establish the particular public policies of each society.

- At a secondary level, governance refers to the results of these specific public policies, as reflected in the rules, institutions, laws, and enforcement mechanisms.

- At the level of particular organizations, governance is reflected in the systems, processes, and leadership of a given organization, such as a social security institute, a district health system, or a hospital (Savedoff, 2011).

Governance is multidimensional and encompasses the following elements:

**Policy Guidance:** Strategy and planning, identifying roles of public and private sectors

**Intelligence and Oversight:** Ensuring effective monitoring and analysis

**Collaboration and Coalition Building:** Engaging across public sectors and with external stakeholders

**Regulation and Incentives:** Managing fair and effective enforcement

**System Design:** Reducing duplication and fragmentation

**Public Accountability:** Ensuring transparency and engagement

(WHO, 2007)
The promotion of good governance and minimization of corruption are longstanding challenges of most health systems. The inherent complexity of health systems, the information asymmetry between different actors, and uncertainty about future illness are all contributing factors to poor governance (Huss et al, 2010). Poor governance can directly facilitate corruption in health systems. Corruption, in turn, thrives on weak management structures. Corruption not only results in waste of scarce resources, it also adversely impacts access, quality of services, and their unit cost. Poor governance and corruption invariably impact poor and vulnerable populations disproportionately (McCay and Liang, 2012).

In pluralistic healthcare markets, such as the market in India, a wide range of actors provides healthcare products and services. This diversity outpaces the capacity of the state to regulate and monitor the system. Many transactions related to healthcare take place outside the regulatory oversight of government. In such contexts, it is important to understand the different actors – public, private, and not for profit – the incentives, and rules that influence their behavior and seek out relevant, multipronged solutions to bring about long term institutional change (Siddiqui et al., 2009). Strategies may include strengthening consumer education or rights groups that demand transparency and information as a parallel effort to rule enforcement.

**Current Scenario**
The health system in India has weak governance and high levels of corruption and waste. This combination of factors impedes the achievement of health system goals. The health sector is the second most corrupt sector in the country. The country as a whole already ranks poorly on the global corruption index (Sudarshan and Prashanth, 2011). Some of the indicators of a poorly governed system include high rates of absenteeism among public health employees, frequent staff turnover, ineffective procurement systems, unofficial payments or bribes, and poor oversight of private providers. With this backdrop, it is also clear that governance practices between states vary widely. Some states, such as Karnataka and Tamil Nadu, are beginning to show excellent leadership and systems performance. Andhra Pradesh and Gujarat have instituted management information systems to improve transparency and accountability, though others lag behind (GOI, 2013; Rao and Mant, 2011).

In the last decade, the central government has initiated reforms to improve the governance of the health system. Specifically, the central government has
decentralized authority to the states through the National Health Mission. The central government has also made parallel efforts to use a streamlined and interactive health management information system, strengthen pathways to build community accountability, introduce performance incentives for health workers, and integrate vertical disease programs. Despite progress in building community ownership and improving service delivery in select states, the Planning Commission points to several longstanding gaps: a lack of capacity and flexibility among states to address their own disease priorities, fragmentation and waste within procurement systems, and inconsistent monitoring and performance among health facilities according to the Indian Public Health Standards (GOI, 2013; Rao and Mant, 2011). The Planning Commission calls for greater engagement across sectors and within ministries (GOI, 2013).

India has a complex regulatory framework for health and limited enforcement and implementation capacity (Balarajan et al., 2011). In 2010, the government of India enacted the Clinical Establishments Act to regulate clinical establishments. Wide gaps in the quality and reach of this regulation remain. States have the liberty to decide if they want to accept the legislation and amend it as appropriate for the state. As a result, many Indian states do not have the Clinical Establishments Act (Ibid.). The Planning Commission outlined several policy steps to strengthen regulation. The steps include revising the Indian Public Health Standards to incorporate standards for different types of facilities and for a full range of medical conditions, with incentives tied to performance. The government also intends to appoint new public health cadres with the responsibility of enforcing all health regulations. The government will also appoint professional councils to assess compliance with standard treatment guidelines (GOI, 2013).

The health information architecture in India lacks a coherent strategy to synthesize and analyze data to support improved decision making. Specifically, health information is not integrated among central, state, and local health units; the public and private sectors; and across ministries (Vital Wave Consulting, 2009). In the public sector, data requirements are imposed top down and reported via manual platforms. This practice offers no incentive to influence health worker behavior or data quality. The growing availability and use of electronic patient records and other information technology have the potential to improve monitoring and clinical decision making. Improvements to these processes would strengthen frameworks for clinical governance and quality of care. However, with the exception of state led pilot projects underway through
the National Health Mission (See Select Initiatives on the following page), these efforts are restricted to private sector hospital networks. These process improvements do not yet yield evidence about improving outcomes for primary care (Rao and Mant, 2011). One of the goals spelled out in the Twelfth Five Year Plan is to network all health facilities under a standard health management information system and enforce clear data requirements.

In the insurance sector – where adequate monitoring and oversight is critical for fraud control and program management – researchers note that programs have yet to institutionalize robust governance frameworks. The government insurance programs rely on insurers and third party administrators that are themselves regulated by the national government, to oversee management and claims administration as well as to interact with consumers. The government sponsored health insurance programs have created autonomous governing agencies. These agencies maintain little consistent coordination and consultation with key interest groups, including consumers and providers (La Forgia and Nagpal, 2012). The program in Andhra Pradesh is an exception, with efforts to improve transparency among providers and consumers. The autonomous Dr. NTR Vaidya Seva Trust is able to monitor the program by using an electronic platform that offers real time communication between insurers, providers, and the Trust itself. The Trust also addresses customer grievances and solicits regular patient feedback (GOI, 2010). The health management information system has improved the ability of the government to serve as a steward of the tertiary healthcare sector, but there is a severe lack of data on the quality of healthcare services. This is an area that requires much more attention.

**Select Initiatives**

Starting in 2001, the government of Karnataka prioritized corruption as one of the top issues affecting its health system. This decision came in response to evidence that bribes for healthcare accounted for the largest single source of any sector, at forty percent, and that nearly a quarter of the health budget was unaccounted for due to corruption (Sudarshan and Prashant, 2011). The catalyst for reform was a new, committed leadership that oversaw the Lokyukta in Karnataka. The Lokyukta is an ombudsman like body that offers recourse for consumers.

This strong political will for change was coupled with a movement by citizens to demand transparency and accountability (Huss et al., 2010). One of the outcomes of this process was the creation of an autonomous Karnataka State Drugs and
Logistics Society to procure and distribute essential drugs. A focus on recruiting district officers with good leadership skills also led to substantial improvements in staff turnover (Sudarshan and Prashant, 2011). The reform also resulted in greater public awareness and institutionalized channels for consumer voice and recourse.

Karnataka has also strengthened community engagement and transparency within the National Health Mission. The state supported the formation of patient welfare committees within health centers. The committees receive funds through the Rural Health Mission. These committees represent a cross section of beneficiaries, women’s groups, and service providers. The aim of the committees is to improve the management and accountability of hospitals. At the village level, health and sanitation committees have been formed to play the same role for frontline providers. In 2009, Karnataka started piloting the Community Planning and Monitoring of Health Systems, a platform that also falls under the umbrella of the National Health Mission. The Community Planning and Monitoring of Health Systems platform raises awareness about health issues and public entitlements. It offers consumers an official channel to voice their feedback through village report cards (Sudarshan and Prashant, 2011).

Gujarat was identified as one of eighteen states to pilot the hospital management information system under the National Health Mission. The management information system platform collects data on two hundred key indicators relevant to maternal and child health. In 2007, the state of Gujarat enhanced the functionality of the streamlined information system used by the Rural Health Mission to support innovation and local adaptation. The revamped platform was developed and deployed at twenty five district hospitals. Beyond meeting the core reporting requirements for the Rural Health Mission, the revamped system has the capacity to track patient medical histories and to manage inputs for laboratories, pharmaceuticals, human resources, and medical equipment. These capabilities give administrators the ability to oversee comprehensively all aspects of hospital management, patient flow, and ultimately, organizational governance (Vital Wave Consulting, 2009).
Case Studies: Innovative Institutions Across the Four Pillars

We selected fifteen institutions to be a part of the primary research. We selected these institutions for the promising work they do across the four primary healthcare pillars. Nearly all the institutions are directly involved in service delivery, either through outsourcing or managing their provider network. In practice, most organizations have functional expertise across the four pillars. The chart below is a high level guide to identify those organizations that have expertise and innovation in a particular pillar.

The review team visited most of the organizations in person. In a few cases, the team was only able to conduct phone interviews. (See Appendix 2 for details.) The aim of the interviews was to understand how each organization operated across the four pillars, to identify their distinguishing points of innovation and challenges, and to learn about their outlook on the future. (See the Appendix, Studies 1 through 15, for detailed reviews about each organization.)

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**Service Delivery**

**E Health Point**

E Health Point (EHP) is a for profit company that manages healthcare units, also called E Health Points, in rural Punjab. Each unit provides families in rural areas with clean drinking water, drugs, diagnostic tools, and telemedicine services. Typically, an E Health Point location starts out as a water service and then expands to a clinic. Currently, the company operates eight health points and 160 water points in Punjab. One of the innovations of the company is to cross subsidize the health centers with the water points. This model will now change as the company has created distinct organizations to manage the water and health
work. Health delivery is conducted through a hub and spoke model. The individual healthcare units are the hubs, and village health workers are the spokes. Information technology is core and used in three ways: The patient engages with doctors through video based telemedicine conversations. Health coordinators carry handheld tablets and phones to get advice from doctors in real time. The organization employs advanced online diagnostic tools as well as electronic patient records. E Health Point has learned that it is essential for the doctor to be present at the telemedicine center for one to two days during the week, since the community values some face to face interaction before they are comfortable using telemedicine.

**Healthspring**

Healthspring is a network of seven primary healthcare centers and over fifty affiliated emergency care providers in Mumbai. Healthspring launched in 2010 to provide quality primary care to middle and upper middle class urban families, thus reducing the need for complicated and expensive tertiary care. Families enroll at the network to access teleconsultations, clinic visits, referrals to specialist doctors, and twenty four hour emergency care. The model ensures high quality services by recruiting experienced doctors and paying a good salary. Healthspring does not provide incentives tied to case volume or referrals. Healthspring places importance on consumer feedback. The network ensures that services are designed for consumer convenience. For example, electronic patient records are integrated at all primary and emergency hospitals. The founders believe that reducing costs or increasing volumes will compromise service quality – something they are unwilling to trade on. The network reports that it is able to treat between ninety to ninety five percent of patients at the primary care level, which helps many avoid the need for specialist care.

**MeraDoctor**

MeraDoctor is an innovative phone based consultation platform for people seeking healthcare. MeraDoctor offers a package of four services for families who enroll, at a fee of three thousand rupees per year. The package includes unlimited advice from a doctor over the phone; discounts at empanelled network providers for drugs, diagnostics, and hospital care; a hospital cash product of five hundred rupees per day of hospitalization, and personal accident coverage. MeraDoctor has developed effective protocols that are customized for teleconsultations. The company also conducts routine training and strict monitoring. MeraDoctor tends to hire younger doctors, who are more comfortable using technology. To date, thirteen thousand people have enrolled with MeraDoctor in Uttar Pradesh,
Uttarakhand, the National Capital Region, and Mumbai. Most enrollees are middle or upper class men from urban areas. Clients commonly call to seek a second opinion on a doctor’s diagnosis or advice on sexual or psychiatric issues, topics that are potentially embarrassing in face to face settings. MeraDoctor is facing challenges in scaling up the business, given that teleconsultation is a relatively new concept. The company would like to retain teleconsultation as their niche while they consider complementing this business model with a brick and mortar primary care network.

**NationWide**
NationWide is a Bangalore based primary healthcare network. NationWide aims to revive the family doctor model. Founded in 2010, the network consists of nine main clinics and fourteen satellite clinics. The model provides a single point of medical care for families. This arrangement bridges the gap between fragmented general practitioner services and expensive super specialist care. NationWide is focused on the proactive management of everyday ailments as well as chronic disease management for noncommunicable diseases. NationWide is renowned for its intensive training – upfront and ongoing – and clear career progression for doctors within the organization. These commitments have resulted in high motivation and retention in the workforce. Doctors are paid a competitive salary plus bonus based on customer feedback and adherence to protocols. These incentives are designed to ensure high quality standards and prevent unnecessary care. NationWide also offers packages to its clients, though these are less popular than had been expected. The organization aspires to expand across India, build its brand, and ultimately begin contracting other providers to support its growth.

**Rural Health Care Foundation**
The Rural Health Care Foundation was founded in 2007 as a platform to increase access to primary care in rural areas. The business model is to provide high volume care at low cost. The foundation currently has eight centers in West Bengal. It has reached over eight hundred thousand patients to date. Restricted to outpatient care, these centers have four departments: general medicine, ophthalmology, dental, and AYUSH. Patients pay fifty rupees per visit. That fee includes consultation and seven days of medicines. The foundation is able to maintain low prices due to relationships with pharmaceutical companies. The foundation also engages in a number of partnerships with nongovernmental organizations to provide free cataract and cleft lip and palate surgery, distribute wheelchairs and artificial limbs, and sell eyeglasses at subsidized rates. The foundation raises philanthropic funds to cover costs and maintain the low cost,
high volume model. Five thousand visits per month allow the foundation to break even. Management motivates staff with performance bonuses. Management also offers room and board for free, an additional incentive that helps recruit and retain doctors in remote areas.

*SughaVazhvu*

SughaVazhvu is a social enterprise located in Tanjavur district in Tamil Nadu. The enterprise operates through a chain of seven rural micro health centers. Each health center covers a population of eight thousand to ten thousand people. The model is focused on delivering proactive, high quality, and affordable care to the community. One of the innovations of SughaVazhvu is in recruitment and training of doctors certified by Indian Schools of Medicine, specifically Ayurveda and Siddha providers. These doctors manage the rural health centers. The doctors undergo a bridge training course focused on disease pathology, allopathic pharmacology, and counseling and other soft skills. The enterprise provides support to the doctors on the use of standardized protocols and supervises the doctors closely. The doctors work in tandem with health extension workers, who provide a point of contact for the community. SughaVazhvu makes extensive use of technology across a range of functions: mapping the community, providing decision support to doctors, capturing patient information and outcomes, managing drug stocks and logistics, and training and reviewing staff performance.

*Swasth India*

Swasth India is a network of primary care clinics based in the urban slums of Mumbai. Communities in these slums have limited access to high quality healthcare. Swasth operates eight clinics. Over thirty five thousand families are registered. Staffed with a medical doctor and in some cases a dentist, the clinics offer primary care services, dispense drugs, conduct diagnostics, and offer day care. They also carry out health promotion and prevention activities in the community and at schools. Swasth is able to offer services at a forty percent discount by partnering with pharmaceutical companies and bypassing intermediaries, using cheaper variations of prescriptions, and not charging a referral fee. Swasth India makes effective use of technology across its operations, from standardized protocols, referrals, stock management, and patient records. Swasth also recruits staff from within the community or nearby vicinities. Local recruitment helps to ensure buy in from and a sense of accountability to the community. Swasth hopes to expand its footprint in Mumbai. Swasth plans to operate between sixty and eighty clinics by 2017.
Financing

Rashtriya Swasthya Bima Yojana Outpatient Pilot Program

The Rashtriya Swasthya Bima Yojana (RSBY) outpatient pilot program launched in 2011 in Gujarat and Odisha. The program is available at no additional cost to RSBY enrollees in the pilot districts. The outpatient program offers free consultations and drugs at networked public and private providers. The outpatient program uses the technology platform of RSBY but has incorporated specific software for outpatient care. To address low usage in the early months, the pilot program expanded its education and communication channels – including art and dance forms – targeted to communities and healthcare providers. The outpatient pilot program has effectively linked with other government programs, including Janaushudhi for generic drugs. The outpatient program used technology in remote parts of the country and implemented interactive communication techniques. Providers were initially reluctant to invest in the necessary technology. This reluctance changed when providers observed high patient volumes, spilling over to their other services, and improved linkages for drug supply. Usage rates were lower than expected. Early analysis of usage patterns indicates that the outpatient benefits have reduced the average size of inpatient claims, an important validation of its need and potential.

Uplift Mutuals

Uplift Mutuals was established in 2004 as a platform to promote mutually owned health protection funds for low income communities. Uplift works through microfinance institutions to reach communities. Uplift currently enrolls two hundred thousand people through six microfinance institutions in Maharashtra and Rajasthan. In exchange for an annual premium of one hundred rupees per member, Uplift provides hospitalization coverage as well as a range of preventive health services: hotline, health camps, and health talks. Uplift distinguishes itself from many other programs by focusing on these preventive services. Uplift also provides a range of administrative support to the health mutual funds. This support includes product design, staff training, back office administration, empanelment of hospitals, and monitoring. By establishing community owned mutuals, Uplift builds the capacity of communities to manage their own risk. This strategy contributes to improved health seeking behavior in the community. In the near future, Uplift plans to create a primary care intensive model in the suburbs of Pune. It will establish a network of clinics to serve as the foundation for a broader health mutual platform. Through this network, Uplift will also underwrite the provision of outpatient primary care.
Community Engagement

CARE Rural Health Mission
The CARE Rural Health Mission is a not for profit organization funded by the CARE Foundation. The CARE Mission operates in Maharashtra and Andhra Pradesh. The program specializes in using telemedicine solutions to bring health services, including insurance, to rural areas. The CARE Mission recruits and continuously trains community health workers – Village Health Champions – to conduct home visits. The CARE Mission equips Village Health Champions with handheld mobile devices that are linked to primary healthcare centers and hospitals. Through this outreach model, the program reaches around twenty thousand people in Maharashtra and three hundred thousand people in the coastal belts of Andhra Pradesh. The CARE Mission has learned that it takes time to obtain community buy in to establish health centers and for the community to trust the Village Health Champions to conduct home visits. Once the community is on board, however, the CARE Mission has seen a dramatic shift in how care is delivered. In the first year, only twenty percent of care was delivered by Village Health Champions and the rest at clinics. In the second year, eighty percent of care was delivered by Village Health Champions, with only twenty percent of the clients having to visit a clinic. The community values face to face contact with the Village Health Champions and the ability to purchase drugs and conduct basic tests during the home visits. The community is less accepting of the remote teleconsultations with doctors. The CARE Rural Health Mission has also evaluated the impact of its outpatient health insurance product, which is showing promising results.

MerryGold Health Network
The MerryGold Health Network is a social franchise in Uttar Pradesh. The franchise network focuses on maternal and child health. MerryGold operates as a hub and spoke model, with three tiers: MerryGold hospitals, MerrySilver clinics, and MerryTarang health workers. Key features of the model include a focus on low cost, high volume operations. MerryGold offers services at thirty to forty percent below market rates. The network also increased client volume among franchisees by eighteen to twenty five percent. MerryGold offers a full range of maternity and child health services. MerryGold maintains linkages with diagnostic centers, pharmacies, insurance, and financial institutions. A point of excellence is the strong community engagement through MerryTarang members. These members are community workers who are given health and enterprise training to provide basic medical services. MerryTarang members create strong
linkages between communities and providers, facilitating interactions every month. MerryTarang members also host ceremonies in the villages to generate awareness around health issues. MerryGold has faced pressure from development partners and the government to achieve results in the short term even though building brand equity in the market takes time. MerryGold has also had difficulty linking with government programs or establishing strong referral linkages in the network. Recruitment of franchisees in remote areas has also been challenging.

**Mamidipudi Venkatarangaiya Foundation**

The Mamidipudi Venkatarangaiya Foundation is a family owned organization that has a long activist history of working with communities to bring about social transformation. The foundation has worked across many states in India since the 1980s. The roots of the foundation are in the movement against child labor. Today, the foundation works with communities in more than fifteen states to improve maternal and child health. The foundation takes a rights based, highly consultative approach to bringing about changes from the bottom up. The foundation identifies problems together with communities and works collectively to address them. The foundation actively engages with citizens groups, Panchayat Raj Institutions, religious leaders, employers, landlords, caste leaders, district officials, and police officers to change attitudes, start dialogues, and put pressure on public systems to deliver better healthcare. Between 2004 and 2006, the work of the foundation in Andhra Pradesh led to large reductions in maternal and infant mortality rates. The maternal mortality rate decreased from one to .05 per thousand. The infant mortality rate decreased from 120 to forty five live births per thousand.

**Governance**

**Karuna Trust**

Karuna Trust is a not for profit organization with roots in the fight against leprosy in Karnataka. Karuna Trust is renowned for its management of primary healthcare centers under partnership with state governments. The Trust currently manages seventy three primary healthcare centers across nine states in India. These centers receive the same infrastructure, resources, and personnel that the government would typically allocate. Karuna Trust brings additional technical competency to the management of these centers, incorporating mental health services and dental care and management of communicable diseases, reproductive health, and HIV/AIDS. The Trust also places emphasis on exchanging best practices between centers. The governing structures of Karuna
Trust are robust, ensuring community accountability and regulatory oversight. Committees meet regularly to monitor performance and address grievances. These groups comprise representatives of the community, civil society, and government, thus ensuring broad perspective to improve the performance of the primary healthcare centers and to evaluate the public private partnership.

**Dr. NTR Vaidya Seva Scheme**
The Dr. NTR Vaidya Seva Scheme was launched in 2007 by the government of Andhra Pradesh as the Rajiv Aarogyasri Scheme. The program provides financial protection to families that are below the poverty line for tertiary medical treatment and some preventive care. Dr. NTR Vaidya Seva is known to have strong governance and community engagement structures. The program created an autonomous governing body, the Dr. NTR Vaidya Seva Trust, led by a board of trustees. This board includes the principal secretaries of all relevant departments, health and nonhealth, which enables dialogue and integration. The program is chaired by the chief minister of the state, ensuring high political visibility. At each district, the program appoints a medical officer to work closely with the panchayat, political heads, and others to help decentralize decision making. The program has a transparent hospital empanelment process, a clear and efficient preauthorization system handled via electronic medical records, and routine audits to ensure quality. On the community interface, the program offers a telephone helpline for beneficiaries to voice grievances and access counseling or information about hospitals. The program also appoints Aarogyamithras, or community representatives, to every primary healthcare center and network hospital. The Aarogyamithras inform beneficiaries about their rights and help them to navigate the system.

**Health Management and Research Institute**
The Health Management and Research Institute was launched in 2007 as a platform to use technology to improve the accessibility and affordability of healthcare. The Institute operates in five states today. A core service offered by the Institute includes health information helplines that are operated by trained clinical staff and are backed by software developed by the Institute. The Institute also has mobile medical units that are equipped with computers and medical and enrollment equipment. The Institute provides telemedicine services, through which they commonly support community health workers. These health workers use handheld devices to conduct basic screening and tests. The Institute also uses technology for data management and backend support. The Institute helps
organizations to improve their targeting, service quality, and emergency response, all of which contribute to improved governance and accountability.
Discussion

This discussion is structured according to the four pillars defined in our framework. The discussion is primarily a synthesis of our findings from the interviews, but also reflects key takeaways from the literature review, as appropriate.

**Service Delivery**

The scope of primary care services varies by context.

There is no single, uniform definition of “primary healthcare” among the organizations reviewed. Each organization defines its service package according to local need and expressed demand, the availability or lack of availability of related services (such as maternity care through the public sector), and the best value proposition for the organization, which may involve curative care or diagnostic testing. Some organizations in our review provide emergency care services (Healthspring, CARE Rural Health Mission). Others treat mental health issues (Karuna Trust), offer dental and ophthalmology services (Rural Health Care Foundation), or focus on providing maternal and child health services (MerryGold). Many groups noted that a growing share of patients have chronic noncommunicable diseases, including diabetes and hypertension. In response, they have developed specific packages to address this need. Eighty percent of the patients at SughaVazhvu seek care for chronic conditions, for which they can purchase a low cost annual package. This is despite the fact the government of Tamil Nadu offers a program for noncommunicable diseases.

Organizations are attempting to shift health seeking behavior from reactive to proactive care.

Several of the organizations studied are making efforts to shift the paradigm of health seeking behavior from reactive to proactive care. The organizations encourage people to seek early and effective healthcare. The approaches taken by different organizations vary. Some recruit health extension workers to conduct household outreach. Others engage with schools and community groups. Still others map the community to understand community health priorities and to build awareness. These strategies are paying off, though many organizations express that changing mindsets and behavior takes time and continuous engagement. Given sufficient training and time, Village Health Champions at the CARE Rural Health Mission were able to address eighty percent of their clients’ health needs at the community level and reduce the number of clinic visits. Many
groups are offering preventive care and education. Not many have the bandwidth to offer promotive care that includes access to clean water and sanitation.

**Quality is a larger focus for smaller organizations.**
Nearly all the networks place an emphasis on ensuring high quality. The groups that work with smaller population segments and are centrally managed, such as NationWide, Healthspring, and SughaVazhv, seem to maintain a stronger effort in doing so. These networks are able to invest in intensive training, support, and continuous education. They hold staff accountable to customer feedback, performance targets, and adherence to standards. NationWide mandates three hundred hours of annual training for its doctors. NationWide subsequently measures the doctors’ practical competency or “fitness to practice on an ongoing basis.” NationWide also measures the satisfaction of patients. SughaVazhv provides continuing medical education at least once a month to its staff. SughaVazhv has developed standard protocols for over eighty primary healthcare conditions to support the staff. SughaVazhv also audits twenty percent of all patient interactions to ensure adherence to protocols. For groups that focus on high volumes and low cost, such as the Rural Health Care Foundation, having a qualified doctor available in rural areas is a critical element of quality healthcare. Among social franchises, such as MerryGold, franchisees have a contractual obligation to adhere to clinical guidelines and to participate in quality audits. The degree of oversight and control is limited. This limitation is due in part to the dispersion of providers, the administrative cost of quality assurance, and the primary focus of the network on achieving volume and access.

**The structure of health worker incentives impacts service quality.**
Health networks use different payment and incentive terms to influence behavior and to maximize outputs and quality. Many avoid fee for service payments in favor of salaries. Salaries encourage doctors to spend more time with patients and not prescribe unnecessary tests or specialist services. NationWide pays its doctors a salary that is above market, with an additional performance incentive tied to patient satisfaction and adherence to protocols. SughaVazhv also offers a performance incentive based on meeting certain targets. These incentives are not directly tied to customer satisfaction or adherence to protocols. Some networks, such as NationWide and Healthspring, are wary of tying incentives to patient volumes or referrals for risk of compromising quality. Others, like the Rural Health Care Foundation, have chosen to incentivize doctors based on their caseload, specifically to ensure high efficiency.
**Bringing health workers closer to the community is critical but challenging.**

Organizations are recognizing that by bringing health information and care closer to the community they can improve health utilization and outcomes. They are using various strategies to do so. These strategies include training community health workers, equipping them with mobile phones or video equipment, incentivizing doctors to work in rural communities, or mainstreaming AYUSH practitioners. AYUSH practitioners tend to be more available in rural areas. These strategies have their challenges. The CARE Rural Health Mission provides training and support to community workers to act as frontline gatekeepers. The CARE Mission has learned that finding the right people for this task (i.e. women who have strong social skills and willingness to conduct home visits) is not always simple. The same is true for the MerryGold Health Network. MerryGold has difficulty identifying appropriate franchisees in rural areas. The Rural Health Care Foundation offers free accommodation and board for medical doctors to relocate to rural areas. The foundation still faces difficulties recruiting MBBS doctors. SughaVazhvu recruits Ayurvedic and Siddha practitioners to manage their clinics. These practitioners are legally allowed to practice allopathic medicine in some states, including Tamil Nadu and Maharashtra. SughaVazhvu has found that attrition rates are high. Doctors only stay an average of 1.5 to two years. This dropout rate is attributed in part to the need to travel from the nearby town. Promising strategies are being tested, but there are no silver bullets to address the question of health worker recruitment and retention in remote areas.

**Technology is advancing efficiencies and quality of care.**

In its role to manage and integrate information, technology is a key facilitator of improved effectiveness and quality. Many organizations use health management information systems across functions. These functions include the maintenance of real time records, usage tracking, identification of gaps, and support for clinical decision making. At Swasth India, all aspects of the workflow are digitized and embedded on an integrated platform. These aspects include standard protocols, referrals, stock management, patient history, and reports. SughaVazhvu integrates technology throughout its functions, from community mapping, eLearning modules for staff, real time audits, and performance management. SughaVazhvu has created a dashboard of seven overarching measures. (See above.) These measures are broken down into twenty seven additional parameters. These measures and parameters are used across the organization to manage individual and institutional performance.
Technology is used extensively at the Dr. NTR Vaidya Seva Scheme. The program enables the governing Dr. NTR Vaidya Seva Trust to monitor usage patterns routinely and make corrective decisions, where necessary. For example, the program made targeted efforts to reach tribal communities after observing that they were underrepresented in hospital care access. Despite this use of technology among private and public networks, there is limited integration of information management platforms or data between private and government programs, such as with the TB Control Program.

**Technology is a promising interface to reach clients, but barriers persist.**

Technology is being used widely by organizations to replace the need for face to face contact between health workers and patients. Community workers may facilitate this contact, especially where videoconferencing is used (E Health Point and the CARE Rural Health Mission). Community workers are not necessary to a model that is exclusively phone based (MeraDoctor). The success of these models is mixed. Communities seem to value face to face interaction. E Health Point has learned that it is necessary to appoint a medical doctor to its primary care centers at least a few days a week to try to ensure that the first interaction with patients is in person. After the initial interaction, patients are more receptive to follow up care provided over the telephone or by video.

MeraDoctor has learned that effective promotion of its product requires an interactive and, ideally, face to face component, such as focus group discussions or community campaigns. Once people purchase the product, however, they value its privacy. Many discuss sexual and psychological health issues that they may be less comfortable discussing in person. Besides barriers with community acceptance, organizations report that younger health workers are more open and comfortable using technology than older medical staff. Telemedicine initiatives also face the threat of unreliable power and internet connectivity. The high fixed costs of introducing technology may mean that it is not always a feasible option for smaller organizations or ones with low client loads.

**Financing**

**Despite high need, there is limited access to financial protection for primary care.**

Financial protection for health (or health insurance) is largely restricted to coverage for hospitalization. The design of these protection products does not respond to the needs of poor communities. The poor direct a majority of health
spending on routine, outpatient care, and indirect costs such as transportation (Pott and Holtz, 2013). The RSBY outpatient pilot program in Odisha and Gujarat is showing promise in benefiting clients with free consultation services and access to medications. The pilot program is showing early signs that it reduces inpatient claims costs. The CARE Rural Health Mission in Maharashtra offers financial protection to 1,400 families. The CARE Mission has found that outpatient insurance leads to more frequent visits to community health workers. This increased frequency results in earlier identification of illness and shorter and less costly hospital visits. Uplift Mutuals sees the same patterns in its model. Primary care services, including access to a medical helpline and health campaigns, reduce the need for inpatient visits. Uplift also provides a transportation allowance for several rural programs in response to expressed community need.

Looking ahead, there is potential to formalize and build capacity of community-driven initiatives so they can scale up, while also considering linkages between these groups and government programs. Initiatives that are intensively involved with communities may be cautious about their growth trajectories and partners. Uplift Mutuals is clear about wanting to prioritize quality over volume. Uplift carefully selects groups to partner with that are aligned in its approach to community engagement and that want to focus on primary care over secondary or tertiary care.

**Capitation can induce strong primary healthcare delivery but requires the necessary support infrastructure.**

Capitation can encourage early, more effective, and less costly treatment by providers. For this reason, capitation is conducive to primary care. Systems that use capitation payments to reimburse providers for primary care are proving effective in a number of countries. Systems that use capitation require a strong supporting environment and the ability to make necessary course corrections. In Ghana, the National Health Insurance Scheme chose a capitation system to contain costs and to improve risk sharing and efficiency. This initiative was embedded within its successful reforms to support primary and community-based care (Joint Learning Network, 2013).

Other countries, like the Philippines, have experienced some of the drawbacks of capitation payments, such as underprovision of services. In response, these countries have introduced fee for service payments for certain services that they would like to promote, such as preventive care practices. Experiences from Central Asia and Turkey show that it is important to ensure that public facilities
participating in capitation payment programs have a high degree of autonomy. Autonomy allows facilities to reallocate resources to invest in their clinics, thus responding to patient demand (Langenbrunner et al., 2009).

Capitation payment models are typically conceived and implemented by governments as part of a wider health system or a planned reform. Although nongovernmental capitation payment initiatives exist, they tend to be smaller in scale. An initiative led by MicroEnsure and PharmAccess in Tanzania has fifteen thousand enrollees. Across the board, when capitation is used, it is usually combined with other payment methods, including salaries (in publicly financed models) or with fee for service allocations for hospitalization, specialist care, or even certain primary services.

The literature makes clear that every capitation model varies according to its objectives. These objectives may be to increase access to primary care, to improve quality, to reduce system costs, or a combination. Capitation models also vary according to the capacity and needs of a given health system. With this caveat, the experts point to several considerations when designing capitation models: First, in shifting the paradigm of healthcare delivery, where providers are required to make accurate diagnoses and deliver efficient care, capitation systems call for ongoing support and training of providers. Second, capitation also requires well designed performance incentives and monitoring systems to ensure that providers do not underprovide care or overrefer. Third, capitation requires appropriate risk adjustments to match localized epidemiological patterns and to cover private provider costs. Providers in India may resist capitation, particularly if they are not assured a fixed volume of cases or a risk cover. However, providers may also value the upfront and predictable payments that capitation affords.

**Community Engagement**

*A community interface helps ensure equity and gender sensitive services.*

As discussed above, many organizations are engaging directly with communities to make health services more equitable and accessible. The need to travel long distances to reach providers results in travel expenses and lost wages, a common barrier to use of services. Lack of information is also a common constraint. These and other barriers are only exacerbated for women, as underscored in the literature review. One approach that is used to bridge information gaps is to appoint community representatives at hospitals. These representatives inform beneficiaries about their rights and help them to navigate the system. This is the
role of Aarogyamithras in the Dr. NTR Vaidya Seva program. Community programs also recruit female health workers to engage directly in communities. Community workers in the MerryGold Network organize “Godh Bharai” ceremonies, or baby showers, in the community. These ceremonies provide a way to connect with pregnant women and build awareness around maternal health needs and institutional deliveries. Community workers also facilitate monthly interactions between mothers and providers. Similarly, several organizations (including the CARE Rural Health Mission) conduct home visits in the community. These visits proactively bringing care to people’s doorsteps. A fundamental challenge lies in bringing about lasting changes in community mindsets so that people value and demand high quality and efficient care that may (only) be promotive or preventive in nature.

**A mix of strategies are used to ensure accountability to communities and patients.**

Some organizations focus on formally engaging with opinion leaders and community representatives. Others rely on soliciting individual patient feedback to ensure accountability. SughaVazhvu is an example of an organization that uses both strategies. SughaVazhvu engages with key opinion leaders – such as teachers and government officials – to ensure buy in for its model and to involve them in strategy and planning. The organization simultaneously seeks active feedback from patients through telephone calls and home visits, thus systematically also taking their voices into account. Other groups such as NationWide and Healthspring that target a more affluent clientele are focused on soliciting patient feedback. Patient opinions matter strongly in their decision making.

Uplift Mutuals devolves risk and management of the mutuals to the community. Uplift is an exception. Uplift holds communities fully accountable to themselves. The community is responsible for designing products, approving claims, and managing its finances. Similarly, the Mamidipudi Venkatarangaiya Foundation engages deeply with a broad representation of community stakeholders. This engagement allows the foundation to identify key problems with its health service delivery and to devise strategies collectively to change the system. Depending on the core orientation of a program, resources at hand, and scale, most initiatives will have to determine a balanced approach that draws on appropriate accountability strategies.
**Governance**

*There are signs of improving governance practices in public programs.*

Governance reforms in public programs signal that important changes are being initiated to strengthen frameworks, to improve measures for community accountability, and to enhance transparency and use of information. The Dr. NTR Vaidya Seva Scheme has created an autonomous governing body, with representation from different government sectors. The Dr. NTR Vaidya Seva Trust effectively oversees and monitors the program. The program has made wide use of technology to support and automate systems for hospital empanelment, preauthorization, and clinical audits. The use of technology has led to improved transparency and use of data for decision making.

The program has also introduced platforms to engage with communities. The program has appointed a medical officer at each district to liaise with the panchayat groups and officials. The program has appointed Aarogyamithras to every primary healthcare center to inform beneficiaries about their rights. The program has provided a telephone helpline for beneficiaries to voice complaints. Other platforms, such as those employed under the National Health Mission in Karnataka, have given the community institutionalized mechanisms to report feedback and grievances. The platforms allow the community to participate formally in social audits that monitor how public services are delivered. First steps are also being taken to streamline how health information is collected and managed. Far more effort is needed to integrate fully the collection and use of data across public and private sectors, between ministries, and with health financing platforms.

*With little regulatory oversight, most private organizations establish strong self governing frameworks.*

Given that most organizations in our primary research are privately funded and remain largely autonomous from government oversight, the focus of our discussions on governance was on internal leadership frameworks. All groups are constituted with a board, albeit with varied structures and levels of engagement. SughaVazhu has several sister companies and a board comprised of medical doctors and corporate executives from financial services and biotechnology. The board of Uplift Mutuals includes insurance experts and academics, as well as representatives from the community.
For the organizations that are publicly funded (Karuna Trust, MerryGold, and RSBY), we sought to understand how the public private partnership was managed. We also sought to understand what constituted good governance. Karuna Trust, in particular, is focused on managing government primary healthcare centers (seventy three across nine states). Because of this role, the Trust is responsible to governments and communities. Lack of structured guidance from the state government in the establishment of public private partnerships is a challenge. The limited support the Trust receives from local district officials is another challenge. The shortage of support may go hand in hand with the lack of policy guidance. The primary healthcare centers are directly supervised by public agencies. The centers undergo an audit every year. In terms of institutional governance, the Trust has established committees that are represented by government, the community, and the Trust. The committees regularly review the operations of every primary healthcare center. The committees also oversee the functioning of all Trust partnerships at the state level. The MerryGold Health Network is overseen by the board of the Hindustan Latex Family Planning Promotion Trust and franchise managers from each district. MerryGold receives public funding. Because of this funding, a state governing society, which includes state public health officials, meets every month to review the operations and targets of the network.
# Appendix 1. Classification of Primary Care Organizations Researched

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>ORGANIZATIONS</th>
<th>PROFIT OR NOT FOR PROFIT</th>
<th>SECTOR</th>
<th>MODE OF FINANCING</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>MerryGold Health Network</td>
<td>NFP</td>
<td>U/R</td>
<td>Public private partnership</td>
</tr>
<tr>
<td></td>
<td>E Health Point</td>
<td>FP</td>
<td>Rural</td>
<td>Private</td>
</tr>
<tr>
<td>South</td>
<td>Karuna Trust</td>
<td>NFP</td>
<td>Rural</td>
<td>Public private partnership</td>
</tr>
<tr>
<td></td>
<td>Dr. NTR Vaidya Seva Scheme (Aarogyasri)</td>
<td>NFP</td>
<td>U/R</td>
<td>Public private partnership</td>
</tr>
<tr>
<td></td>
<td>SughaVazhvu</td>
<td>NFP</td>
<td>Rural</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>NationWide</td>
<td>FP</td>
<td>Urban</td>
<td>Private</td>
</tr>
<tr>
<td>East</td>
<td>Rural Health Care Foundation</td>
<td>NFP</td>
<td>Rural</td>
<td>Private</td>
</tr>
<tr>
<td>West</td>
<td>Healthspring</td>
<td>FP</td>
<td>Urban</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>MeraDoctor</td>
<td>FP</td>
<td>Urban</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Swasth India</td>
<td>FP</td>
<td>Urban</td>
<td>Private</td>
</tr>
<tr>
<td>Multiple States</td>
<td>Uplift Mutuals</td>
<td>NFP</td>
<td>Urban</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Health Management and Research Institute</td>
<td>NFP</td>
<td>U/R</td>
<td>Public private partnership</td>
</tr>
<tr>
<td></td>
<td>Mamidipudi Venkatrarangaiy Foundation</td>
<td>NFP</td>
<td>Rural</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Rashtriya Swasthya Bima Yojana Outpatient Pilot Program</td>
<td>NFP</td>
<td>U/R</td>
<td>Public private partnership</td>
</tr>
<tr>
<td></td>
<td>CARE Rural Health Mission</td>
<td>NFP</td>
<td>Rural</td>
<td>Private</td>
</tr>
</tbody>
</table>
## Appendix 2. Primary Research Selection Process

<table>
<thead>
<tr>
<th>#</th>
<th>ORGANIZATION</th>
<th>SERVICE DELIVERY</th>
<th>FINANCING</th>
<th>COMMUNITY ENGAGEMENT</th>
<th>GOVERNANCE</th>
<th>ASSESSMENT METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rural Health Care Foundation</td>
<td>An innovative services delivery method in resource constrained areas. Addresses the need of doctors in rural areas, provide ophthalmic, outpatient, dental, homeopath and Ayurveda under one roof.</td>
<td></td>
<td></td>
<td></td>
<td>Visit</td>
</tr>
<tr>
<td>2</td>
<td>Karuna Trust</td>
<td>Adopted the primary health centers.</td>
<td>Used the same budget that was allocated to them to show results.</td>
<td></td>
<td>Data backed monitoring of outcomes.</td>
<td>Visit</td>
</tr>
<tr>
<td>3</td>
<td>Dr. NTR Vaidya Seva Scheme</td>
<td>Runs on a robust information technology platform.</td>
<td></td>
<td></td>
<td>Governed by an autonomous government body with decentralization till the level of district, a very good feedback mechanism.</td>
<td>Visit</td>
</tr>
<tr>
<td>4</td>
<td>Health Management and</td>
<td>Runs on a robust information technology platform.</td>
<td>Community workers involved.</td>
<td></td>
<td>Has a well structured functioning.</td>
<td>Visit</td>
</tr>
<tr>
<td>No.</td>
<td>Institute</td>
<td>Description</td>
<td>Incentives based on performance.</td>
<td>Challenges Recognized</td>
<td>Visit</td>
<td></td>
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<td>--------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>5</td>
<td>MerryGold Health Network</td>
<td>Addressing the issue of maternal health in few of the poorer performing regions of the country</td>
<td>A unique social franchising model.</td>
<td>Recognizes challenge of doctor retention. Provides doctors compulsory training in family medicine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>NationWide</td>
<td>Revives the family health model.</td>
<td></td>
<td>Recognizes challenge of doctor retention. Provides doctors compulsory training in family medicine.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Healthspring</td>
<td>Revives the family medicine model. Provides state of art outpatient care, emergency services and doctor on call.</td>
<td>Protects patient confidentiality.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Sughavazhvu</td>
<td>A unique service delivery organization using AYUSH doctors to practice allopathic medicine.</td>
<td>Prepaid packages for noncommunicable diseases.</td>
<td>Seek and redress the feedback received from key opinion leaders. Biometric based database to ensure mapping of beneficiaries.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>9</strong> CARE Rural Health Mission</td>
<td>Provides preventive, promotive, primary, chronic, and emergency care to patients in rural areas.</td>
<td>Uses micro insurance for financing.</td>
<td></td>
<td>Visit</td>
<td></td>
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<tr>
<td>10</td>
<td>E Health Point</td>
<td>Integrates provision of water and telemedicine at a center called E Health Point.</td>
<td></td>
<td></td>
<td>Visit</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Rashtriya Swasthya Bima Yojana Outpatient Pilot Program</td>
<td>Delivers seamless care.</td>
<td>Cashless outpatient care in insurance mode, very few experiments in India in insurance for outpatient care.</td>
<td>Used folk plays, dances for awareness generation.</td>
<td>Uses the software and governance structure of the inpatient Rashtriya Swasthya Bima Yojana.</td>
<td>Call</td>
</tr>
<tr>
<td>12</td>
<td>Mamidipudi Venkatarangayya Foundation</td>
<td></td>
<td>They use educated community</td>
<td></td>
<td>Visit</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Uplift Mutuals</td>
<td>Offer a full range of administrative support to the health mutual funds. The product is structured as a reimbursement to members.</td>
<td>Reaches communities through microfinance institutions, camps and twenty four hour hotline numbers.</td>
<td>Provide technical support to health mutual for product design, staff training, back office administration, empanelment</td>
<td>Call</td>
<td></td>
</tr>
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<td></td>
</tr>
<tr>
<td>14</td>
<td><strong>Swasth India</strong></td>
<td>Provides outpatient, diagnostics, dental care and cheaper medicines in urban slums of Mumbai.</td>
<td>Run a school health program with community workers.</td>
<td>Visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td><strong>MeraDoctor</strong></td>
<td>A unique model providing teleconsultation, diagnostics and insurance to the covered families.</td>
<td></td>
<td>Visit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For 2, 12, visits were not made specifically for this initiative. Data are based on earlier visits by ACCESS Health team members to these organizations.
### Appendix 3. Comparison of Provider Payment Methods

<table>
<thead>
<tr>
<th>PAYMENT METHOD</th>
<th>POSSIBLE ADVANTAGES</th>
<th>POSSIBLE DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fee for service</td>
<td>Easy to understand and implement. Typically the method used by healthcare providers. Encourages provision of services, which can aid access to care for low income households. Generally well accepted by healthcare providers.</td>
<td>Drives up costs by providing a financial incentive to: Overuse services (in volume) Raise billed charges if these are the basis for calculating payments (increase unit costs). Places financial risk on insurance program, which may try to restrict claims by limiting covered services or rejecting claims. Can require unpopular interventions to reduce inappropriate claims.</td>
</tr>
<tr>
<td>Per case</td>
<td>Simplifies claims administration. Transfers financial risk for length of stay to providers. Encourages efficient care management (shorter length of stay).</td>
<td>Creates incentive to diagnose and bill for more complex (higher revenue) cases. Creates incentive to reduce length of stay and services that may be necessary. Creates incentive to make unnecessary admissions. Makes difficult to establish a fair cost per case for all patients (i.e., including outliers).</td>
</tr>
<tr>
<td>Per day</td>
<td>Simplifies claims administration. Serves as an entry product that insurers can enhance over time. Transfers financial risk for cost per day to providers. Encourages efficient care management (lower intensity of service per day).</td>
<td>Creates incentive to increase length of stay. Creates incentive to reduce services that may be necessary. Creates incentive to make unnecessary admissions.</td>
</tr>
<tr>
<td>Capitation</td>
<td>Simplifies claims administration (no claims necessary). Yields steady revenue stream (prepayment) for providers (cash flow advantage). Allows the transfer of financial risk to healthcare provider. Encourages providers to provide preventive care and encourages earlier and less costly treatment.</td>
<td>Providers generally unreceptive due to inability to manage financial risk of care. Difficult to price accurately without large enrolment due to high variation in cost to care for small numbers of patients. Creates incentive to reduce care. Creates incentive to exclude high risk groups (elderly, those with preexisting and chronic diseases). Encourages inappropriate referral to other providers for expensive cases. Can be difficult for insurer to obtain utilization (encounter) data to reconcile payments with actual experience.</td>
</tr>
</tbody>
</table>
Difficult to ensure that providers comply with service agreements with the client.

<table>
<thead>
<tr>
<th>Line item budgets</th>
<th>Provides administrative controls, if adequate monitoring systems in place, which is valued in government systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ties payments to inputs not outputs. Therefore, providers may not have the incentives or means to deliver appropriate care. Ties inputs to political preferences and resources, not to demand, need, or utilization. Does not foster competition and choice, since money does not follow the patient.</td>
</tr>
</tbody>
</table>

Sources: Le Roy and Holtz, 2012; Langenbrunner et al., 2009.
Study 1. CARE Rural Health Mission

The CARE Rural Health Mission is a not for profit organization funded by CARE Hospitals, an arm of the CARE Foundation. The CARE Mission specializes in telemedicine solutions to link rural health workers in Maharashtra and Andhra Pradesh with doctors at primary healthcare centers and hospitals. The CARE Rural Health Mission was founded in 2008 with a vision “to enable healthcare for the people in rural India by enabling affordable healthcare at their doorsteps.” The CARE Mission proposes a four pillar model to address key challenges in expanding access to rural healthcare: a) capacity building of health workers, b) technology solutions, c) supply chain management, and d) microinsurance program.

Current Projects

The CARE Rural Health Mission started the CARE Arogya Kendra program in Yavatmal, Maharashtra in 2008. The program reaches approximately twenty thousand patients each year, in over fifty villages. The CARE Mission began its program in Andhra Pradesh in 2009 by taking over the Byrraju Foundation. This program covers two hundred villages in six coastal districts, reaching three hundred thousand people each year. Only a fraction of the population is enrolled in the insurance program (1,400 families or five thousand individuals). Enrollees pay an annual premium of three hundred rupees. Enrollees can access consultations, lab tests, and drugs. Both programs use a technology based outreach model through which community health centers are linked to primary healthcare centers and hospitals. This network of facilities provides preventive, promotive, primary, chronic, and emergency care to patients. Community workers are trained as "Village Health Champions." The Champions consult with patients and treat basic illnesses. The Champions are equipped with handheld mobile devices that enable doctors to remotely attend to patients. This system reduces the need for patients to travel and therefore lose wages. In 2011, the CARE Rural Health Mission also launched a two hundred bed multispecialty hospital in Andhra Pradesh, in partnership with Grandhi Mallikarjuna Rao. The CARE Mission focuses on providing the hospital with inputs in governance and leadership.

The CARE Rural Health Mission faces several challenges in its work. One challenge is the need to raise awareness in the community about the importance of establishing a health center and accepting Village Health Champions into their homes. It takes a few months to accomplish these tasks. The CARE Mission must
also find the right people in the community to recruit and train as Village Health Champions. Another challenge is the need to cover the high costs of using technology and to overcome limited acceptance of this technology in the community. The CARE Mission must also balance the affordability of services with sustainability.

**Key Takeaways**

The CARE Rural Health Mission places importance on making medical services accessible to the people through outreach by Village Health Champions rather than expecting people to visit clinics. The Village Health Champions address basic health needs. They can deliver drugs and take blood tests, among many other tasks. The use of Village Health Champions reduces the need for clinic visits.

The model used by the CARE Mission is noteworthy because it ensures access to a doctor around the clock.

The CARE Mission is facing the challenge of low acceptance of technology by members of the community, many of whom are wary of engaging in remote teleconsultations.
Study 2. SughaVazhvu

SughaVazhvu (“Happy Life” in Tamil) is a social enterprise located in Tanjavur district in Tamil Nadu. SughaVazhvu was founded by Nachiket Mor and Dr. Zeena Johar. Mor and Johar developed their model after extensive field research. After six years in the testing and iteration phase, the SughaVazhvu model now comprises a chain of seven rural micro health centers. Each center covers a population of eight to ten thousand people. Each center provides consultation, a set of outpatient services, drugs, and basic diagnostics at below market prices. SughaVazhvu recovers part of its costs through user fees. SughaVazhvu covers the rest of the costs through grants from its parent organization, the IKP Centre for Technologies in Public Health. Sughavazhvu has had fifty thousand footfalls since it began. The enterprise has grown steadily over years. Mor and Johar believe that they are now ready to scale, either through investments, public private partnerships, or partnerships that focus on select aspects of their model.

Key Takeaways

Human Resources

Each rural micro health center has a doctor and a health extension worker. The staff is supported by a central team of experts. SughaVazhvu hires Ayurveda and Siddha providers. These providers must complete an intensive three month bridge training course focused mainly on disease pathology, allopathic pharmacology, and soft skills. This course is complemented by standardized protocols, well defined processes, and supportive supervision. This framework of training and management processes allows Indian Systems of Medicine doctors to practice allopathic medicine. These doctors are more available in rural areas. The ability of SughaVazhvu to hire and train Indian Systems of Medicine doctors increases significantly the number of available providers in rural areas.

Infrastructure Geared Toward Proactive Care

Most primary healthcare in India is reactive. Proactive care requires the provider to go to the community, find people that need attention or may be at risk, and work with them on secondary prevention. SughaVazhvu engages the community. The enterprise tries to shift the thinking from reactive to proactive care (map, screen, create database, treat, follow up). SughaVazhvu offers annual packages to help families manage noncommunicable diseases. SughaVazhvu also offers three month packages to manage anemia among schoolchildren.
**Extensive Use of Technology**

Information and communications technology is used to map the covered population, to plan, to measure process adherence, to provide clinical decision support, to manage clinical logistics (including drugs and laboratory reports), to capture patient information, to audit, to train, and to manage performance. Technology is integrated seamlessly into the SughaVazhu workflow to achieve efficiency and effectiveness.

“There are human resource and technology innovations alone. Nobody brings them together and demonstrates systems on the ground to deliver primary healthcare. We have been trying to do that.” - Dr. Zeena Johar

**Development of Model Tools and Protocols**

Strategies developed by SughaVazhu can be used by primary care providers:

- Bridge course for AYUSH doctors
- Use of protocols – eighty plus
- Enrollment and community engagement processes
- Medical audit method
- Use of technology for planning, execution, monitoring, and rewarding
- Design of the noncommunicable diseases package
- Dashboard for “community level outcomes”
Study 3. Healthspring

Healthspring is a network of primary healthcare centers and emergency care providers. The initiative was started in 2010 to provide good quality primary care in urban settings. The founders, Dr. Gautum Sen and Kaushik Sen, understood that lack of quality primary healthcare leads to a vicious cycle of out of pocket expenditure and subsequent financial distress. Healthspring primary healthcare centers are located across seven areas in Mumbai and have ninety thousand registered patients. The target population is middle and upper middle class families. Patients must enroll to use Healthspring services. Healthspring also operates a few onsite centers in corporate offices and housing societies. The network includes seven primary care centers. Collectively, the centers are staffed with thirty five full time doctors and forty part time doctors. The network also includes fifty five emergency hospitals. These hospitals are available twenty four hours a day, seven days a week, across fourteen zones of Mumbai. Healthspring also operates a fleet of ambulances.

The Healthspring model uses telehealth for consultation and for referral. Doctors conduct triage by telephone. During telephone triage, doctors determine whether a case can be handled at home, requires a visit to a doctor, or requires an immediate visit to an emergency room. In the case of a referral, the patient receives a five to ten percent discount from a specialist in the Healthspring network. In case of an emergency, the network hospitals are called to ensure the availability of a bed. To save time, the patient’s medical history and three preferences for hospitals are stored in a database. Physicians also provide emergency care home visits.

Ensuring the quality of medical care is of utmost importance to Healthspring. The founders believe that cost reduction and volume generation compromise quality. No financial incentive is given based on referral or volume generation. The Sens believe that their doctors are paid well, unlike doctors at many primary care centers. Healthspring places a heavy focus on consumer feedback, consumer convenience, and the provision of good services to the patients.

Key Takeaways

Healthspring has an efficient referral system, backed by a sound technological platform. The primary healthcare centers are state of the art and are staffed with experienced doctors. The use of a database to store and share patient details saves time and improves the accuracy of treatment.
Because it provides high quality primary care, Healthspring is able to treat about ninety to ninety five percent of patients at the primary care level without the need for referral to a specialist.

Dr. Sen remarked, “good primary care at a reasonable cost prevents a myriad of complications that occur due to the misuse and abuse of drugs at the primary care level, which in turn pauperizes the patients when they are referred for costly tertiary care.”
Study 4. MeraDoctor

Dr. Ajay Nair and Gautum Yevuturi established MeraDoctor (*my doctor*) as a consultation platform for those seeking healthcare. Families purchase a MeraDoctor health plan with a one time annual fee of three thousand rupees. This fee entitles patients to four benefits: 1) unlimited advice from a doctor over the phone, 2) discounts at empanelled network providers for drugs, diagnoses, and hospital care. This discount is possible because MeraDoctor forgoes its commission, which could range from ten to sixty percent, passing savings on to patients, 3) a hospital cash product of five hundred rupees per day, up to a maximum of ninety thousand rupees, and 4) personal accident coverage worth up to three hundred thousand rupees.

MeraDoctor conducts marketing through door to door campaigns, group discussions, and use of press and social media. Initially, Nair and Yevuturi tried to sell the product through retail channels but realized that the promotion of a health product requires personal interaction. They also learned that it was necessary to bundle the consultation service with other benefits. To date, thirteen thousand people have enrolled in Uttar Pradesh, Uttarakhand, the National Capital Region, and Mumbai. Most enrollees are middle or upper class men from urban areas. Clients may enroll at any of the 1,700 MeraDoctor outlets. To date, MeraDoctor has given over fifteen thousand teleconsultations and recorded 13,500 follow up visits.

During teleconsultations, the doctors create an electronic medical history, make a provisional diagnosis, and prescribe over the counter drugs. Prescriptions are sent via text message. Rhea Batliboi, Vice President of Operations, noted, “It is easier to train younger doctors because they seem to be more tech savvy. Older doctors often struggle to do both things simultaneously.” The calls are checked for quality of clinical care, communication, and relationship establishment. Salary and growth within the company are based on these criteria. The operation managers constantly monitor calls to ensure that patients do not have to wait for a long time.

*Key Takeaways*

MeraDoctor has developed effective protocols that are customized for teleconsultations. MeraDoctor conducts routine training of doctors and strict monitoring of quality.
By providing teleconsultations, MeraDoctor has avoided the issue of long wait times, an achievement particularly relevant in busy urban settings.

Many consultations are made to seek a second opinion related to another doctor’s diagnosis or treatment plan. Doctors also provide counseling sexual issues, psychiatric issues, and even simpler issues, such as how to understand a drug dosage. Patients who are embarrassed to discuss sensitive topics face to face or do not know whom to consult seem to value the privacy and anonymity of teleconsultation services.

Batliboi outlined goals for the future: “We would like to have our own clinics, on site consultation, beds at clinics, and to employ nurses. We also aim to increase our volume of patients and develop an e-learning module for training.”

Teleconsultation is a new concept in India. While the newness of the concept poses challenges to scale up, MeraDoctor would like to retain and develop it as its niche.
Study 5. Rashtriya Swasthya Bima Yojana Outpatient Pilot Program

The Ministry of Labor and Employment introduced Rashtriya Swasthya Bima Yojana (RSBY) in 2008. The program provides cashless inpatient treatment to the unorganized sector and the below the poverty line population. Until now, RSBY has not provided outpatient care. In the absence of outpatient care, many patients either incurred high outpatient expenditures or their illnesses culminated in hospitalization. In 2011, RSBY launched an outpatient pilot program in the Puri district of Odisha and the Mehsana district of Gujarat.

Outpatient services include free consultations and drugs for ten doctor visits, with follow up available for one week at no additional cost. The coverage was offered to all households enrolled in RSBY in these districts. A total of 401,048 individuals in Puri and 275,487 individuals in Mehsana enrolled in the outpatient pilot. As part of the pilot program, seventy government and thirty four private providers were empanelled in Mehsana. Thirteen government and twenty nine private providers were empanelled in Puri (ICICI Foundation, 2013). The team that implemented the pilot program visited the healthcare providers on a regular basis to scrutinize service delivery and usage. The team took corrective actions as needed. An early challenge for the outpatient program was to ensure a continuous supply of drugs to providers in the face of high patient volume. To address this challenge, the program made Janaushadhi drugs (quality generic drugs) available at a discounter price at stores attached to public facilities. Another issue was the absence of internet connectivity and the associated difficulty with transaction uploads. The program responded with a provision to upload transactions offline on an initial basis. The outpatient pilot program team incorporated a software package for the outpatient product into the existing RSBY platform and trained providers how to use it.

The early months of the pilot program saw low usage. The program expanded its education campaigns using dance, folk, and art forms. The program has also educated providers about the benefits of the outpatient services. Preliminary results indicate that outpatient care led to a decrease in the average inpatient claim size by fifteen percent (ICICI Foundation, 2013).

After the pilot program, Nishant Jain from GIZ noted, “Now the government is talking more holistically about healthcare, primary care, and prevention.” This pilot program should be designed and tested in other states, with attention placed
on quality of care and strength of the referral system. He also acknowledged low usage.

**Key Takeaways**

Effective linkages with other government programs, including Janaushudhi, and engagement with Rogi Kalyan Samitis, hospital trustees comprised of local panchayat and community members.

Successful use of technology in some of the most remote areas of the country. The pilot program customized technology tools for local needs and provided adequate training for the staff.

Use of interactive channels to build awareness, including folk dance and art.
Study 6. NationWide

Dr. Santanu Chattopadhyay and Dr. Shantanu Rahman founded NationWide in April 2010. The founders’ vision was to become the “most trusted and respected primary healthcare provider in India.” NationWide is working on the concept of “bringing back the Family Doctor.” This concept aims to revive the age old family doctor model. The primary care clinics in the chain focus on bridging the gap between fragmented general practitioner services and highly expensive, super specialist hospital care. To achieve this, NationWide created a single point of medical care for patients’ everyday healthcare needs.

NationWide is organized as a hub and spoke model. NationWide operates out of a two hundred to four hundred square foot main clinic, with smaller satellite clinics within a defined radius. Currently, NationWide operates nine main clinics and fourteen satellite clinics in Bangalore. The organization is funded by venture capitalists. The treatment guidelines used by NationWide focus on proactive management of everyday ailments as well as chronic disease management for noncommunicable diseases such as diabetes, hypertension, and asthma.

The NationWide model has emerged from close observation of patients’ priority outpatient and primary care needs and the limitations of the current options available. NationWide has created a financially viable model that is cost effective for the beneficiary. The model caters to an urban population that can pay at least one hundred rupees per doctor visit. NationWide offers subscription plans to its clients, based on their demographics. These plans range in cost from nine thousand to twenty four thousand rupees per year for a family, with an additional joining fee. Dr. Chattopadhyay explains, the “consumer is the king. We have to align our services according to their requirements.”

**Key Takeaways**

The incentive structures for the doctors are designed to ensure compliance with clinical and nonclinical protocols and to prevent unnecessary diagnostics and drugs.

NationWide pays its doctors a fixed base salary that is above the market norm. The company also pays a bonus. The bonus is tied to customer satisfaction and adherence to clinical guidelines.

The recruitment, training, and retention strategies adopted at NationWide add value to the company. Mandatory three hundred hours of training each year
ensure that the doctors at NationWide remain current on the latest advances in medicine. The career path laid out by NationWide offers a path to its doctors that is similar to those in the corporate world. Doctors can become partners in the organization.

NationWide plans to expand to all cities in India where people can afford its services. In the long term, the aim of the company is to build on the brand name. The company founders hope to use brand recognition to contract out clinics through social franchising. According to Dr. Chattopadhyay, contracting out providers with strict quality measures is real scalability. “How can [NationWide] be in every district?”
Study 7. Rural Health Care Foundation

The Rural Health Care Foundation was founded in 2007, by brothers Arun and Anant Nevatia. The Nevatias both came from a business background. The Nevatias saw a need and an opportunity to set up primary healthcare facilities in remote villages of India where these services were unavailable. The foundation has eight centers in rural villages of West Bengal. Few government facilities operate in this area. The foundation has served over eight hundred thousand patients to date. The foundation uses a high volume, low cost operating model.

The services at each center are restricted to outpatient care. Diagnostic services are available through outsourced facilities. Each center has four outpatient departments: general medicine, eye care, dental care, and AYUSH. The centers are open six days a week. The patients are charged fifty rupees as a registration fee that includes consultation with a qualified doctor and seven days of medication. More than 160 types of medicine are available at each of these centers, at prices that are discounted by pharmaceutical companies. The Rural Health Care Foundation has collaborated with Rotary Eye Hospitals and the Smile Train Foundation to provide free cataract and cleft lip or palate surgery at no charge. Wheelchairs, blankets, and artificial limbs are distributed to needy patients, in collaboration with different nongovernmental organizations. Eyeglasses are also provided at subsidized rates.

Each center costs approximately six hundred thousand rupees to establish and an average of 150,000 rupees per month to operate. Funding is obtained through philanthropic donations from family and business friends. The foundation must serve five thousand patients per month to break even and cover operating costs. The foundation has also collaborated with Giveindia.org, a website where interested individuals and organizations can make voluntary donations.

Key Takeaways

*Provision of Affordable Medical Care*

The foundation charges fifty rupees for a visit with a qualified allopathic doctor and one week of medicines. For those who cannot afford this, the foundation offers a waiver of ten rupees for every hour a patient waits.
Access to a Range of Doctors
Certified doctors in four specializations (allopathic, dental, optometry, and homeopathy) are available six days a week. The foundation stocks more than 160 types of generic medicine.

Effective Human Resource Management
Doctors and staff receive a performance based payment. They are also provided boarding and lodging at the center, which helps create an incentive to relocate to rural areas.

Anant, one of the founders, remarked that, “people are ready to pay for quality health services in rural India. This year, rural Indian spending has overtaken the urban Indian spending [for the] first [time] ever in independent India.” He believes that if the government partners with the Rural Health Care Foundation to provide infrastructure, the foundation can further subsidize their prices to offer affordable quality medical care to those most in need.
Study 8. Swasth India

Ankur Pegu and Sundeep Kapila founded Swasth India in 2008. The founders spent the first few years conducting active research with other providers and nongovernmental organizations in urban and rural areas of Maharashtra, Haryana, and Delhi. In June 2011, the founders designed the Swasth India model based on the previous three years of research experience.

The Swasth India network operates in the urban slums of Mumbai. Pegu and Kapila believe that residents of the urban slums are a vulnerable group of individuals who are deprived of access to proper primary healthcare. The government facilities that are present in the area are overburdened and overcrowded. Due to the long waiting times at public hospitals, patients undergo distress, may not seek treatment, or resort to visiting an informal provider in the area.

Swasth India has eight health centers across Mumbai and 36,430 families registered. Swasth provides five “Ds” of care under one roof: doctors, drugs, diagnostics, day care, and more recently, dental treatment in a few centers. The health centers carry out prevention and promotion activities through community and school outreach programs. The health centers are able to offer services at an estimated forty percent price reduction to clients. Swasth is able to achieve this price reduction due to several factors: Swasth bypasses intermediaries and obtains drugs directly from some of the largest drug manufacturing companies. Swasth prescribes drugs with the least expensive salt variation. These factors reduce drug costs while maintaining quality. Swasth doctors make referrals without commissions (which is the practice). This commission is passed on as discount to the patient. Drugs and diagnostics are among the major causes of out of pocket expenditure. By keeping associated costs low, Swasth is able to ensure significant price reductions to patients.

This model works on a fee for service basis. Each family has a unique identification number (e.g. a mobile number) that is stored in the Swasth database, along with all the details from the family. This information can be used at any of the eight centers. The Swasth family card, which helps pull the online history for the family, is free of cost. Since treatment is not free of cost, Swasth has grown since its inception. The company reports that it is financially sustainable. Five out of its eight centers have positive cash inflow.
**Key Takeaways**

Swasth India makes efficient use of technology that integrates all the activities performed under the network. The standard protocols are embedded in the system, which makes it easy and user friendly for employees. Every aspect of referral, stock management, reports, and patient history are digitized.

All clinics are located in the community. Staff is recruited from within or from adjoining neighborhoods. Local recruitment makes it easier for the center to become operational in a timely manner. Local recruitment also creates a sense of accountability to the community.

Swasth India plans to expand its footprint in Mumbai and open sixty to eighty centers by 2017. To match this growth, the company also plans to increase its number of drug warehouses, currently at two, and pathology labs.
Study 9. E Health Point

E Health Point is a for profit company launched in 2009, with centers across Punjab. E Health Points are outpatient clinics owned and operated by HealthPoint Services India. The company vision is “to be a leader in transforming primary, curative, and preventive healthcare globally by demonstrating a sustainable service model to both public health authorities and capital markets.” Each E Health Point unit provides families in rural areas with clean drinking water, drugs, diagnostic tools, and telemedicine services. Typically, an E Health Point location starts out as a water service. The location then expands to a clinic as it becomes established. Currently, the company operates eight health points and 160 water points in Punjab.

E Health Point follows a hub and spoke model. The E Health Point units themselves are the hubs. Village health workers are the spokes. Information technology is a core part of the company. Technology is used in three ways: The patient engages with doctors through video based telemedicine conversations. Health coordinators, recruited by E Health Point, carry handheld tablets and phones to access advice from doctors in real time. The company employs advanced diagnostic tools that are online, as well as electronic patient records. The mobile diagnostics offer mother and child services and diabetes and hypertension screening. With the help of electronic medical records, E Health Point has the capacity to profile the community. This capacity allows the company to offer real time disease surveillance and alert local and state health officials to new outbreaks.

At present, E Health Point has conducted more than forty thousand consultations and twenty thousand diagnostic tests. The company has sold thirty five thousand prescriptions and administered three thousand vaccinations. Beyond health services, two hundred thousand people use E Health Point to access clean drinking water. Clients pay a monthly subscription of eighty rupees per family and receive twenty liters per day.

E Health Point faces several challenges. The company must train and retain employees. The company must also change the negative perception of telemedicine in the community. Poor internet connectivity and competition from local healers also pose challenges. The model has low financial returns. E Health Point is not attractive to traditional venture capitalists, nor is the company able to receive financial support from the government.
**Key Takeaways**

The company is able to cross subsidize its health services effectively with revenue from the water points. The company is not able to manage a financially viable, stand alone health service model.

E Health Point has learned that it is essential for the doctor to be present at the telemedicine center for at least one or two days in the week to provide face to face interaction with the community. The company has found that follow ups may be conducted by phone.

E Health Point Services intends to act as a catalyst. The company will offer consultation services to other organizations that would like to bring a similar community focus to health, water, wellness, and lifestyle as a whole. The company is looking to expand services to other parts of India and abroad.
Study 10. Karuna Trust

Karuna Trust is a nonprofit organization that partners with state governments in India to provide primary care services in rural and remote areas. The Trust was founded by Dr. H. Sudarshan, a doctor, professor, and social activist working in healthcare, education, and livelihoods. The work of the Trust initially focused on responding to and reducing the high prevalence of leprosy in Yelandur Taluk of Chamrajnagar district in Karnataka. Eventually, the model extended to include provision of primary and secondary healthcare services.

Karuna Trust enters contracts with governments to take over their nonfunctional primary healthcare centers. The Trust receives the same infrastructure, resources, and personnel that the government would typically provide. Karuna Trust currently runs seventy three primary healthcare centers across nine states in India.

The success of Karuna Trust enabled the government to issue a formal policy on public private partnerships in healthcare in the year 2000. According to the policy, the nonfunctional and low performing primary care centers in Karnataka are to be handed over to the management of Karuna Trust. Under this agreement, Karuna Trust manages each primary healthcare center and the subcenters under its jurisdiction. The centers provide various curative, preventive, and promotive services at no cost to the community. The government bears the costs of personnel, drugs, medicines, reagents, surgical material, healthcare consumables, administrative charges, civil works, furniture, and equipment.

Key Takeaways

Beyond the core mandated primary healthcare center services, Karuna Trust offers a wide range of additional services and products, such as mental health, dental care, management of communicable diseases, emergency tool kits, and eye care.

The Trust plays an important role in facilitating learning across primary healthcare centers managed by the state and those managed by the Trust. The Trust manages one center in each district of Karnataka. This center acts as the model center from which best practices are replicated through training.

As one of their innovative projects, Karuna Trust has integrated mental health into primary healthcare in twenty seven primary healthcare centers across Karnataka.
The governing structures of Karuna Trust are robust and ensure accountability and regulatory oversight. These structures include the primary healthcare center monitoring committee and the steering committee. Both committees meet routinely to monitor performance and address grievances. The committees comprise members from Karuna Trust, government, and civil society. This diversity ensures a wide perspective on the performance of the public private partnership.

Karuna Trust has received funds from the MacArthur Foundation to improve management and cross learning among primary healthcare centers. The grant work focuses on integrating reproductive and child health, HIV/AIDS, and information dissemination and counseling services into these centers.
Study 10. The MerryGold Health Network

The MerryGold Health Network is an innovative social franchise in Uttar Pradesh. MerryGold focuses on maternal and child health. MerryGold was funded by USAID in 2007. The network is managed by Innovations in Family Planning Services Agency and implemented by the Hindustan Latex Family Planning Promotion Trust. The Innovations in Family Planning Services Agency Technical Assistance Project provides technical assistance.

The MerryGold Health Network is a three-tiered hub and spoke model. The first tier is called MerryGold. The first tier operates at the district level. The first tier consists of full franchise facilities that offer obstetric care, caesarean sections, and normal deliveries. The second tier is called MerrySilver. MerrySilver operates at the subdivision and block level. MerrySilver comprises fractional franchise facilities that offer basic obstetric care, counseling, insertion of intrauterine devices, and distribution of contraceptives. The third tier is named MerryTarang. The third tier functions as a referral network in the community. MerryTarang provides outreach, health camps, and counseling. The Uttar Pradesh network has nineteen MerryGold hospitals, ninety-six MerrySilver clinics, and 1,859 MerryTarang partners.

Some of the key features of the model include a focus on low cost and high volume operations. Prices are thirty to forty percent below market. MerryGold Health Network generates revenue through user fees. The network offers a full range of maternity and child health services. The network maintains linkages with diagnostic centers, pharmacies, health insurance, health management information systems, and financial service providers. The network has also faced challenges in its operations. These challenges include an expectation from development partners and government to show results within a short time frame. The establishment of brand equity requires a long gestation period. Another challenge includes difficulty linking with government programs. The MerryGold Health Network has also had difficulty establishing referral linkages and recruiting franchisees in remote areas.

Key Takeaways

Empaneled hospitals provide services at thirty to forty percent below market. The hospitals serve a large segment of the population that has only minimal ability to pay. Providers commonly see eighteen to twenty-five percent more clients after joining the network. This increased volume enables them to reduce prices.
Franchising has allowed for the rapid expansion of the model, through uniform branding, high public visibility, and quality control. The increase in footfalls for providers has supported the financial sustainability of the model.

The network has achieved strong community engagement through MerryTarang members. These members are community workers who are given health and enterprise training to provide basic medical services. MerryTarang members create strong linkages between the communities and providers. MerryTarang members facilitate interactions every month. These members also conduct “Godh Bharai” or baby shower ceremonies to connect with communities and build awareness on health issues.

After the success of MerryGold Health Network in Uttar Pradesh, the Hindustan Latex Family Planning Promotion Trust replicated the model in the state of Rajasthan under the Merck for Mothers initiative. The model is financially stable. The model has high potential for scalability in low resource settings where public maternal healthcare delivery systems are unable to deliver high quality services in remote areas, twenty four hours a day, seven days a week.
Study 12. Uplift Mutuals

Uplift Mutuals is a program of the Uplift India Association. The program was established in 2004 as a platform to promote mutually owned health protection funds for low income communities. Uplift primarily reaches communities through microfinance institutions. Uplift currently provides health protection to two hundred thousand people through six microfinance institutions in Maharashtra and Rajasthan.

By paying an annual premium of around one hundred rupees per person, each enrolled member is entitled to hospitalization coverage of up to thirty thousand rupees. Enrollees are also entitled to a range of preventive health services: a twenty four hour hotline to consult doctors, monthly health talks, and camps to avail free checkups. Uplift Mutuals manages the delivery of these core health services. Uplift also offers a full range of administrative support to the health mutual funds. This support includes product design, staff training, back office administration, empanelment of hospitals, and monitoring. The product is structured as a reimbursement to members. Patients who are hospitalized are required to pay out of pocket. These patients are subsequently reimbursed by Uplift. According to Uplift management, this design choice prevents providers from inflating bills and maintains program efficiency. The health mutuals are managed and underwritten by communities. The communities are responsible for validating products, approving claims, and allocating funds. Each group determines the exact scope of benefits for its members. Some groups have chosen to include a travel reimbursement in exchange for a slightly higher premium amount.

Key Takeaways

Uplift distinguishes itself from many other insurance programs by placing a strong emphasis on primary healthcare. Uplift does not yet bundle outpatient care as an underwritten health product, but the program does prioritize health prevention and consultations as key features in its coverage. Claims costs are low by industry standards. These low costs can be attributed, at least in part, to the strong health prevention efforts of Uplift (Koven et al., 2013).

The approach of Uplift to community engagement also sets the program apart. In forming health mutuals, Uplift builds the capacity of communities to manage their own risk. This approach supports the improvement of health seeking behavior in the community.
Uplift has maintained steady but cautious growth over the last ten years. Uplift only works with microfinance institutions that are aligned in their social orientation and that actively support health prevention activities. According to executive director Shailabh Kumar, Uplift has chosen quality over scale: “People will not pay until they trust what you are doing. And trust does not come until you deliver quality care.”

In the near future, Uplift is creating a primary care intensive model in the suburbs of Pune. Uplift plans to establish a network of clinics that will serve as the foundation for a broader health mutual platform. Through this platform, Uplift will also underwrite the provision of outpatient primary care.

**Study 13. Health Management and Research Institute**

The Health Management and Research Institute is a nonprofit organization launched in 2007. The Institute works to make healthcare accessible, affordable, and available to all segments of the population. To achieve this goal, the Institute uses cutting edge information technology to reduce costs and improve service quality. The Institute is involved in numerous public private partnerships that scale its solutions throughout India and beyond. Below are the core activities that the Institute leads:

The Health Management and Research Institute manages **health information helplines**. The helplines are staffed with trained paramedics, counselors, and doctors. The helplines and equipped with the algorithm developed by the Institute as well as disease summary software. The helplines provide medically validated advice, counseling services, directory information, and a platform through which callers can lodge complaints about health providers. The helplines have served more than sixty five million callers to date.

The Institute also manages **mobile medical units** that provide remote communities with access to maternal and child healthcare. Each vehicle that conducts community outreach is equipped with a laptop or tablet, biometric scanner, and webcam. The van is supported by auxiliary nurse midwives, accredited social health activists, and *anganwadi* workers (nutrition workers) in the community. The mobile units are also supported by local panchayat institutions and leaders. Through the mobile medical units, the Institute has served over twenty five million people to date.
The Institute also offers a variety of telemedicine services to bring specialist healthcare to remote areas. In 2010, the Institute partnered with the MacArthur Foundation to launch an initiative to decrease maternal mortality. The Institute trained traditional birth attendants and accredited social health activists. To support these workers, the Institute designed Dox-in-Box, a device that is integrated with Institute software that captures, stores, and transmits eight vital signs from the community worker to the hub. The Institute also manages eSwasthya, a microfranchise model in which trained health workers consult with patients and connect to doctors and paramedics via mobile phones.

The Institute has engaged in state led initiatives in Andhra Pradesh. The Institute also manages two large scale partnerships in Assam. One challenge the Institute faces is raising funds for its telemedicine program. The Institute has also had difficulty increasing its cost effectiveness in delivery, recruitment, and motivation of health personnel. Poor internet connectivity is a challenge in rural areas.

**Key Takeaways**

The Institute offers integrative technology platforms for data collection and management, combined with service delivery through mobile vans and telemedicine. Continuous feedback between both functions enables the Institute to improve healthcare access and quality and emergency response.

The Institute offers important tools for governance and accountability, through patient complaint helplines, electronic medical records, and data management. These tools are especially relevant in large scale partnerships that require robust back end support.

The Health Management and Research Institute is presently active in Andhra Pradesh, Assam, Karnataka, Maharashtra, and Odisha. The Institute reaches 250 million lives in some way and has aspirations to extent this reach further.
Study 14. Dr. NTR Vaidya Seva Scheme

The government of Andhra Pradesh launched the Rajiv Aarogyasri Scheme in 2007. The program, which has since been renamed the Dr. NTR Vaidya Seva Scheme, provides financial protection of up to two hundred thousand rupees for families living below the poverty line. The program primarily covers tertiary medical treatment. The program provides coverage for over 940 treatments, including surgeries for cancers and heart and neurological diseases. The program also provides preventive, promotive, and rehabilitative care, some of which is offered through health camps. The program has a vast network of 470 public and private providers. Dr. NTR Vaidya Seva reaches nearly seventy million beneficiaries, around eighty six percent of the population. The program aims to achieve universal coverage. The program has strong governance and community accountability structures, which we will highlight in this case study.

The Dr. NTR Vaidya Seva Scheme created an autonomous governing body, the Dr. NTR Vaidya Seva Trust. The Trust is led by a board of trustees. This board includes the principal secretaries of all relevant departments, such as finance, health medical education, and rural development. The chief minister of the state is the chairman of the Trust. This relationship is critical to ensuring high political visibility. An officer from the Indian Administrative Service manages the Trust. At each district, the program appoints a medical officer to work closely with the panchayat, political heads, and other interest groups. This arrangement is important to decentralizing decision making.

Key features of the program have advanced its governance. These features include a transparent hospital empanelment process, a clear preauthorization and audit structure, and a community interface. Provider empanelment applications are initiated online. The online application is followed with an inspection from a team of doctors. Accepted hospitals participate in training on information technology prior to receiving accreditation. The preauthorization process is also managed online. The process is managed through a platform that integrates all patient information, including medical histories and lab reports. Preauthorization requests are verified online and typically approved within twelve hours. Dr. NTR Vaidya Seva also has an active medical audit department that controls fraud, monitors quality, and disempanels hospitals, when needed. On the community interface, the community offers a telephone helpline for beneficiaries to voice grievances and access health information. Data from the call center is not integrated with patient records. The program also has
Aarogyamithras appointed to every primary healthcare center. The Aarogyamithras inform beneficiaries about their rights and help them to navigate the system.

**Key Takeaways**

With strong management information systems, the Dr. NTR Vaidya Seva Trust has been able to monitor usage patterns in communities and make course corrections. The Trust made targeted efforts to reach tribal communities after observing their underrepresentation in the program.

The Trust has led a number of institutional changes since 2007. These changes are aimed at increasing efficiencies and reducing costs. One such change shifted implementation responsibility in house, from the insurance company. While the impact is yet to be proven, the program has developed internal capacity to take on these management functions. The Trust has been able to make decisions based on robust data.
Study 15. Mamidipudi Venkatarangaiya Foundation

The Mamidipudi Venkatarangaiya Foundation was established in Hyderabad in 1981 as a family owned not for profit with a focus on social transformation and related research. The organization has a formidable reputation. The founder received a Ramon Magsaysay Award in recognition of the involvement of the foundation with communities across states to bring over half a million child laborers back to school. The foundation has applied the same principles to improve maternal and child health. The foundation has a presence in over fifteen states.

Community Engagement at the Mamidipudi Venkatarangaiya Foundation

The foundation uses advocacy, corrective action, and focused communication in its work with low income, rural households to improve maternal and child health. The organization does not undertake any activity without involving the community, whether the activity is related to health education or clinical care provision. The foundation uses democratic, consultative processes to bring the discourse on healthcare to the community. The foundation achieves this through the use of the following processes:

- Communicating for improved health seeking behaviors.
- Collecting data parallel to the public system to identify inadequacies and gaps.
- Creating and working through community based structures and citizens groups to create pressure on the public system to deliver care.
- Resolving tensions created from the public system through dialogue with providers and enablers, such as Panchayat Raj Institutions. The foundation does not sensationalize the challenges.
- Identifying and addressing other healthcare seeking patterns that may lead to adverse outcomes (e.g. averting abortion services by informal providers at advanced stages).
- Working with a wide range of community members and other interested actors to garner support and to facilitate action.
The foundation is perceived as an advocate. The foundation is known for interpreting relevant statutes and laws to demand healthcare as a right and for promoting this right among communities. Foundation interventions are positioned as advocacy and public systems strengthening initiatives. The Foundation promotes messages through word of mouth, engagement with community groups, targeted communication, and capacity building of local public service organizations. Volunteerism, consensus building, local ownership, and universal coverage are cornerstones of the approach. The impact of the foundation at the local and state government level has steadily grown. The foundation engages families, panchayat and mandal officials, caste leaders, local religious leaders, employers, landlords, police officers, and district officials. The foundation worked in Andhra Pradesh across 252 gram panchayats, covering a population of over half a million. The maternal mortality rate declined from one per thousand to about 0.5 per thousand. The infant mortality rate declined from 120 per thousand live births to forty five per thousand live births. This change occurred in less than two years (2004 to 2006).

**Key Takeaways**

The foundation takes a rights based approach to working with the community. The foundation uses democratic process and peaceful means to identify and address problems. The foundation has proven that these approaches can create strong, lasting behavioral and population health changes.
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