

# Business models for primary health care delivery in low and middle income countries: a scoping study of nine social entrepreneurs

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## Research article

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# Abstract

## Background

Social entrepreneurship can help increase access to primary health care in low resource settings. Research on social enterprises in health have focused either on developing countries, or on secondary and tertiary care in low and middle income countries, where common business models include differential pricing to cross-subsidize low income populations. This is the first study to examine social enterprises providing primary health care in low and middle income countries using primary data. The purpose is to determine whether social enterprise is a viable model in this setting and to identify common patterns and characteristics that could inform the work of social entrepreneurs, funders, and researchers in this area.

## Methods

We identify social entrepreneurs working to deliver primary care in low- and middle-income countries who have been vetted by international organizations dedicated to supporting social entrepreneurs. Through in-depth interviews, we collect information on medical processes, business processes, social impact and organizational impact according to the Battacharyya et al framework. We then conducted qualitative analysis to identify common patterns and themes emerging within these four categories.

## Results

Distinguishing characteristics in the business models of primary care social enterprises include flat rate rather than differential pricing; cross-subsidizing across services rather than patients. Subscription packages and in-house IT systems were utilized to generate revenue and increase reach through telemedicine, franchising, and mobile units. In some cases, alternate revenue streams are employed to help break even. About half of the social enterprises interviewed were for-profit, and about half non-profit. The majority faced challenges in engaging with the public sector. This is still a nascent field, with most organizations being under ten years old.

## Conclusions

Social enterprise has been demonstrated as a feasible model for providing primary care in low resource settings, with key characteristics differing from the previously commonly studied social enterprises in tertiary care. There are opportunities to complement existing public health systems, but most organizations face challenges in doing so. More research and attention is needed by researchers, governments and funders to support social entrepreneurs and avoid parallel systems.

## 1. Background

Social entrepreneurship is an emerging field of research, teaching, and practice. Social entrepreneurship is defined as designing and implementing new products, services, and systems addressing social needs, to create a more just equilibrium rather than personal profit<sup>1 2</sup>. Examples in health care have centered on organizations having a narrow clinical focus that may have facilitated experimentation with innovative delivery processes<sup>3</sup>. A commonly cited example is the Aravind eye care system, cited as the “McDonald’s of Health Care,” on which numerous research articles and teaching cases have been written<sup>4</sup>. Another similar example is Narayana Hrudayalaya Heart Hospital, also in India<sup>5</sup>.

These specialized services are amenable to high volume, low cost business models, especially when the enterprise provides one primary product or service standardized across population segments. This allows for differential pricing to cross-subsidize low income populations, a common revenue model in social enterprise.

With the dire need for primary health care in low and middle income countries (LMICs), social entrepreneurs around the world are attempting to apply similar models to increase access to primary care. Little is known of their business models and impact metrics; or whether the same business models can be applied in primary care, with its wider range of services. LMICs typically have mixed health systems with the private sector accounting for more than half of health expenditures<sup>6</sup>. Higher income patients turn to for-profit providers as a higher quality alternative to government services<sup>7</sup>, which often have long wait times and require lengthy travel, resulting in barriers to access<sup>8 9</sup>. When the public sector fails to provide quality primary care for low income populations, this leads to impoverishing health expenditures and delays in seeking health services. Lack of access may also lead patients to seek services operating outside of regulatory frameworks and not subject to quality control, resulting in low quality care, further exacerbating the vicious cycle of adverse outcomes and higher costs<sup>10 11</sup>. Users of traditional medicine are more likely to be of low socio-economic and educational status<sup>12</sup>.

The literature on social enterprise in primary health has focused on developed settings such as the United Kingdom<sup>13</sup>. In England, community health centers were encouraged to 'spin-out' from public ownership into independently-run social enterprises with support from the government<sup>14</sup>. These demonstrated increased productivity, innovation and responsiveness to underserved populations compared to their public counterparts<sup>15</sup>. In Scotland social enterprises improved health outcomes both through direct delivery of primary care and community development programs addressing social vulnerabilities<sup>16 17 18</sup>. Similarly, in Australia a case study was used to explore social enterprise as a mechanism for well being<sup>19</sup>.

In LMICs however there are few studies on social enterprise in primary health and none have collected primary data<sup>20 21</sup>. Battacharyya and colleagues investigated innovative healthcare delivery models in LMICs using secondary data and proposed a framework theorizing that these are characterized by interaction between business and medical processes driving organizational and social impact<sup>iii</sup>. According to them, *business processes* are generic to most organizations, consisting of: marketing, financing and operations; while *medical processes* are particular to health service organizations, including: prevention, diagnosis, treatment and monitoring. Interaction between these two processes produce two kinds of impact: *organizational impacts*, relating to the enterprise itself, including replicability and sustainability; and *social impacts*, relating to the beneficiaries, including availability, affordability and quality of care. Tung and Bennett examined ten large scale private for profit providers in LMICs and found that their business models had similar characteristics to non-profit providers, including social rather than commercial marketing, low-cost high-volume services, partnerships with government and differential pricing across customer segments. The majority provided specialized services such as eye care; and the authors found data paucity a challenge<sup>22</sup>. Angeli and Jaiswal examined six case studies in India using secondary data to identify business model innovations enabling inclusive health care. Results included co-creation of patient needs, community engagement, continuous involvement of customers, innovative medical technology, focus on human resources, strategic partnerships, economies of scale, and cross-subsidization<sup>23</sup>. The organizations included in this study provided secondary and tertiary care; hospitalization, emergency care, medical devices, or water and sanitation.

This study collects and analyze primary data from a sample of social enterprises delivering primary care in LMICs. This was motivated by the following practitioner-oriented research questions: can social enterprise be a viable model for providing primary care in low resource settings? If yes, are there common patterns and characteristics of social enterprise in primary care that could inform the work of social entrepreneurs, funders, and researchers in this area? To

answer these questions, we conduct a scoping search using the portfolios of global organizations supporting social entrepreneurs, to identify those working in primary care provision, and conduct interviews to gain insights into their operational and revenue models, financing, and impact metrics.

## 2. Methods

This research was conducted at Harvard T.H. Chan School of Public Health from November 2017 through November 2018. We analyzed data from interviews with founders or chief executives (CEO or Executive Director) of social enterprises delivering primary care in LMICs according to World Bank classification<sup>24</sup>. Social entrepreneurs were identified from the following international organizations dedicated to supporting social entrepreneurship: Ashoka, Acumen Fund, Skoll Foundation, Duke SEAD, Echoing Green, Sankalp Forum, Schwab Foundation. While these organizations by no means encompass all social enterprises, they are well recognized for the breadth and diversity of the organizations they support worldwide and their accuracy and rigor in identifying and selecting them<sup>25</sup>.

The social entrepreneurs were identified by reviewing the 'health / health care' portfolios. We restricted our sample to those offering direct patient-provider relationship; excluding those focusing on enhancing the process of delivery (eg. supply chain, technology or capacity building), financing access to care (eg. community health insurance or vouchers), or transaction of health consumables (eg. Pharmacies or health stores). Founders or Directors/CEOs were contacted by email. No relationship was established prior to study commencement. The reasons for doing the research were shared with participants along with the interviewer's interest in the research topic. Semi-structured interviews were conducted using a topic guide based on the Business Models Innovations in Health Service Delivery framework by Bhattacharyya and colleagues (Tale 1) (20). With the exception of one in person interview, all interviews were conducted by telephone. Interviews lasted between 25 to 45 minutes, with additional follow up by email. Interviews were conducted by the same researcher between June – August 2018. No one else was present besides the researcher and the participants.

Identifying and coding themes across the dataset was done using NVivo software. Validity and reproducibility were ensured by: (1) Using a semi-structured interview topic guide (2) Recording the trail of data collection, theme development and analytic decision consistently using the software OneNote. (3) Confirming consistency of data from the primary transcript with online sources related to the organizations, including official websites and case studies. The multiple references from various resources provide triangulation in addition to increasing the robustness of our data. No repeat interviews were conducted; and no audio or visual recording was used.

## 3. Results

### *3.1. Sociodemographic and geographic characteristics of the social enterprises*

394 social entrepreneurs were identified from the 'health' and 'health care' portfolios of the international organizations reviewed. This was narrowed down to 61 working in primary care. The remaining 333 worked on specific diseases, tertiary care, and social determinants. Of the 61, 10 provide primary care service delivery. The remaining 52 were excluded as they work in other areas of primary health care such as information technology, enhancing processes of primary care, transportation to primary care facility, funding primary care, and direct-selling of health consumables. Of the 10 providing primary care, 9 responded to our interview request.

### *3.2. Themes of the qualitative analysis*

#### *3.2.1 Medical Process: Curative versus Preventive*

Curative services were the main type of service offered in our sample organizations. The most common symptoms which these services were utilized for include fever, digestive symptoms and respiratory symptoms, in which curative medications were mainly prescribed. Preventive services were carried out less frequently. For non-communicable diseases, two organizations reported doing health screenings for diabetes and hypertension as part of their main operation. Other organizations offered these services passively, to patients when there is a need, and to the community when dedicated funding was available. For communicable diseases, two organizations offer regular vaccination services, while others only offer vaccinations at the request of patients.

### *3.2.2. Business Process: Financial sustainability strategies*

Strategies for financial sustainability included two components, cost reduction and income generation. Three common strategies were identified in each component (Table 3).

#### Cost reduction

Eight of nine organizations operate in countries with national health systems that do not reimburse cost of treatment in private facilities. These organizations obtain revenue directly from patients through out-of-pocket payments. Methods to keeping costs low were cross-cutting and included:

1. Bulk purchase of generic pharmaceutical products directly from manufacturer. Organizations were able negotiate a lower price and cut costs incurred by intermediaries. The bargaining power of the organizations are related to the size of their networks, which range from 7 to 30 chains/franchises. Six organizations cited this practice as the most effective method of lowering costs. One founder mentioned that their country's status as the world's largest producer of generic drugs played a substantial role in their ability to keep cost low.
2. Use of paramedical staff to treat patients – Two organizations utilized paramedical staff such as nurses or medical assistants to attend simple cases to save cost in salaries.
3. In-house laboratory services – One organization created a centralized laboratory to house diagnostic equipment, saving substantial costs compared to referring these procedures to outside laboratories. This was also the organization with the largest network of chains, at 30, allowing them to benefit from economies of scale from the laboratory.

Interviewees emphasized that being low-cost does not mean being the cheapest in the area. A more important aspect is to offer the lowest cost possible for high quality care:

*"I don't think it [our price] is really low. We are not the cheapest, we don't claim to be the cheapest, and we don't want to be the cheapest."*

*"I would not say that we are absolutely the cheapest... we try to position ourselves as affordable to the mass market [in this country] as possible."*

Interviewees associate the low-cost of service fee with high volume of patients to become financially sustainable. Scaling mechanisms to achieve high volume are described below under organizational impact.

#### Income generation

1. Flat-rate pricing – Seven of the nine organizations did not differentiate price based on socio-economic status; patients pay a flat-rate consultation fees in addition to the cost of drugs and diagnostics. Two organizations differed. One systematically assesses socio-economic status using questionnaires and provide highly subsidized or free treatment to high poverty populations. The other identifies a location below the national poverty line and provides highly subsidized

or free treatment at that location, charging higher fees in other locations. One founder pointed to flat rate fees as being 'non-discriminatory' towards all:

*"When people come to our clinic, there is nothing like poor or rich. Every patient is the same. We don't differentiate based on income or anything, so the payment is the same for everyone."*

The founder cited that charging a low flat-rate price to all patients saves direct and opportunity cost of measuring each patient's socio-economic status.

2. Alternative revenue streams - While most organizations exclusively run healthcare services as their revenue source, three organizations subsidize the cost of health services using alternative revenue streams. Two sell their self-developed health information technology systems (HIT) to other organizations. A third sells eyeglasses as an added revenue stream.

3. Subscription packages – Three of the nine organizations offer subscription packages for patients with diabetes and hypertension. These models are similar in that they are a form of pre-payment where patients pay a yearly flat rate to receive treatment and monitoring services for diabetes or hypertension. All three do not include coverage for hospital referrals. One founder cited this as a basic form of capitation payment that can keep costs low by cost containment-mechanism. Subscription packages were viewed as a basic form of insurance that allows financial pooling which lowers the cost to patients by distributing the cost of treatment among all subscribers.

### *3.2.3. Social Impact*

#### *Management versus Outcome Metrics*

All nine social enterprises measure social impact, but with variable metrics and level of rigor. The metrics generally fell into two categories: management and outcome metrics. All organizations measure management metrics including number of new patients, returning patients, and patient satisfaction scores. Outcome metrics are less common; the only one organization measuring outcomes uses metrics specific to chronic disease, such as the proportion of chronic disease patients that has their disease under control. A top-management staff described the difficulty in measuring outcomes for acute diseases as they are only possible when the patient returns because of ineffective treatment or a new complaint. Active measurement of social impact for community members; regardless of whether they have ever utilized service or not, was viewed as difficult. A top-level management staff cited an 'inherent trust issue' when attempting to measure health trends in new communities. Another founder mentioned:

*"Our key indicators were primarily processes, it is extremely hard to measure outcomes at the population level to say that you know, yes, you have the impact. In terms of utilization, processes and output indicators, we had many; but outcomes were very, very hard. Even though I stayed in the company for 8 years, we only had early signs within chronic care management that we were having a meaningful impact, but I cannot say that we have a population level outcome for the poor."*

Eight of the nine organizations define 'low-income' based on geography, identifying all patients within the same vicinity as falling into low socioeconomic status. Hence, the impact of their organization towards low income patients is taken as the number of footfalls in their clinics. Only one organization assessed socio-economic status using questionnaires and hence impact towards patients living in poverty was able to be measured.

#### *Access and Patient Base*

Improving access to quality care through availability and affordability was a cross-cutting strategy to reach low income populations. A common strategy adopted by six out of the nine organizations was establishing their clinics in low income neighborhoods. One founder explained:

*"We really locate in little towns which are aggregation of villages. We are not present in larger towns. Most people that we had access to were lower middle class or poor people, the richer people were either going to big cities, or did not even stay in the area. So, I think given our core objective was access, where we located our clinics was the deciding criteria of who was our primary audience".*

Of these six organizations, only one operated in rural areas, and five are situated in peri-urban settlements. The remaining organizations that do not operate clinics in low income areas reach the underserved through mobile units, telemedicine and spoke clinics attended by clinical staff from the city on certain days of the week. The patient base for all organizations included all layers of society. All interviewees were not concerned about 'misuse' of low-cost services by the middle- and high-income population. Attendance of middle- and high-income patients indicated the good quality of services provided.

*"We don't ensure that everyone who is coming is poor. That is not our mandate. Our mandate is health for all. Even I go to the clinic, my boss goes to the clinic. **That is the perception that we want to change, that cheap clinics cannot be of good quality.** We want everyone from all strata of society to come to our clinic"*

*"Most of them are poor people, but they don't need to be poor people. Sometimes they just don't have access to health."*

#### 3.2.4. Organizational Impact

##### *Scaling Strategies*

All interviewees were organized as chains, franchises or multiple mobile units. Five organizations were chains of clinics, two were franchises, and two were solely operating through multiple mobile clinics. Chains and franchises ranged from 7-30 clinics, while mobile units ranged from 110-116 per organization. Having multiple chains increased the bargaining power for bulk purchase of medicines and allowed for economies of scale from in-house laboratory facilities.

Another scaling mechanism was 'spoke' clinics acting as peripheral extensions to main clinics, operating only on certain weekdays. Three organizations used telemedicine to connect patients in rural areas to doctors in main clinics.

Scaling was indicated as important for financial sustainability (Table 3). A top-level management staff mentioned the importance of multiple chains:

*"If we only have 5 or 7 branches, we overall lose money as an organization."*

Of the five organizations operating as chains, four achieved financial break-even. Two achieved positive cash flow four months into operation. Of the two that were franchises, both achieved break-even; as did the two that operated through mobile units.

##### *Leveraging health information technology (HIT)*

Broad and consistent utilization of HIT has proven to increase health care quality and effectiveness, reducing costs, preventing medical errors, and expanding accessibility (22). All nine organizations utilize HIT in their operations. The common use of HIT among all organizations is the digitalization of patient information systems. Five organizations mentioned that this is important as it improves the efficiency of managing patients and allows patients to access any facility. This is considered important because all the organizations operate either as chains, franchises or mobile units

and the transfer or referral of patients from one facility to another is common. Three organizations developed their own patient information system, while others subscribe to a vendor. Three organizations use HIT in the form of telemedicine to increase accessibility and volume. One director emphasizes the role of HIT in her organization:

*"We really want to use tech in innovative ways... not to keep technology as the focus point, but technology as an enabler."*

#### *Challenges in engaging with the public sector*

Eight of the nine organizations interviewed cited limited engagement with the public sector. These were limited to regulatory transactions such as reporting notifiable communicable disease, licensing of clinical facilities and renewing practice certificates for staff. Outside of regulatory engagements, one founder described their engagement with the public sector as one-sided:

*"We are helping them instead of them helping us, for example, when a public service has a problem, we go there with the doctors, like a health care mission".*

One interviewee worked very closely with the public sector, whereby patients' fees were reimbursed by national insurance schemes, the same medical record system was shared, and monthly audits were conducted for accountability. The organization's main operations during initial establishment was providing primary care services directly to underserved patients; as public sector engagement grew, the focus shifted to identifying the greatest needs of the public health system and tailoring health services to fulfill them. Today, alongside providing primary care services, a big part of their operation consists of efforts in shortening wait times for diagnostic procedures with backlogs in public facilities. This was done by providing those diagnostic procedures themselves and referring patients back to the public sector for continued care. Since these procedures are reimbursed by the national health insurance scheme, this became an important component of their financial sustainability. This level of engagement was described by a top-level executive to take a long time and huge effort to build trust:

*"After a long time, we start to have trust from the mayor, the secretary (of health), the (public sector) doctors. They started saying – You know, this [name of organization] is very interesting, I think they can do more."*

The themes elaborated above are summarized in Table 4.

## **4. Discussion**

This is the first study examining the social enterprise model in a primary health care context using primary data in LMICs. We build on previous studies examining social enterprises in specialized care using secondary data. While there are similarities between the two, our results indicate key differences. These will inform efforts by social entrepreneurs, researchers, and funders working to increase access primary care access in LMICs.

A key difference was pricing mechanisms. The majority of specialized care social enterprises utilize differential pricing to subsidize across population segments depending on patient income. This is made possible by the standardization of a narrow scope of services which can be offered across population segments. Our results indicate that this may not be a feasible model for social enterprises providing primary care, where the range of services is broader. Cross-subsidization across services is more feasible, leveraging services such as optometry, diagnostics, and HIT sales to subsidize clinical consultations.

The subscription model utilized by some interviewees could be an example of a revenue model for primary care. This model has been described in a recent study by Leung et al, who examined a sample of organizations from the Center for



Health Market Innovation database. One example was MicroEnsure, a for-profit venture operating in Sub-Saharan Africa and Asia. MicroEnsure partnered with a health plan in Tanzania, covering primary care and limited secondary care for chronic diseases, maternity and neonatal care for a union of coffee growers for about \$2 USD per month. This echoes previous results from Uganda, where a non-profit hospital tested a micro-insurance scheme to provide a stable source of funding.

While pricing mechanisms and revenue streams distinguished the primary care social enterprises, several common traits remained. One was cost reduction strategies such as bulk purchasing of pharmaceutical and medical supplies, and use of paramedical staff. The latter is especially a commonly documented cost reduction strategy in social enterprise in other sectors, coinciding with a push within public health to shift away from a physician-only model to a care team approach.

Other common traits related to scaling, to ensure a high-volume low cost work stream. Of these, HIT was key. HIT could be a key to both sustainability and scalability of low cost health services: interviewees that developed their own HIT managed more patients efficiently; reached remote populations through telemedicine, and generated additional revenue through software sales. Thus multiple barriers to access were addressed including provider availability, direct transportation costs, and indirect costs from transit time. Mobile units, franchises and chains were further enabled by the use of IT platforms to track patients.

In addition to examining similarities and differences between primary vs. specialized care social enterprises, a key contribution of this study is characterizing common attributes of Primary health social enterprises in LMICs. One notable characteristic was that the majority provided curative rather than preventative services; suggesting that their function may be akin to urgent care clinics in developed settings. This was surprising given the dire need for public health prevention, especially among low income populations. It may be that there is a more immediate, pressing demand for curative services, especially when loss of productivity and the ability to work is at stake.

Another notable result was the challenge in engaging with governments. Differences in public health systems is likely the largest factor. The social enterprise which was most engaged with the government was located in South America, while many of the others were located in South Asia, and were younger organizations. Thus another reason could be the survival-mode of the younger organizations and their need to focus on establishing sustainable, scalable operations.

The creation of parallel systems has been a critique of social entrepreneurship in general and this is especially pertinent in public health, where strengthening health systems is a global priority. If social enterprises can complement rather than replace existing health system offerings, this helps address this concern. Previous research concludes that partnerships with government or support from social insurance schemes is a success factor for private for-profit health providers at the bottom of the pyramid<sup>xx</sup>. This mirrors success stories from other sectors, such as the education sector. New interventions first focus on piloting and demonstrating proof of concept, and in later years are able to advocate and integrate with existing institutions for long term growth.

While our study is critical in informing efforts of social entrepreneurs striving to provide primary care in LMICs, it should be noted that we applied a convenience sample which is neither comprehensive nor representative. We examined social enterprises identified and vetted by international organizations supporting social entrepreneurs, as a starting point to determine whether social enterprise is a feasible model in primary health care, and whether we could identify any preliminary patterns or characteristics. Our results make the case that this is an area which merits further attention by many relevant stakeholders including implementers, funders, and researchers.

Future research can build on these findings by including smaller scale local social entrepreneurs. Example we came across outside of our search include Hospitals Beyond Boundaries in Cambodia, which utilizes differential pricing to

serve a subpopulation of ethnic minorities with cross-subsidization of different income levels; and eHealthpoint in India, which bundles services such as clean drinking water, medicines, diagnostic tools and telemedicine. Clinica Africa provides primary care in Uganda using a for-profit model supplemented with donor support for rural areas through affiliation with an NGO. Another area for future research is understanding the failures. Out of the ten organizations approached in this study, the one organization that did not respond was a social enterprise which shut down. Learnings from such cases are invaluable in understanding what has and has not worked in different settings. Among the nine organizations interviewed, only two of the chief executives were women. While our interview guide had not included targeted questions examining gender discrepancies, future research merits focused attention to better understand this factor. Finally, more in-depth examination of organizations' quantitative data on all four levels of the conceptual framework is needed to develop an advanced understanding of their models.

## 5. Conclusions

In summary, social enterprise has been demonstrated to be a viable model to provide primary health care services in low resource settings. The social enterprises interviewed have increased availability and accessibility to quality care in LMICs using targeted strategies to shape their services, sustainability, social and organizational impact. The young age of the majority of organizations suggests that the field of social entrepreneurship in primary care is still in its infancy. In shaping future resources dedicating towards understanding and supporting this sector, it is critical to understand how social entrepreneurs can complement and strengthen existing efforts to improve population health.

## Abbreviations

HIT

Health Information Technology

LMICs

Low and Middle Income Countries

NGO

Non-governmental organization

## Declarations

*Ethics approval and consent to participate:* Consent from study participants was obtained verbally. Approval was waived by the IRB of the Harvard T.H. Chan School of Public Health

*Consent for publication:* Not Applicable

*Availability of data and material:* The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

*Competing interests:* The authors declare that they have no competing interests.

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*Authors' contributions:* TC (MSc, ScD) structured the research agenda and the writing of the manuscript. LL (MD, DrPH) conducted and transcribed the interviews, and coded the data. All authors reviewed the data and determined the emerging themes.

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*Authors' information:* TC launched and led a venture philanthropy organization in Lebanon providing support to grassroots social enterprises serving marginalized populations. During the time of the study she was employed as a Research Associate at Harvard T.H. Chan School of Public Health. LL launched and led a youth-led social enterprise in Malaysia providing primary care to ethnic minorities in the region, alongside nutrition, shelter, and socioeconomic support. During the time of the study he was enrolled in the DrPH program at Harvard T.H. Chan School of Public Health.

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## Tables

Table 1  
Interview Tool

Topic	Interview Questions
Medical process	Can you describe the range of services provided by your organization?  What are the most common services that patients are coming in for? How do you keep track of the health outcomes of your patients?
Business process	Can you describe the marketing strategies your organization employs? How does your organization maintain financial sustainability? How many funding sources you have today, and what is the main one? How did your organization first receive its initial funding?
Social impact	What does social impact mean to your organization? How does your organization measure social impact? How does your organization identify and assist low income patients? Do you collaborate with the public sector, if yes, how?
Organizational impact	How long has your organization been in operation? What were the key factors to your organization's survival and growth? How far-reaching has your organization been in terms of people and geography? Has your business model been able to be replicated elsewhere?

**Table 2: Characteristics of sample organizations**

	n
<i>Total organizations</i>	9
<i>Scope of work</i>	
Local	7
National	0
International	2
<i>Geography</i>	
South Asia	6
Sub-Saharan Africa	1
South America	2
<i>Legal structure</i>	
For-profit	5
Not-for-profit	4
<i>Years since establishment</i>	
1 – 20	8
21 – 40	0
21 – 30	0
31 – 40	1
<i>Initial funder</i>	
Family and friends	7
Banks	1
Venture capital	2
<i>Gender of chief executive</i>	
Women	2
Men	7

Table 3  
Strategies for reducing cost, generating income, and increasing volume

Financial Sustainability Strategies		Mechanism
Costs	Bulk purchase of generic medicines	Purchasing generic medicines directly from suppliers allow organizations to negotiate lower prices as well as eliminating the cost incurred by intermediaries
	Paramedical staff	Training paramedical staff to treat simple cases lowers the cost of salaries
	Laboratory service	Running laboratory tests in own centralized laboratory saves the transportation and service cost of referring to outside laboratories.
Income	Flat-rate pricing	Charging a low flat-rate price to all patients save the direct and opportunity cost of measuring each patient's socio-economic status
	Alternative revenue streams	Having alternative streams of revenue to support health services lowers cost to patients by subsidizing the cost of treatment
	Subscription packages	Subscription packages allows financial pooling that lowers the cost to patients by distributing the cost of treatment among all subscribers
Scaling strategies		Mechanism
Scaling physically		Chains, franchises and mobile units increase volume of patients by widening geographical access
Scaling virtually		Telemedicine increases volume of patients by increasing access to hard-to-reach areas and saving the cost of transportation

Table 4  
Summary of themes

<b>Medical Process:</b>	<b>Curative versus Preventive</b>
Business Process:	Financial Sustainability Strategies (Table 3)
Social Impact:	Management versus Outcome Metrics Access and Patient Base
Organizational Impact:	Scaling Strategies Leveraging Information Technology Challenges engaging the public sector

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [ISSMCOREQChecklist.pdf](#)