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Acronyms & Abbreviations

CASE	Center for the Advancement of Social Entrepreneurship
CASE i3	CASE Initiative on Impact Investing
DGHI	Duke Global Health Institute
DHT-Lab	Developing World Healthcare Technology Laboratory
DSISE	Duke Student Initiative on Social Entrepreneurship
DIHI	Duke Institute for Health Innovation
EWH	Engineering World Health
GRE	Investors' Circle <i>Getting Ready for Equity™</i> workshops
HESN	Higher Education Solutions Network
IC	Investors' Circle
IRB	Institutional Review Board
I&E	Duke Innovation & Entrepreneurship Initiative
IPIHD	International Partnership for Innovative Healthcare Delivery
M&E	Monitoring and Evaluation
SEs	Social entrepreneurs
SEAD	The Social Entrepreneurship Accelerator at Duke
SEAD SAC	SEAD Student Advisory Council

Executive Summary

In Quarter 2 of FY2014 (January 1 – March 31, 2014), highlights of SEAD's efforts include selection and onboarding the second cohort of global health social entrepreneurs, refining our curriculum strategy for the SEs based on feedback, finalizing the Program Evaluation framework and modules for Duke IRB submission, publishing the *Fundraising for Global Health Social Enterprises: Lessons from the Field* report, planning for the April SEAD Summit & Symposium, and implementing interdisciplinary student activities. SEAD also continued with ongoing activities, such as capacity building work with the cohort 1 SEs, continuing to build a global health track within the impact investing realm, and planning for SEAD-related student summer placements.

Also in Quarter 2, SEAD bid farewell to Associate Director Richard Bartlett who returned to his previous job with McKinsey & Co. SEAD was pleased to welcome Sarah Gelfand to take over that role; Sarah was most recently the founding director of the Global Impact Investing Network, a non-profit organization focused on scaling the impact investing industry. SEAD also welcomed Program Assistant Kyle Munn, who had previously worked in the Master of International Development Policy at the Duke Sanford School. In February 2014, the Duke and greater social entrepreneurship communities came together to honor and memorialize the life and work of Greg Dees, whose landmark research laid the foundation for the SEAD program.

In early Quarter 2, SEAD finalized the selection of global health SEs for cohort 2 along with input from USAID. The cohort consists of four SEs based in India and two in East Africa, with three focused on low-cost healthcare delivery for marginalized populations, one focused on capacity building for community health centers, one focused on health loans, and one providing affordable technology for eye-screening. SEAD implemented a number of on-boarding activities for this new cohort, and prepared them for the April SEAD Summit.

SEAD's impact investing effort in Quarter 2 included a productive quarterly meeting with the Global Health Advisory Board, which included receiving feedback on some of SEAD's impact investing work. SEAD also identified the need for a landscaping project around debt for global health ventures and initiated a partnership with the Calvert Foundation to carry out this work. Additionally, IC held its quarterly Beyond the Pitch event with the global health track in place.

SEAD launched a few exciting and well-received student engagement activities in Quarter 2 that brought together undergraduate and graduate students from programs across the university. In early March, SEAD co-hosted a Social Entrepreneurship 101 Workshop to give students the opportunity to learn about the frameworks and real-life examples of social entrepreneurship. In late March, SEAD worked with SE Changamka to launch a student case competition aimed at identifying solutions to some of Changamka's marketing challenges with its Linda Jami product. Forty-two students from across the university worked in nine teams over a weekend to research and develop recommendations, and Changamka reported that they received inspiration from many of the teams' ideas. SEAD also worked to select and prepare students for SEAD-related summer internship opportunities.

To further its research agenda, SEAD also launched in Quarter 2 a SEAD Research Working Group engaging faculty from across the university. The first meeting gave attendees a better idea of SEAD's general research interests along with a number of examples of innovator-specific and field-building scopes of work. The working group will meet every other month, and will also be invited to meet directly with SEAD innovators at the SEAD Summit and Symposium.

Looking to Quarter 3, SEAD looks forward to hosting the SEAD Summit and Symposium, and planning for summer field visits with members of the second cohort.

Part I: Key Activities

1.1. Summary of Key Activities

Objective 1.1: Build Global Health Pipeline—SEAD will identify a qualified pool of innovative technologies, systems, business models, and approaches for healthcare and preventive services.

1. We finalized the selection of the second cohort of social entrepreneurs during this period, which includes six SEs from India and East Africa: Arogya Finance (India), Forus Health (India), LifeNet (Africa), North Star Alliance (Africa), SughaVazhvu (India), Swasth (India). See Appendix 1 for short profiles of the SEAD Cohort 2 SEs.
2. We also announced the cohort via several blog posts that highlighted their innovative models, including those listed in the Communication section.

Objective 1.2: Develop Resources and Capabilities—SEAD will help social entrepreneurs to scale their social impact by developing and strengthening skills to design effective business models, develop and implement scaling strategies, and attract sufficient resources.

1. To orient the new innovators to the SEAD program and prepare them for the April SEAD Summit, we undertook several activities:
 - a. Hosted a “Welcome to SEAD Webinar” for all new innovators in January. This webinar provided an overview of the program, introduction to other cohort members, and an overview of upcoming SEAD programming activities
 - b. In February, we conducted 1:1 intake calls with each innovator. These calls allowed us to develop a more in-depth understanding of the specific objectives and goals of each innovator as they relate to the key “challenge areas” of focus within the SEAD curriculum. See Appendix 2 for a copy of the intake form.
 - c. During March, we held 3 webinars to share more specifics on the SEAD Summit and IPIHD Annual Forum including what to expect, how to best engage partners and faculty, and tips related to their 3-minute pitch presentation.
2. During this period, we dedicated significant time and energy to preparing for the SEAD Summit. This included designing and coordinating the programming and logistics for a three-day event on the Duke campus. Specifically, the team identified and recruited expert speakers

to deliver content in key areas including: maintaining culture through organizational growth, behavior change frameworks, forming corporate partnerships, turning metrics into impact, and preparing for and accessing grant funding and equity. We also arranged for a number of 1:1 meetings between innovators and Duke Faculty and innovators and Investors' Circle to refine their pitches. as well as to host two dinners bringing together diverse faculty from across the university. Finally, we organized and arranged the travel itineraries for all the innovators attending the Summit.

3. In Q2 2014, we refined our curriculum strategy based on innovator feedback and lessons learned during our first year. A key change is the designation of "engagement managers" for each innovator rather than "coaches" to check-in with innovators on a periodic basis and steward their participation in the program. The team also built a more robust curriculum map – allowing the team to deliver a more structured suite of content and programming and identifying resources to develop certain types of content in the short term/long term, key experts to engage on specific topics and opportunities for regional events to pull key stakeholders together with innovators. See Appendix 3 for a copy of the proposed curriculum model and map.
4. Over the past quarter, we have continued to provide customized support to Cohort I innovators. Examples of this support include: helping an innovator evaluate the feasibility of launching a social franchise model, researching the private health insurance market in Mexico, reviewing business plans and investor pitches for several innovators, supporting the development of an innovator's behavior change marketing strategy, and supporting an innovator to develop clinical protocols and key metrics for common conditions seen.

Objective 1.3: Leverage Impact Investing—SEAD will serve as a bridge between global health social entrepreneurs and the impact investment community to facilitate increased access to investors, innovative deal structures, instruments, and funding partnerships.

1. Hosted the quarterly IC Global Health Advisory Board call on Jan 15, 2015; 17 out of 19 advisory board members were able to join, which allowed for a high level of engagement. SEAD updates included getting the GHAB's input on the debt capacity effort, and beginning to plan the October convening on global health investing. Other takeaways were introductions to angel groups on the ground in E. Africa and India, an Advisory board member sharing the challenges on working on an investment for a mobile diagnostic tool for diabetes in India, and the board re-iterating the need for trusted partners and visibility into what investments are happening in global health.
2. IC Pipeline development: IC's model includes a set of investment pipeline partners who understand IC's investment criteria and regularly recommend deals that fit to the network for potential investment. These include accelerators, other angel groups, universities, etc. As part of SEAD, IC is working on developing a set of pipeline partners to create a stream of companies ready to access capital in global health. This is a much broader group than its support for our cohorts, and is aimed to create a more robust marketplace for global health entrepreneurs generally. IC has started to identify and sort potential investment pipeline partners into what they are calling Priority 1 and Priority 2 Pipeline partners depending on their connections to East Africa or strong investor connections (including if several members of the GHAB think they would be strong partners). IC began outreach and 1:1 conversations with potential investment pipeline partners to increase connections to global health innovators and investors.

3. IC hosted a quarterly Beyond the Pitch event on Feb 11th in Denver with Global Health track. Five companies with international development impact pitched, two of which had global health impact potential. See Appendix 4 for a copy of the Beyond the Pitch: Denver agenda.
4. IC launched its call for applicants for the next IC pitch event, which will take place in Philadelphia in May.
5. SEAD and IC reached out to identify an investment partner to help with the task of landscaping the investment marketplace in global health. We have scoped a project, called the Global Health Investment Landscaping Project (or GHILP) and are working to finalize a \$50,000 subcontract with the Calvert Foundation in Bethesda, MD for this work. The project is co-led by SEAD staff and a CASE alumna currently working at Calvert, Beth Bafford. The project has two deliverables: 1) to identify and map the sources of capital available for global health ventures in East Africa and India, with a specific focus on debt providers, and 2) to see if there are enough debt providers that fit Calvert's criteria in order to create a robust global health investment note for non-accredited investors.

Objective 2: Enhance Knowledge and Policy—SEAD will broaden and enhance understanding of the conditions that foster or inhibit effective, sustainable, scalable innovations in health care and preventive services; and, based on this knowledge, it will recommend regulatory and policy strategies as well as private sector mechanisms to foster more promising innovation and more effective scaling of impact.

1. Faculty engagement effort in knowledge & policy
 - a. Launched SEAD Research Working Group: In March, SEAD held the first SEAD Research Working Group meeting, bringing together staff and faculty across Duke schools to discuss interests and opportunities to collaborate on research using SEAD as a platform and contributing to some of the overall SEAD knowledge goals. The group will continue to meet every other month.
 - b. Significant time was spent in Q1 2014 holding 1:1 meetings with key faculty across Duke to educate them on the SEAD innovators, understand their areas of focus for research and identify internal existing resources that could support SEAD curriculum development (i.e. performance management, nurse training).
 - c. Specific Innovator Collaboration: Continue to facilitate learning opportunities/collaboration between Duke hospital and an innovator. Collaborations include weekly cross-learning calls between doctors, co-development of a sub-specialty program, development of an educational conference, opportunity for in-person exchange.
2. SEAD Program Evaluation
 - a. Finalized modules: The SEAD team worked to finalize the Program Evaluation design and associated modules, and elicited feedback from a variety of academics within and outside of the university as well as from one of the SEAD innovators. See attached PE design and modules (as submitted to the Duke IRB) in Appendix 5.
 - b. Submission to Duke Institutional Review Board: In March 2014, SEAD submitted the Program Evaluation design and modules to the Duke IRB for review and approval. (Note that approval was granted in April 2014.)
3. CASE i3, in collaboration with SEAD, published a report targeted to global health entrepreneurs that reviews lessons learned in fundraising: "Fundraising for Global Health Social Enterprises: Lessons from the Field." (Link: http://sites.duke.edu/casei3/files/2014/03/CASEi3_Fundraising_Report_.pdf). The report focuses on funding lessons from the global

health social entrepreneurs who are part of SEAD. They are based across the globe in Asia, Africa and Latin America, working to scale their impact through ventures that include providing last mile delivery, operating hospitals and clinics, selling micro-insurance, and using technology to combat counterfeit drugs. See also the Huffington Post Blog about the paper, [Pitching Investors in Global Health: Funding Lessons From Social Entrepreneurs](#).

Objective 3: Engage Students and Faculty—SEAD will increase the engagement of students and faculty in meaningful opportunities for experimentation, innovation, learning, civic engagement, and knowledge development in the field of global health.

1. Preparation for Summer Internships:

- a. Selected 5 MBA interns and fellows for the SEAD/IPIHD summer internship. Over the next quarter, SEAD will work with the selected interns and fellows and innovators to determine placements.
- b. Launched a new summer film internship program for undergraduate students at UNC and Duke and selected a 4-student team to travel to India this summer to make a short documentary film about a global health innovator.
- c. Worked closely with USAID and multiple schools across Duke to promote the openings through the USAID HESN Summer Internship program. The SEAD office received applications from 28 students, and selected 20 of those to forward on to USAID. USAID offered positions to nine students, and four students accepted the offer and will intern with USAID this summer.
- d. Selected four students to receive SEAD summer fellowship funding to participate in the Duke in Geneva Global Health Fellows Program; met with program leaders to discuss content for the associated intensive one-week course and incorporation of global health innovation.

2. Engaging students in research:

- a. Completed work of DGHI MSc and Duke undergraduate student research assistants for this academic year, including publishing research on healthcare innovation in China, designing a program evaluation for a Chinese innovator, creating both in-depth and brief profiles of healthcare innovators, background research in best practices in recruitment and retention for healthcare providers in developing countries, and research on eye care innovations in Kenya.
- b. Presented to first year medical students about IPIHD and SEAD and opportunities to be involved in the research and clinical side of global healthcare innovation during medical school. Duke medical students spend their 3rd year as a research year at Duke, and we are interested in having them paired with our innovators for a 9 month research project and have started this process.
- c. Met with faculty at across Duke's many academic departments, schools, and institutes to discuss future opportunities for collaborations with faculty and students on global healthcare innovation through SEAD.
- d. SEAD faculty applied for and were awarded a project through Duke's high-profile Bass Connections to work with a group of interdisciplinary students to increase our understanding of the drivers of scale for health-focused social entrepreneurs and the impact of these organizations in improving the health and healthcare of their target populations. Students will have an opportunity to work with social entrepreneurs to perform health market research and evaluate marketing strategies.

Recruitment for this project will take place in Fall 2014. See the following link for more information about the project:

<https://globalhealth.duke.edu/projects/evaluation-scaling-innovative-healthcare-delivery-east-africa>

3. Supporting academic learning:

- a. SEAD Case Competition: SEAD worked with innovator Changamka to identify an issue that Duke students could tackle through a Case Competition. Forty-two students from a wide variety of graduate and undergraduate programs worked together in nine teams to conduct research and propose recommendations to Changamka. Four finalist teams presented live in front of the case competition judges (who included a Marketing professor, USAID rep (Karen Clune), a SLB grantee who is also Duke faculty, the CEO of Changamka, and SEAD Program Director), and selected a winning team that presented a number of innovative customer saving incentive schemes. Changamka CEO Zack Oloo reported that he would take many great ideas from all of the submissions back with him to help address the company's issue. See SEAD's blog on the Case Competition at: <http://www.dukesead.org/1/post/2014/04/42-students-participate-in-sead-case-competition.html>
- b. Courses: SEAD collaborated with CASE to organize a session on human-centered design for students participating in the Fuqua Client Consulting Practicum who were working on social impact and international development projects, in preparation for their field visits. SEAD also provided support as students conducted their field visits in South Africa over their Spring Break; the FCCP clients in South Africa included Saving Lives at Birth grantee Wits Health Consortium, working on their mHealth component.
- c. Workshops: SEAD collaborated with Duke I&E and others to host a Social Entrepreneurship 101 Workshop open to students around the university. Twenty-nine students attended the four hour workshop on a Saturday, representing many undergraduate and graduate programs; the students reported high satisfaction with the workshop, and recommended additional future workshops that would focus on specific areas in greater depth. The workshop revolved around a number of global health-related examples. Additionally, SEAD collaborated with CASE and the Fuqua Design & Innovation in Business club to develop a Design Thinking for MBAs workshop (with social impact slant and health-related examples) to take place in April 2014.

4. Preparation for SEAD Symposium

- a. SEAD spent much of 2014 Q2 preparing for the April 4th Duke Symposium on Scaling Innovations in Global Health (aka SEAD Symposium), whose primary target audience is students and faculty (along with the SEAD SEs). Preparations included organizing panel sessions, a keynote address, promotion of the event, and all of the associated logistics.

1.1.1. Events

The following major events were achieved during this reporting period:

Event Name	Description	Start Date	End Date	Location (City)	Location (Country)
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World Economic Forum, Davos	IPIHD Dinner Reception: Highlighted SEAD as part of the health innovation work connected to IPIHD, to over 40 global leaders, including communications minister of Nigeria, Director of US National Institutes for Health, and several corporate CEOs. Follow-up includes invitation for SEAD/IPIHD to participate in the National Institute of Mental Health's workshop, "Solving the Grand Challenges in Global Mental Health: Partnerships for Research and Practice" in June 2014, and addition of Philips Healthcare as financial sponsor of IPIHD, increasing leverage provided to SEAD.	1/24/14	1/24/14	Davos	Switzerland
Arab Health Conference	Krishna Udayakumar co-chaired the Health Innovation track of the Arab Health conference, and highlighted SEAD as part of IPHID's health innovation work. Additionally, ran a half-day workshop on implementing innovation, including case study on one of our SEAD innovators (ClickMedix).	1/28/14	1/29/14	Abu Dhabi	Dubai
IC Beyond the Pitch: Denver	IC hosted their quarterly Beyond the Pitch event, continuing to promote the global health track. Five companies with international development impact pitched at the event, and two of those have potential for global health impact.	2/11/14	2/11/14	Denver, CO	USA
Sankalp East Africa Forum	Dinner on Healthcare Innovation: Co-Hosted Sankalp East Africa Dinner on Healthcare Innovation with ANDE, USAID East Africa, OCA, SEAD: Invited 50 corporate, government, entrepreneurs and investors in the healthcare innovation space to a dinner in Nairobi. Benefits included engaging key players in the healthcare space in East Africa- start to future conversations on collaboration opportunities. SEAD also leveraged the time and travel of two IC GHAB members who attended the Sankalp meeting and participated in the dinner event.	2/12/14	2/13/14	Nairobi	Kenya

	Panel Discussion: Krishna Udayakumar participated on a panel discussion at the Forum on unconventional and disruptive technology interventions for healthcare, which provided an opportunity to discuss SEAD's work in supporting innovation.				
Duke Sustainable Business & Social Innovation (SBSI) Conference: Shaping the Future Through Innovation	Co-Sponsored the Duke Sustainable Business & Social Innovation (SBSI) Conference: Shaping the Future Through Innovation. On February 12, 2014, SEAD co-sponsored the annual Duke SBSI Conference, and contributed to the planning and facilitation of the global health panel (Global Health: Pioneering advancements to reach the bottom of the pyramid).	2/12/14	2/12/14	Durham, NC	USA
Social Entrepreneurship 101 Workshop	Co-Led student Social Entrepreneurship 101 Workshop: Since Duke students outside of the Business School have little opportunity to formally learn about the frameworks behind social entrepreneurship,	3/1/14	3/1/14	Durham, NC	USA
Future of Healthcare Conference	Special address highlighting SEAD, IPIHD, and DIHI's complementary work supporting global health innovation. See transcript: http://www.future-of-healthcare.org/Transcript-of-Role-of-Innovation-in-Achieving-Universal-Access-to-healthcare.aspx . IPIHD also co-authored a white paper with McKinsey on role of innovation in supporting universal access (see in publications).	3/3/14	3/4/14	New Delhi	India

1.1.2. Publications

The following articles were published during this reporting period:

Publication Title	Publisher (Journal, etc.)	Author(s)	Publication Date	Link/DOI
Fundraising for Global Health Social	CASE i3 Report	Cruikshank, Clark, Bartlett	March 2014	http://sites.duke.edu/casei3/files/2014/03/CASEi3_Fundraising_Report_.pdf

Enterprises: Lessons from the Field				
(Leveraged) Impact Investing 2.0 series: Case studies on Business Partners Limited (BPL) in South Africa and the SEAF SME Sichuan Investment Fund	InSight at Pacific Community Ventures, CASE at Duke University, and ImpactAssets	Clark, Emerson, Thornley	February 2014	http://www.pacificcommunityventures.org/impinv2/
(Leveraged) Role of Innovation in Achieving Universal Access to Healthcare	White Paper for Future of Healthcare Conference	IPIHD, McKinsey	February 2014	See attached in Appendix 6
(Leveraged) What can the UK learn from healthcare innovation in India?	Thought Paper	Health Foundation	February 2014	http://www.health.org.uk/publications/what-can-the-uk-learn-from-healthcare-innovation-in-india/ .

1.1.3. Communications

Communication	Description	Date	Link
Blog	Blogs introducing SEAD Cohort 2 innovators	February-march 2014	http://www.dukesead.org/1/post/2014/01/fixing-global-healthcare-one-innovative-model-at-a-time.html http://www.dukesead.org/1/post/2014/03/sead-symposium-innovator-highlights-round-1.html http://www.dukesead.org/1/post/2014/03/sead-symposium-innovator-highlights-round-2.html
Blog	Pitching Investors in Global Health: Funding Lessons from Social Entrepreneurs. By Cathy Clark and Lila Cruikshank.	3/18/14	http://www.huffingtonpost.com/cathy-clark/pitching-investors-in-

	Posted on the Huffington Post.		glo_b_4983238.html
Blog	Mysteries of Social Marketing Revealed (Mostly). By Sylvia Sable. Posted on Next Billion.	1/6/14	http://nextbillion.net/blogpost.aspx?blogid=3667
Blog	(Leverage) Success in Impact Investing Through Policy Symbiosis. By Ben Thornley, Cathy Clark, and Jed Emerson. Posted on Huffington Post.	2/27/14	http://www.huffingtonpost.com/ben-thornley/success-in-impact-investi_b_4849740.html

I.1.4. Travel

The following international travel using full or partial HESN funding occurred during this reporting period:

Location (City, Country)	Number of Travelers	Partner(s) Engaged (if applicable)	USAID Engagement (if applicable)	Purpose	Outcome(s) & Next Steps
Merida, Mexico (Feb 17-21)	1 Anne Katharine Wales	SEAD innovators, corporate partners	N/A	Facilitated Panel on Corporate Partnerships at 4th Annual Latin American Impact Investment Forum (FLII)	Facilitated a panel discussion with SEAD innovators and corporate partners (CEMEX, FEMSA) on key partnership lessons, advice. Used opportunity to identify new pipeline organizations and created strong partnerships for innovator looking to expand into Mexico. Also built relationships with key investors in the Latin American market as well as other accelerator programs for cross-learning opportunities.
Nairobi, Kenya (Feb 10-14)	1 Krishna Udayakumar		USAID/East Africa	Co-Host Sankalp East Africa Dinner on Healthcare Innovation with ANDE, USAID East Africa, OCA, SEAD; Meet with USAID/East Africa about the proposed	Continuing to refine the SOW for SEAD's deeper engagement in East Africa with the USAID/East Africa Mission.

1.1.5. Solutions (Creation, Testing, Scaling)

The following innovations, technologies, and approaches were supported during this reporting period:

N/A

Name	Type (innovation, technology, approach)	Phase (developed, piloted, adopted, scaled, evaluated)	Beneficiaries Reached (i.e. 10s, 100s, 1000s, more)	Focal Country or Region(s)	Description

1.1.6. Datasets

Below are datasets, and new data-related technologies, tools, approaches, and best practices that were provided or made accessible to USAID or development stakeholders by the Development Lab during the reporting period:

N/A

Title	Description	To whom was made it available?

1.1.7. Student Engagement

The following student courses or seminars were conducted or developed during this reporting period:

Course Title	Description of Status	Institution

Social Entrepreneurship 101 Workshop	Conducted SE101 Workshop, in collaboration with Duke's I&E Initiative, DSISE, and CASE, to introduce students across a variety of disciplines to the frameworks and concepts of SE, with a particular focus on global health.	Duke University
Bass Connections - SEAD	Awarded & to be launched in Fall 2014. SEAD faculty applied for and were awarded a project through Duke's high-profile Bass Connections to increase our understanding of the drivers of scale for health-focused social entrepreneurs and the impact of these organizations in improving the health and healthcare of their target populations. Students will have an opportunity to work with social entrepreneurs to perform health market research and evaluate marketing strategies. Recruitment for this project will take place in Fall 2014.	Duke University
Design For Impact Course	SEAD, in collaboration with Duke I & E, is in discussions with faculty around the university about developing an interdisciplinary graduate-level "Innovate for Impact" course focused on global health needs.	Duke University
Design Thinking for MBAs Workshop	SEAD collaborated with CASE and the Fuqua Design & Innovation in Business Club to develop a workshop targeted to MBA students that will expose them to the tools of human-centered design, with a particular focus on social impact and health. The workshop is scheduled to take place in April 2014.	Duke University (Fuqua)
Bass Connections – Chlorhexadine for Umbilical Cord Care	Awarded & to be launched in Fall 2014. (Catalyzed by a SEAD-promoted collaboration between Duke's Jeff Moe and GH/CAII) Through a year-long class (Sep 2014 - May 2015) and field trip to Kenya (~ May 2015), students will work with Jeff Moe, Fuqua/DGHI and Nimmi Ramanujam (Pratt/DGHI) to explore global health topics, analyze CHX for Cord Care gaps and propose solutions to problems identified through their research. The course will cover general topics regarding global health, economic analysis of innovations like CHX for cord care, manufacturing and distribution of drugs and devices in and for resource poor settings; orientation to CHX and Kenya in preparation for the May 2015 field trip. Funding in support of student engagement and travel may be available.	Duke University
Bass Connections – Technology	Awarded & to be launched in Fall 2014. (SEAD providing	Duke University

& Innovation Policy Lab	support) The Technology & Innovation Policy Lab combines Duke expertise on innovation policy and global development to advise development agencies on novel intellectual property (IP) strategies applicable to their growing investments in innovation for development. The Policy Lab will conduct empirical case studies of the business models, intellectual property strategies and regulatory context of innovators for development in both developed and developing countries. Students will enroll in a Practicum Course in the 2014-15 academic year. Students will work in teams linking professional students with graduate and undergraduate students in engineering, social sciences and the humanities.
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The following fellowship and internship programs and field practica took place during the reporting period:

Program or Practicum Name	Host Institution(s)	Program Location (City, Country)	Student Type (undergrad, masters, PhD, undergrad/grad)	Description
Fuqua Client Consulting Practicum	Wits Health Consortium	Johannesburg, South Africa	MBA	Students conducted a field visit in March to work directly with the client on their mHealth maternal health program.
Fuqua Client Consulting Practicum	Imperial Health Sciences	Johannesburg, South Africa	MBA	Students conducted a field visit in March to work directly with the client on a business plan to scale their clinic-in-a-box model.

Note that fellowships, as defined by HESN as more than one month in a developing country, generally take place over the summer break. The two field practica listed below are global-health related projects through the FCCP program.

Part 2: Intra-Development Lab/ University Engagement

2.1. Interdisciplinary Collaboration

Faculty Engagement: SEAD spent significant time in Q1 2014 holding 1:1 meetings with key faculty across Duke to educate them on the SEAD innovators, understand their areas of focus for research and identify internal existing resources that could support SEAD curriculum development (i.e. performance management, nurse training).

Specific Innovator Collaboration: Continue to facilitate learning opportunities/collaboration between Duke hospital and an innovator. Collaborations include weekly cross-learning calls between doctors, co-development of a sub-specialty program, development of an educational conference, opportunity for in- person exchange.

Interdisciplinary Student Engagement: SEAD promoted interdisciplinary engagement among students through the SE101 Workshop, SEAD Case Competition (where the large majority of teams were interdisciplinary), and work to develop the interdisciplinary SEAD Bass Connections program.

2.2. Partner Engagement

The following partners were engaged during the reporting period:

Partner	Partnership Funded (Funded, In kind, Unfunded)	Location (City)	Location (Country)	Relevant Activity Number(s) (if applicable)	Outcome(s)
Investors' Circle	Funded	Durham, NC	USA	I.1 (Obj 1.3)	Continued to build global health track for impact investing.

Part 3: High Value Areas of Collaboration [HVAC] (HESN Lab-to-HESN Lab)

3.1. Summary of Collaboration Across the HESN

3.1.1. Data

Partner HESN Lab	Activity Number	Completed / Ongoing	Outcome(s)
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	(if applicable)	Activity
AidData		Ongoing Made arrangements for Alena Stern to connect with SEAD innovators, Duke students, and Duke faculty when she is in Durham on April 2 nd , and share AidData's work and look for collaboration opportunities.

3.1.2. Solutions (Creation, Testing, Scaling)

Partner HESN Lab	Activity Number (if applicable)	Completed / Ongoing Activity	Outcome(s)
N/A			

3.1.3. Student Engagement

Partner HESN Lab	Activity Number (if applicable)	Completed / Ongoing Activity	Outcome(s)
AidData		Ongoing Made arrangements for Alena Stern to connect with SEAD innovators, Duke students, and Duke faculty when she is in Durham on April 2 nd , and share AidData's work and look for collaboration opportunities.	

Additionally, one member of the SEAD team attended the Berkeley DIL Conference in Washington, DC in March 2014.

Part 4: USAID Engagement

4.1. USAID/Washington Interactions

The SEAD team continued to engage regularly with the core HESN team and Global Health Bureau advisors (CAII) throughout Q2 ; SEAD also actively engaged the HESN and CAII teams around the Summit design and planning, and identified a range of ways for various USAID representatives to participate. Additionally, Fuqua Professor Jeff Moe continued to work with David Milestone of GH/CAII and a Fuqua student to explore scaling of chlorhexadine. Professor Moe was able to build upon the momentum to apply for a Bass Connections program to continue this work, which was awarded (<https://globalhealth.duke.edu/projects/chlorhexadine-umbilical-cord-care>) and is highlighted in Section I.1.7.

SEAD plans to continue this close engagement with USAID in Q3, and hopes to have the opportunity to meet with other Bureaus and Offices during the Lab Directors' meeting in April. SEAD also plans to engage the HESN team and other high-level USAID representatives in the SEAD Summit and Symposium in April.

4.2. USAID Mission Interactions

USAID/ East Africa Mission

SEAD Co-PI Krishna Udayakumar visited Kenya in February, and met with the USAID/East Africa Mission to discuss and refine the scope of work for the SEAD engagement in that region. SEAD incorporated that feedback into a revised proposal, including a plan for performance monitoring. Additionally, SEAD co-hosted the Sankalp East Africa dinner on healthcare innovation along with USAID/East Africa.

USAID/India Mission

SEAD had multiple interactions with USAID India mission in March 2014 focused on opportunities for SEAD to collaborate more substantively with USAID India mission, including participation in future local events.

Part 5: Monitoring & Evaluation

5.1. Progress Narrative

SEAD is on track to meet the M&E targets for the reporting period. As we have now finalized our Program Evaluation measures, we will plan to propose a few tweaks to the PMP to align with these measures – particularly with respect to measures related to the performance of the SEAD innovators. Additionally, as mentioned in previous reports, the timing for the USAID PMP reporting does not align with the survey timelines for

the SEAD program, so we can either change the quarters in which we report, or rather report older information. For the SEAD indicator Gin2, attribution of innovator performance improvements to SEAD, we are unable to report in this reporting period because the survey with that question will be going to the innovators in May.

Additionally, for the HESN Gin1 indicator, *Total dollar value of outside (non-USAID) resources utilized to the dollar value of USAID investments*, the changes presented/clarified by USAID in an April call will require us to recalculate our target; we will also continue to determine how to calculate leverage given the different interpretation that we had been using previously. For non-financial leverage, we would like to report the collaboration between the Duke Eye Center clinicians and SEAD SE salaUno, which included a site visit in November and ongoing consulting. This non-financial leverage is not captured in the disaggregation on the M&E template because only numbers were allowed in the cell.

Goal-level HESN indicators are listed below; other objective-level HESN indicators, as well as custom SEAD indicators, appear in the M&E reporting template.

HESN Ref. (if applicable)	Indicator	FY Target	FY Actual	± % Deviation from Target	Explanation
Gin1	Total dollar value of outside (non-USAID) resources utilized to the dollar value of USAID investments	N/A	378688	N/A	Target is no longer applicable, given change in definition, and may need to readjust Q1-Q2 number. Non-financial leverage also includes collaboration with Duke Eye Center Clinicians to support salaUno.
Gin7	# of US students via HESN partners serving as fellows in developing countries (for more than one month)	30	0		Fellowships (one month or longer) occur during the summer. SEAD is on track to reach its annual target for fellowships.

Part 6: Lessons Learned / Best Practices

- Overall, our application form for capturing information about potential participants in the 2nd cohort captured much of the data we needed, but we will likely want to alter future applications to get better data on the current state of an organization’s innovation in terms of usage and customers.
- Given SEAD’s role of coordinating projects across a variety of stakeholders, we further realized the need to effectively tailor messages to different audiences and the importance of playing a “translator” role across these stakeholders. As a specific example, the information that is of interest to faculty about innovators is quite different than the information that is of interest to investors or corporates.
- Coming out of our pilot year, we realized that the SEAD curriculum required additional structure to ensure greater consistency of the experience across innovators and to drive greater collaboration and utilization of resources across the SEAD team, university, and partners. Our refinements to the curriculum reflect these learnings.
- To involve innovators in Duke courses or student projects, we need to engage them at least 2 months before the courses start to get full involvement. This involves scoping specific projects to meet class needs and setting expectations appropriately on the innovator side in terms of expected time commitment, final deliverables, etc.
- SEAD was thrilled to be able to offer the USAID/HESN Summer Internships to students, and there was great interest from around the university. Since the internships were unpaid, it was a challenge to attract students; while a number of programs, largely undergraduate, do offer some funding for students to take on unpaid internships over the summer, many students were not able to access funding because we were unable to plan ahead for the internship program. If USAID/HESN plans to offer the internships again for 2015, it would be helpful to know as soon as possible so we can work within our own budget and with the various schools and programs to identify potential sources of funding.

Part 7: Future Activities

- Host SEAD Summit and Symposium April 2-4 in Durham.
- Launch 5 summer MBA internships with innovator organizations.
- Send a team of undergraduate students to India to make a short documentary on an IPIHD innovator.
- Publish white paper on business strategies in emerging markets, a knowledge brief on anti-counterfeiting solutions for the global health supply chain, and a video and written guide on implementing process improvement strategies.
- Conduct site visits with SEAD team to new innovators in E. Africa and India.
- Develop engagement plans for the next year for SEAD innovators.
- Begin developing and cataloging additional resources for the SEAD curriculum.
- Begin to refine our innovator selection process for the 3rd cohort.
- Launch call for applications for Duke faculty to receive small SEAD research grants.

Part 8: Appendices

- Appendix 1: SEAD Cohort 2 Profiles
- Appendix 2: SEAD Innovator Intake Form
- Appendix 3: SEAD Proposal Curriculum Map
- Appendix 4: Agenda for IC Beyond the Pitch: Denver event.
- Appendix 5: SEAD Program Evaluation Framework & Modules
- Appendix 6: McKinsey-IPIHD Innovation for Universal Access

THE INNOVATORS

Arogya Finance

Financing

The Need: Traditional bank loans in India are only accessible to those who can provide periodic salary payments or other assets as collateral. This excludes most Indians, especially the poor and informally employed. If they are unable to borrow from family, they either borrow from moneylenders, often at interest rates of 60% or more, or go without care until health conditions become an emergency. This leads to catastrophic healthcare spending, which drives 30 million Indian citizens into poverty each year.

The Innovation: Using a new model for measuring credit worthiness and risk, Arogya Finance provides medical loans to the poor and informally employed population. Lending decisions can be made within three hours, rather than the seven to ten day wait of most traditional banks. This speed is critical in health emergencies. If approved, the Arogya pays the hospital or doctor directly and treatment can begin immediately.

The Impact: Launched in 2011, Arogya Finance has partnered with 50 hospitals and healthcare service providers across India and processed 320 loans. The default rate is 2%. They plan to expand to provide 30,000 loans in the next three years.



The Innovators

Forus Health

Health Workforce & Technology

The Need: India has 12 million blind people and over 80% of these cases are due to treatable conditions, such as cataracts, diabetic retina, glaucoma, cornea issues and refraction problems. However, a critical shortage of providers means that millions are unable to access treatment and go blind, unnecessarily.

The Innovation: Forus Health provides an innovative platform utilizing affordable technology solutions that can be easily used by minimally trained technicians, making healthcare more accessible and scalable. Forus Health's flagship product is 3nethra, an intelligent, affordable, portable eye-screening device that allows a health worker to screen a patient in less than 5 minutes for five major eye conditions. The 3nethra device is portable, can be operated easily, and can be deployed in remote areas. Mobile connectivity allows for immediate remote diagnosis by specialists, enabling them to provide care in the remotest areas without leaving their offices.

The Impact: The 3nethra eye-screening device has a three-pronged impact. It augments and expands the reach of existing health systems, creates employment for rural entrepreneurs, and renews the economic prospects and livelihood of those living with preventable blindness. The 3nethra has is currently used in 220 systems across 14 countries and has since screened 600,000 eyes worldwide.



THE INNOVATORS

LifeNet

Franchise

The Need: Lack of affordable, high-quality basic health care services in remote low- and middle-income populations in Burundi due to last-mile distribution challenges.

The Innovation: LifeNet identifies and recruits church-based clinics into their franchise conversion program designed to improve quality, encourage growth through financing mechanisms, and train nurses to provide care, manage pharmaceutical supplies, and run their clinic using economies of scale created by the franchise.

The Impact: LifeNet currently operates a network of 42 clinics across Burundi with each serving between 30 and 150 patients per day. All 42 clinics saw a total of approximately 50,000 patients per month in August and September of 2013. Quality Score Card measures, created using Ministry of Health and USAID/Smiling Sun Health Services quality indicators, had increased by 140%, 138% and 49% in Cohorts 1 through 3 respectively by the end of September 2013. 90% of LifeNet partners had positive earnings in September, 2013.



North Star Alliance

Provider

The Need: Populations such as truck drivers and sex workers facing increased health risks, as well as rural communities, systematically experience limited (and often no) access to health care.

The Innovation: North Star converts shipping containers to repurposed mini-clinics. These Roadside Wellness Centers (RWC) are semi-mobile and rapidly reproducible primary care and STD/STI centers staffed with a local health care worker and behavioral change communication specialist. North Star uses a sophisticated technology system, COMETS, to track health trends and identify optimal locations for RWCs and to allow patients to access their records at any clinic.

The Impact: North Star currently operates 29 RWCs in East, West, and Southern Africa, and in 2012 delivered treatment, testing, and counseling to 219,681 people. North Star plans to double the number of people served by 2015.



THE INNOVATORS

SughaVazhvu

Provider

The Need: The majority of India's population (70%) lives in rural villages, with limited to no access to healthcare services. Rural India also faces a rising chronic disease burden and a lack of preventive services. For most rural Indians, quality medical care is not affordable or accessible.

The Innovation: The SughaVazhvu model provides technology-enabled, evidence-based primary healthcare through a network of clinics in rural Indian villages. SughaVazhvu trains health workers of varying levels of education and licensure to utilize protocol-based medicine and technological innovations, building the skills of the existing rural healthcare workforce. SughaVazhvu also conducts community-based risk screening, subscription-based disease management, and community engagement. A rapid-risk assessment allows them to identify high-risk populations for chronic conditions such as diabetes and hypertension. The data analytic capability built in to their health information system allows SughaVazhvu to monitor population-level health outcomes.



SughaVazhvu
Healthcare

The Impact: SughaVazhvu currently runs a network of seven clinics that reach a population of 70,000 individuals. SughaVazhvu clinics have provided primary healthcare services to 40,000 patients and conducted community-based risk screening for diabetes and hypertension among 6,000 adults. SughaVazhvu plans to establish 100 new clinics, reaching 500,000 new patients, in the next 3 years.

The Innovators

Swasth India

Provider

The Need: With 80% of health expenditures in India paid out-of-pocket, health catastrophes are the single largest cause of poverty in the country and India's urban poor are particularly at risk. They are two to three times more likely than rural poor to experience non-communicable diseases, the second largest cause of death in India.

The Innovation: Swasth India operates a chain of primary care centers in urban slums and adjacent low-income areas. Their one-stop-shop model provides primary and preventive care for half the cost of prevailing market rates. Each Swasth Health Center provides services in a 150 square-foot facility, offering access to a family doctor, rapid diagnostics on site, discounts on drugs, referrals with discounts, and electronic health records.



The Impact: Swasth India reduces healthcare spending in three ways: 1) a 50% reduction in out-of-pocket costs; 2) prevention and early diagnosis of non-communicable diseases; and 3) locating clinics in the communities of the urban poor, reducing indirect costs for patients, such as travel. Swasth currently operates eight Health Centers in Mumbai slums. Over the next three years, Swasth plans to expand to 60 Health Centers, reaching 75% of Mumbai's poor and saving patients USD \$2.5 million.

SEAD Innovator Intake Form: Interview Guide

INTERVIEW OBJECTIVES

- Learn more about the organization's business model and current stage of development
- Understand their perceptions of current challenges and areas where they're looking for help

I. Introduction & Context of Interview (2 mins)

Provide a bit of background on why we are doing this call and how we will use the answers to their questions to shape our support for them.

II. Background (5 mins)

1. Please tell us a bit about you, your organization, the social need you're trying to address, the population you intend to serve, and the solution your organization is offering?

III. Strategic Resources (10 mins)

2. Please tell us a bit about your growth goals and where you want the organization to be in three years? Please also tell us some of the challenges you foresee and the aspects you're most unsure about?
PROBES: What specifically are you trying to accomplish in the next few months? What do you hope the organization looks like in 36 months? Do others on your team have a shared sense of the organization's near and long-term priorities?
3. Please tell us a bit about the funding needs you anticipate, if any, related to these goals?
PROBES: What are the financial goals of your organization (e.g. cover costs, earn some profits, earn significant profits)? How has the organization been funded to date (in terms of revenue sources and types)? Do you have a financial model that you are comfortable with? Have you identified target funders for your work? Have you begun any conversations with these funders?
4. On a scale of 1-5 how much support would you like from SEAD related to strategic planning and funding?

IV. Performance Management (3 mins)

5. Do you currently track any metrics for internal monitoring or external reporting of performance?

PROBES: What are you tracking? Who are you reporting to and with what frequency? How comfortable are you with your current systems and reporting?

6. On a scale of 1-5 how much support would you like from SEAD related to performance management?

V. Product Service/Innovation Development (5 mins)

7. Have you done any work or do you plan to do any work to refine your understanding of your target market and their needs?

PROBES: What approaches have you taken to learn about your customers' needs? Have you ever developed a formal marketing plan?

8. On a scale of 1-5 how much support would you like from SEAD related to marketing and customer analysis?

VI. Organizational Capacity (5 mins)

9. How comfortable are you with your current organizational capacity and your ability to hire the staff you anticipate needing in the future?

PROBES: What gaps in skills and/or HR systems do you currently have? What plans do you have to address these? What does your leadership team currently look like in terms of roles and experience/background of the individuals in those roles?

10. On a scale of 1-5 how much support would you like from SEAD related to staff training and development?

VII. Ecosystem Development (5 mins)

11. What types of partners/connections would be most helpful for you as you're looking to achieve your growth targets?

12. What other accelerators/capacity building programs have you been involved with and/or are you currently involved with?

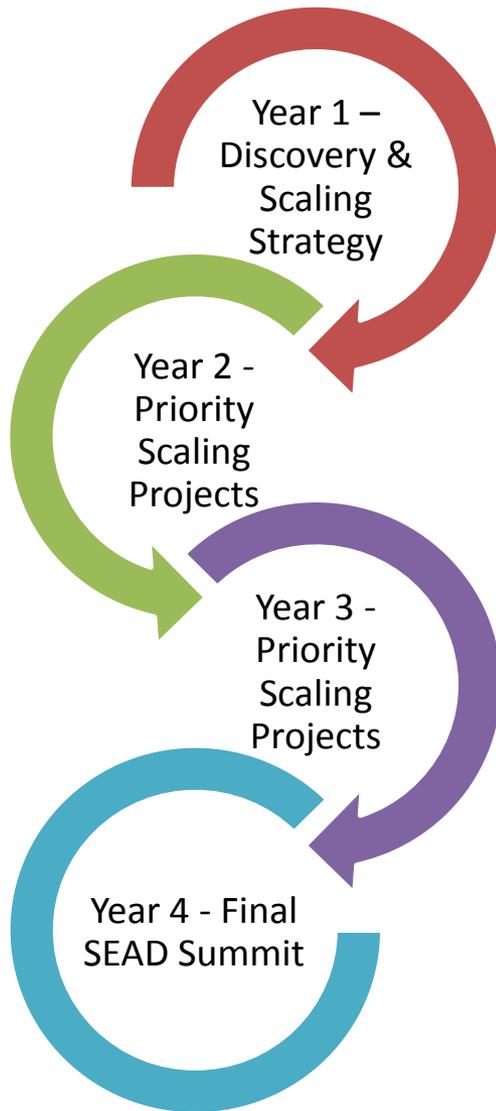
13. On a scale of 1-5 how much support would you like from SEAD related to structuring and developing partnerships?

VIII. Wrap-Up (5 mins)

14. What other growth questions or clinical/technical questions have we not covered that you are hoping to get support from SEAD with?

15. At the SEAD Summit, we're asking innovators to sign up to present on one thing for 5 minutes that they'd like to share with others (something they're really good at or something that you've piloted that's really interesting)
What would you like to share?

SEAD's Proposed Curriculum Model



- All SEAD participants will receive a combination of pre-defined and custom programming.
- Involvement in SEAD will be overseen by an “engagement manager” who will connect with individual participants every 4 - 6 weeks
- SEAD programming will focus on the different common challenges noted on the previous slide
- In the first year, customized support will be focused on helping participants develop/refine their scaling strategies.
- The intensity of custom support in years two and three will be dependent on progress/ engagement in year one.
- SEAD participants will be expected to engage in: regular check-ins, annual SEAD summit, site visits with the SEAD team, SEAD program evaluation surveys, Regional events/conferences
- SEAD participants will also receive access to: online tools and resources, facilitated connections to partners and funders, collaboration projects with students, faculty, and SEAD partners

SEAD's Proposed Curriculum Map (illustrative examples)

Area of Focus	FULL- GROUP	INDIVIDUAL PARTICIPANTS	
	Tools , Resources, & Events	Individualized Support	Custom Projects
	<i>Delivered via webinars, in-person events, and an online platform</i>	<i>Delivered via standard processes & based on milestones along the way</i>	<i>Provided as available and on an opportunistic basis</i>
Strategic Planning	<i>Strategic Planning Frameworks</i>	<i>Scaling Strategy Consultation</i>	<i>Research projects and/or collaborations with IPIHD strategic partners, faculty, and others in our network</i>
Funding & Investment	<i>Investment Readiness Toolkits</i>	<i>Practice Pitch Sessions</i>	
Performance Management	<i>Duke Six Sigma Training</i>		
Product/Service Innovation Development	<i>Behavior Change Workshop</i>		
Organizational Leadership & Talent	<i>Duke Nurse Training Online Class</i>		
Leveraging the Ecosystem	<i>IPIHD Annual Forum</i>	<i>Facilitated connections to corporate partners</i>	

8:00 AM | BREAKFAST

8:45 AM | COMPANY PRESENTATIONS

Agenda for: Beyond the
pitch: Impact Denver
Tuesday, February 11, 2014

-   Zagster
-   SivaCycle
-   Polyglot
-   Tutti Dynamics
-   CSRHUB
-   GreenWizard
-    Sundolier
-    KuliKuli

BREAK

-   SmarterCookie
-   BeneStream
-   Transparent Health Group
-   Waste Farmers
-   Ecotonix
-    Labor Voices
-    aWhere
-    Sunfunder: update from an IC company

Presenters are creating positive impacts in the following areas:

-  Environment
-  Education
-  Health
-  Technology
-  Energy
-  Job Creation
-  Sustainable Ag
-  Global

12:25 PM | COMPANY SHOWCASE

1:15 PM | LUNCH

2:45 PM | DEAL DEBRIEF *(Investors only)*

| ENTREPRENEUR WORKSHOP *(Entrepreneurs only)*

With workshop hosts Moye White and B Lab

5:15 PM | DUE DILIGENCE KICK-OFF

6:15 PM | NETWORKING RECEPTION



INVESTORS'CIRCLE

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BUSINESS DEVELOPMENT Jill Newbold | jnewbold@investorscircle.net

**Excerpt from Submission to Duke University Institutional Review Board
SEAD Research: Program Evaluation Components**

1. Research Design

Duke researchers will be supplying technical assistance and consulting to organizations involved with offering global health services and solutions as part of the Social Entrepreneurship Accelerator at Duke (SEAD) initiative. The first meeting with representatives of these organizations will take place in early April of each year. Each organization will be enrolled in SEAD for three years and we will plan to follow up with organizations on their progress after the end of the third year, up until the project end date, December 2017. Prior to this first meeting, we would like to obtain information about their organizations so that we can tailor our advice to their specific needs. Then subsequently, we would like to obtain the same information on each organization once or twice per year, depending upon the question module (explained below), for three years to gauge their success in the SEAD program.

Global health organizations are challenged with becoming more efficient and effective at delivering their solutions and scaling them up to have greater impact. By learning more about their current needs and situations, we should be able to provide them with better advice and guidance in achieving their missions. We should also be able to determine the extent to which the SEAD program is able to help them achieve their missions.

An online survey questionnaire (**Appendix 1**), to be completed using Qualtrics, will be sent to the individuals representing the organizations that have agreed in advance to be part of the cohort of SEAD in early April of each of the three years that they participate in the SEAD program. This survey will help measure the organization’s acumen and standing in several business metrics, as well as performance related to finances, business strategy, organizational development and mission.

Also in April of each year, we will ask a representative of each organization to participate in a focus group, which will be facilitated by a member of the SEAD team and will coincide with the annual SEAD meeting that his held at Duke (Facilitation guide can be found in **Appendix 2**). The focus group will solicit feedback on each organization’s experience with the SEAD program to date and changes that can be made to make the SEAD experience more worthwhile.

A follow-up survey questionnaire (**Appendix 3**), also to be completed using Qualtrics, will be sent to the individuals representing each SEAD organization twice per year in April and September, respectively for three years to assess their mid-year performance in the SEAD program. Because the survey is asking for information related to the SEAD experience, the survey will not be sent to each innovator in the first year until September (i.e., organizations in their first year of SEAD will be excluded from the first survey cycle in April). The questionnaire will ask the organizational representatives to rate the SEAD program across different program areas.

Table 1. Timeline of administering each of the two questionnaires, and one focus group, for each year of the SEAD project (questionnaire appendices noted in the boxes).

	4/14	9/14	4/15	9/15	4/16	9/16	4/17	9/17
Cohort 1	1, 2, 3	3	2	3				
Cohort 2	1	3	1, 2, 3	3	1, 2, 3	3		
Cohort 3			1	3	1, 2, 3	3	1, 2, 3	3

In so far as we are supplying technical assistance and consulting to the SEAD organizations, we are only gathering information, no interventions are being done. However, we will be using the aforementioned questionnaires and focus groups to obtain information on the success of each organization and assessing the degree to which our assistance/consulting influences their success.

2. Subject Selection

Individuals representing organizations that have agreed in advance to be part of the cohort of SEAD, and who have agreed to attend the meeting in early April, will be asked to complete the questionnaires and attend the focus groups. There are currently 11 organization in cohort 1 (enrolled January 2013), and 6 organizations in cohort 2 (enrolled January 2014). We expect between 6-8 organizations to be enrolled in the third and final cohort in January 2015.

3. Risk/Benefit Assessment

There are no physical risks associated with the study. There is some risk that confidential information about how organizations have been functioning (including financial information) might be revealed to others, but all efforts will be made to keep that information within the SEAD team and only group averages would ever be reported in reports or publications. No SEAD organization will be identified in reports or publications.

4. Confidentiality

Only the PI and CITI certified investigators (listed on the protocol) will see the results of this survey and be able to identify respondents. The data will be stored in password-protected computers owned by the PI and the investigators. The data will be stored on one server at the Duke Global Health Institute and one server at the International Partnership for Innovator Healthcare Delivery (IPIHD) and will not be available to anyone other than the investigators. With this data collection, only means and percentages will be calculated and reported.

5. Compensation

None. However, we will be providing consulting services after completing the questionnaire.

6. Informed Consent

Please see the introductory text to each of the three appendices.

7. Deception

N/A

8. Debrief

N/A

Appendix 1. Survey of SEAD Innovators' Organizational and Business Acumen and Organizational Outcomes

[first page of Qualtrics form will have the following text/question]

Dear Innovator,

We are delighted that you are a part of the Social Entrepreneurship Accelerator at Duke (SEAD). In order for us to better understand your organization and challenges in scaling impact, we ask that you complete the following survey. Throughout the survey, please aim to be as objective and honest as possible. The survey contains separate sections for scaling impact and effectiveness, and financial and organizational sustainability.

Your answers on this survey are critical to helping the SEAD team tailor our coaching sessions and other work for each of your organizations. The data will also be used by the SEAD team to assess the effectiveness of the SEAD program in meeting its objectives. The data, in summary form, may also be used in research reports and papers on scaling health organizations.

We request that you complete the survey by **XX Month 20XX**. The survey should take approximately **60** minutes to complete, and you will be able to save your responses at any point in the survey and finish at a later time. All responses will be saved for up to two weeks after beginning the survey.

Please note that the completion of this survey is completely voluntary. Some of the questions we ask you as part of this survey may make you feel uncomfortable. You may refuse to answer any questions and you may take a break at any time during the study. You may stop your participation in the study at any time. There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed. Furthermore, no information about individual organizations will be shared outside the SEAD team. The only data that would ever be reported to outside parties would be group averages or breakdowns.

If you have any questions, please contact one of the principal investigators on the SEAD program, Dr. Krishna Udayakumar (Krishna.udayakumar@duke.edu), or Cathy Clark (catherine.h.clark@duke.edu). You may also contact the Duke University Institutional Review Board at ors-info@duke.edu for any questions about your rights as a participant in this study.

On behalf of the entire SEAD team, we thank you for your participation and substantial contribution to SEAD.

SEAD Team

Please check the box below if you consent to participate

I consent to participate

I do not consent to participate

For all questions, the reporting period refers to calendar year 2013 (Jan – Dec 2013). If your organization reports on a different calendar and you are unable to convert your numbers to calendar year 2013, please report throughout the survey on your most recent completed reporting year.

Are you able to provide information about organizational performance and funding based on calendar year 2013 (Jan – Dec 2013)?

(Y/N)

If not, what months and years correspond to the most recent reporting period for which your organization can report?

[Box – choose month and year start and month and year finish]

I. Scaling Impact and Effectiveness

1. How many unique clients / customers / beneficiaries did your organization serve during the reporting period? Number _____
2. How many unique clients/customers/beneficiaries does your organization hope to serve (i.e., target) during the next reporting period (i.e. the reporting period immediately following the one for which you are now reporting)? Number _____

3. Reach of target population:

Which of the following populations does your organization currently serve?

For those it does serve, please indicate the priority you place on reaching this population (1 = lowest priority, 5 = highest priority). Please also indicate what number of the organization’s clients came from each of these populations during the reporting period, and what number of unique first-time clients came from each of these populations during the reporting period? (Note that the categories do overlap.)

Population	Priority level (1 to 5)	Number of unique clients during reporting period	Number of first-time unique clients during reporting period
Children and adolescents			
People with disabilities			
Minorities or previously-excluded populations			
Women			
(subset) Pregnant women			
Low-income/poor			
Other ()			

3. Did your organization reach, or expand reach, to any new geographic areas (e.g., countries, provinces, cities, etc.) during the reporting period?
(Y/N)
4. If yes, what are the geographic areas and corresponding numbers of unique first-time clients during the reporting period?

New Geographic Area(s)	# unique first-time clients
-------------------------------	------------------------------------

	during reporting period

5. Scaling Strategy: Listed below are four categories of scaling strategy. Please indicate whether your organization has focused any effort into each of these scaling strategies during the last reporting period by answering “Yes” or “No.” If you answer “Yes” to more than one category, please prioritize the chosen strategies with a number from 1 up to 4:

Scaling Strategy	Y/N	Priority
Direct Scaling: Scaling by Going Deep – serving more people, with more products, or at higher levels of quality directly through our current operations. (e.g., offering new products/services)		
Direct Scaling: Scaling by Going Broad/Branching – serving more people by expanding operations to new locations. (e.g., expanding to new countries)		
Indirect Scaling: Scaling through Affiliation : setting up partnerships or distribution relationships with other entities to reach new customers and beneficiaries (e.g., partnering with local NGOs to sell low-cost eyeglasses)		
Indirect Scaling: Scaling through Dissemination : training others either directly or through distributed content to help others do what you do themselves. (e.g., mother2mothers was hired by the government of Kenya to train ministry of health workers in how to implement their HIV prevention program.)		

6. Please tell us in a few sentences about your scaling strategy (optional):
[text box]

7. If your organization is scaling indirectly (through affiliation or dissemination), what is the number of partnerships or dissemination relationships you have established by the end of the reporting period?

Partnerships: _____

Dissemination Relationships: _____

8. If your organization is scaling indirectly (through affiliation or dissemination), do you think that your organization is indirectly reaching a larger population through those activities, (trainings, policies, partnerships, etc.)?

(Y/N)

9. If you do think your organization is indirectly reaching a larger population through its scaling activities (affiliation or dissemination), please estimate the number of people indirectly affected by initiatives with which your organization was involved, such as policy changes, trainings, replication of model, or other such activities. Please do not include individuals that are directly affected by your organization’s activities, such as patients, customers or clients.

Number of people indirectly affected by your organization’s indirect scaling actions:

10. Some organizations within SEAD have multiple products and services, and are asking SEAD to work with them specifically on a particular product or service (i.e. rolling out a new micro-insurance plan)

as opposed to asking SEAD to work with them on the organization as a whole. Does your organization have particular product or service lines on which it will be focusing with SEAD? (Y/N)

11. If yes, please list those product or service lines of focus, and the number of clients/patients/customers that were served through the provision of those services in the last reporting period:

Product or Service of focus with SEAD	Number of Patients/Customers/Clients Served in last reporting period	Percent (%) of the organization's total revenue that is generated from this product or service		
		0-25%	25-50%	Over 50%
1.	No.	%	%	%
2.	No.	%	%	%
3.	No.	%	%	%

4. What key metrics do you use to measure performance (key outputs and/or outcomes) related to your organization's products and/or services? Examples could include: number of individuals served, volume of products/services delivered, number of unique clients, treatment success rate, etc. Please only list the top 3 priority metrics. Provide estimates (number, %, ratio, etc.) for these measures where possible, as well as what your target is for each measure during your next (future) reporting period. Please also indicate on a scale between 1 and 5 the difficulty in obtaining these data. If you do not currently use any metrics, please leave blank.

Key Performance Metric	Estimate (number) during the reporting period	Future target estimate (next reporting period)	Difficulty to obtain (1 = easiest; 5 = hardest)
[EXAMPLE] (Immunizations 0-3 yrs)	[EXAMPLE] N= 3,000	[EXAMPLE] N= 4,000	[EXAMPLE] 3
1.			
2.			
3.			

II. Organizational Sustainability

12. Organizational processes use and development

Response Guidance: For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Organizational processes use and development (e.g., decision making, planning, reviews)	Limited set of processes (e.g., decision making, planning, reviews) for ensuring effective functioning of the organization; use of processes is variable, or processes are seen as ad hoc requirements ("paperwork exercises"); no monitoring or assessment of processes	Basic set of processes in core areas for ensuring efficient functioning of organization; processes known, used, and truly accepted by only portion of staff; limited monitoring and assessment of processes, with few improvements made in consequence	Solid, well-designed set of processes in place in core areas to ensure smooth, effective functioning of organization; processes known and accepted by many, often used and contribute to increased impact; occasional monitoring and assessment of processes, with some improvements made	Robust, lean, and well-designed set of processes (e.g., decision making, planning, reviews) in place in all areas to ensure effective and efficient functioning of organization; processes are widely known, used and accepted, and are key to ensuring full impact of organization; continual monitoring and assessment of processes, and systematic improvement made		

13. Technological infrastructure - databases and management reporting systems

Response Guidance: For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Technological Infrastructure – databases and management reporting systems	No systems for tracking clients, staff volunteers, program outcomes and financial information	Electronic databases and management reporting systems exist only in few areas; systems perform only basic features, are awkward to use or are used only occasionally by staff	Electronic database and management reporting systems exist in most areas for tracking clients, staff, volunteers, program outcomes and financial information; commonly used and help increase information sharing and efficiency	Sophisticated, comprehensive electronic database and management reporting systems exist for tracking clients, staff, volunteers, program outcomes and financial information; widely used and essential in increasing information sharing and efficiency		

14. Organizational Governance and oversight (1):

We would like to know what kind(s) of external oversight or advisory structures your organization has. Please indicate whether or not your organization has any of the following structures.

Structure	Does this structure exist for

	your organization? (Y/N)
Board	
Other External Oversight or Advisory Committee/Structure	
Other (___)	

[If yes, then answer #8]

15. Governance and oversight (2): OCAT Board Involvement and Support *(response from both Innovators & SEAD team)*

If your organization has a board or external advisory/oversight structure, please indicate below its level of involvement and support. Response Guidance: For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Board/Advisory Structure Involvement and Support	Provide little direction, support, and accountability to leadership; board not fully informed about 'material' and other major organizational matters; largely "feel-good" support	Provide occasional direction, support and accountability to leadership; informed about all 'material' matters in a timely manner and responses/decisions actively solicited	Provide direction, support and accountability to programmatic leadership; fully informed of all major matters, input and responses actively sought and valued; full participant in major decisions	Provide strong direction, support, and accountability to programmatic leadership and engaged as a strategic resource; communication between board and leadership reflects mutual respect, appreciation for roles and responsibilities, shared commitment and valuing of collective wisdom		

16. Organizational planning

Response Guidance: For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Organizational Planning	Organization runs operations purely on day-to-day basis with no short- or longer-term planning activities; no experience in operational planning	Some ability and tendency to develop high-level operational plan either internally or via external assistance; operational plan loosely or not linked to strategic planning activities and used roughly to guide operations	Ability and tendency to develop and refine concrete, realistic operational plan; some internal expertise in operational planning or access to relevant external assistance; operational planning carried out on a near-regular basis; operational plan linked to strategic planning activities and used to guide operations	Organization develops and refines concrete, realistic, and detailed operational plan; has critical mass of internal expertise in operational planning, or efficiently uses external, sustainable, highly qualified resources; operational planning exercise carried out regularly; operational plan tightly linked to strategic planning activities and systematically used to direct operations		

17. In the table below, please indicate the total number of full time and part time staff that were employed by your organization at the end of the reporting period for each staffing category (Please exclude contract workers who are not on the business' official payroll).

Category	Number of full-time staff at the end of the reporting period (If none, enter 0)	Number of part-time staff at the end of the reporting period (If none, enter 0)
Senior Management		
Clinical staff/Caregivers		
Other		

18. In the table below, please indicate the total number of full time and part time staff that departed/left the company during the reporting period for each staffing category (Please exclude contract workers who are not on the business' official payroll).

Category	Number of full-time staff that left during reporting period (If none, enter 0)	Number of part-time staff that left during the reporting period (if none, enter 0)
Senior Management		
Clinical staff/Caregivers		
Other		

19. OCAT: Staffing levels

Please determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Staffing Levels	Many positions within and peripheral to organization (e.g., staff, volunteers, board, senior management) are unfilled, inadequately filled, or experience high turnover and/or poor attendance	Most critical positions within and peripheral to organization (e.g., staff, volunteers, board, senior management) are staffed (no vacancies), and/or experience limited turnover or attendance problems	Positions within and peripheral to organization (e.g., staff, volunteers, board, senior management) are almost all staffed (no vacancies); few turnover or attendance problems	Positions within and peripheral to organization (e.g., staff, volunteers, board, senior management) are all fully staffed (no vacancies); no turnover or attendance problems		

III. Financial Sustainability

We realize that the below questions related to your organization’s finances are sensitive. All responses to these, as well as all questions on this survey, will be kept strictly confidential with the core SEAD team and will only be shared either:

- in the aggregate, in a manner that sufficiently de-identifies an individual organization
- in terms of percentage of growth, not actual figures (such as 10% of SEAD entrepreneurs had more than 5% growth in net income)

20. Diversity of funding

Response Guidance: For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Funding Model	Organization highly dependent on a few funders, largely of same type (e.g., government or foundations or private individuals)	Organization has access to multiple types of funding (e.g., government, foundations, corporations, private individuals) with only a few funders in each type, or has many funders within only one or two types of funders	Solid basis of funders in most types of funding source (e.g., government, foundations, corporations, private individuals); some activities to hedge against market instabilities (e.g., building of endowment); organization has developed some sustainable revenue generating activity	Highly diversified funding across multiple source types; organization insulated from potential market instabilities (e.g., fully developed endowment) and/or has developed sustainable revenue-generating activities; other organizations try to imitate your fund-raising activities and strategies		

21. We would like to understand how your revenue, expenses, and net profit have changed from the previous reporting period to this most recent reporting period. Please first indicate whether these numbers have increased or decreased compared to the previous year, and then indicate the percentage by which they have increased or decreased compared to the previous year.

	Increase or decrease from previous reporting	Percentage change from previous reporting
--	--	---

	period?	period?
Revenue	<i>[drop down – increase or decrease]</i>	<i>[percentage]</i>
Expenses		
Net Profit		

22. We would like to understand the dollar ranges into which your total revenues, expenses, and net profit fit during the reporting period.

	Less than \$100,000	\$100,000-\$250,000	\$250,001-\$500,000	\$500,001 - \$1 million	\$1 million - \$3 million	\$3 million +
Revenue						
Expenses						
Net Profit						

23. We would like to understand your current mix of funding sources that are considered part of revenue for the reporting period. Please first indicate your total annual funding (\$US) during the reporting period. Then, in the table below, please indicate the sources from which you received funding during the reporting period and note which were the top three sources in terms of dollar amount (with 1 being the greatest). Optional: Please list the percent of total funding that each of the funding sources represents.

Total Annual Funding for Reporting Period: \$ _____

Funding Source	Received funding from source during reporting period? (Y/N)	Top three sources during reporting period, with 1 being greatest	OPTIONAL: Percent of total annual funding (%) in reporting period
Payment from Patients and Individuals for Products and Services			%
Payment from Governments (or public health/insurance schemes) for Products and Services			%
Payment from Businesses for Products and Services			%
Payments/Reimbursements from Private Insurance Systems			%
Government Grants			%
Grants from Foundations and NGO's			%
Donations from Corporations			%
Donations from Private Individuals			%
Equity Investment Financing			%
Debt Financing			%
Other			%

24. We would like to understand your organization's financing and support during the reporting period, and what proportion of each category you were able to secure (but not necessarily spend) during the reporting period. Additionally, we would like to know the amount of financing and support that you sought during the reporting period, regardless of whether you obtained it.

Financing	Actual US dollars (\$) <i>secured</i> during reporting period	Total US Dollar Amount sought in the reporting period
Equity Financing	\$US	\$US
Philanthropic Support	\$US	\$US
Debt Financing	\$US	\$US
Other Financing	\$US	\$US

VI. SEAD Program Evaluation Output Questions

The following questions are related to each of the Challenge areas that you are currently working on with SEAD.

For each row, determine the description most suitable for the point in time in which you are completing the survey. Mark the box that is closest to describing the situation at hand; descriptions will rarely be perfect. Interpret the text loosely when necessary and keep in mind that you are trying to score your organization on the continuum of "1" to "4." If a row is not relevant to your organization, designate the row "N/A"; if you simply have no knowledge, mark the row "N/K."

Strategic Planning

	1 Clear need for increased capacity	2 Basic level of capacity in place	3 Moderate level of capacity in place	4 High level of capacity in place	N/A	N/K
Overall Strategy	Strategy is either nonexistent, unclear, or incoherent (largely set of scattered initiatives); strategy has no influence over day-to-day behavior	Strategy exists but is either not clearly linked to mission, vision, and overarching goals, or lacks coherence, or is not easily actionable; strategy is not broadly known and has limited influence over day-to-day behavior	Coherent strategy has been developed and is linked to mission and vision but is not fully ready to be acted upon; strategy is mostly known and day-to-day behavior is partly driven by it	Organization has clear, coherent medium- to long-term strategy that is both actionable and linked to overall mission, vision, and overarching goals; strategy is broadly known and consistently helps drive day-to-day behavior at all levels of organization		
Strategic Planning	Limited ability and tendency to develop strategic plan, either internally or via external assistance; if	Some ability and tendency to develop high-level strategic plan either internally or via	Ability and tendency to develop and refine concrete, realistic strategic plan; some	Ability to develop and refine concrete, realistic and detailed strategic plan; critical mass of internal		

	strategic plan exists, it is not used	external assistance; strategic plan roughly directs management decisions	internal expertise in strategic planning or access to relevant external assistance; strategic planning carried out on a near-regular basis; strategic plan used to guide management decisions	expertise in strategic planning, or efficient use of external, sustainable, highly qualified resources; strategic planning exercise carried out regularly; strategic plan used extensively to guide management decisions		
Planning Systems	Planning happens on an ad hoc bases only and is not supported by systematically collected data	Planning done regularly and uses some systematically collected data	Regular planning complemented by ad hoc planning when needed; some data collected and used systematically to support planning effort and improve it	Regular planning complemented by ad hoc planning when needed; clear, formal systems for data collection in all relevant areas; data used systematically to support planning effort and improve it		

Performance Management

Performance Measurement	Very limited measurement and tracking of performance; all or most evaluation based on anecdotal evidence; organization collects some data on program	Performance partially measured and progress partially tracked; organization regularly collects solid data on program activities and outputs (e.g., number of children served) but	Performance partially measured and progress partially tracked; organization regularly collects solid data on program activities and outputs (e.g., number of children served) but	Well-developed comprehensive, integrated system (e.g., balanced scorecard) used for measuring organization's performance and progress on continual	N/A	N/K
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	activities and outputs (e.g., number of children served) but has no social impact measurement (measurement of social outcomes, e.g., drop-out rate lowered)	lacks data-driven, externally validated social impact measurement	lacks data-driven, externally validated social impact measurement	basis, including social, financial, and organizational impact of program and activities; small number of clear, measurable, and meaningful key performance indicators; social impact measured based on longitudinal studies with control groups, and performed or supervised by third-party experts		
Goals/Performance Targets	Effective internal and external benchmarking occurs but driven largely by top management and/or confined to selected areas; learnings distributed throughout organization, and often used to make adjustments and improvements	Realistic targets exist in some key areas, and are mostly aligned with aspirations and strategy; may lack aggressiveness, or be short-term, lack milestones, or mostly focused on “inputs” (things to do right), or often renegotiated; staff may or may not know and adopt targets	Quantified, aggressive targets in most areas; linked to aspirations and strategy; mainly focused on “outputs/outcomes” (results of doing things right) with some “inputs”; typically multiyear targets, though may lack milestones; targets are known and adopted by most staff who usually use them to broadly guide work	Limited set of quantified, genuinely demanding performance targets in all areas; targets are tightly linked to aspirations and strategy, output/outcome-focused (i.e., results of doing things right, as opposed to inputs, things to do right), have annual milestones, and are		

				long-term nature; staff consistently adopts targets and works diligently achieve them		
Performance Analysis and Program Adjustments	Few external performance comparisons made; internal performance data rarely used to improve program and organization	Some efforts made to benchmark activities and outcomes against outside world; internal performance data used occasionally to improve organization	Effective internal and external benchmarking occurs but driven largely by top management and/or confined to selected areas; learnings distributed throughout organization, and often used to make adjustments and improvements	Comprehensive internal and external benchmarking part of the culture and used by staff in target-setting and daily operations; high awareness of how all activities rate against internal and external best-in-class benchmarks; systematic practice of making adjustments and improvements on basis of benchmarking		

Customer Usage/Demand

To what extent do you agree with the following statements?

We have a clear understanding of the different customer segments we are targeting in the market in which we operate and how we fit into this market overall.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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We have the skills and capabilities to determine customer usage and demand for our products/services, and run effective trials and tests with data and information that can allow us to refine our approach and model.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Unit Economics

We have a clear understanding of our unit economic model in a way that makes our model effective and sustainable as we scale.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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We have been able to build a financial model which allows us to test different types of cost allocation as we scale our model, and have the capabilities and systems to continue this effort.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Senior Leadership Development

Impact Orientation of Senior Leadership	Focused purely on social impact; financials viewed as an unfortunate constraint; fails to deliver impact consistently; delays decision making; reluctant to change status quo; mandates rather than leads change	Focused on social impact with some appreciation for cost-effectiveness when possible; constantly delivers satisfactory impact given resources; promptly addresses issues; understands implications and impact of change on people	Sees financial soundness as essential part of organizational impact, together with social impact; focuses on ways to better use existing resources to deliver highest impact possible; has a sense of urgency in addressing issues and rapidly moves from decision to action;	Guides organization to succeed simultaneously in dual mission of social impact and optimal financial efficiency; constantly seeks and finds new opportunities to improve impact; anticipates possible problems; has sense of urgency about upcoming challenges; communicates	N/A	N/K
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			develops and implements actions to overcome resistance to change	compelling need for change that creates drive; aligns entire organization to support change effort		
Management team and staff – dependence on CEO/executive director	Very strong dependence on CEO/executive director; organization would cease to exist without his/her presence	High dependence on CEO/executive director; organization would continue to exist without his/her presence, but likely in a very different form	Limited dependence on CEO/executive director; organization would continue in similar way without his/her presence but areas such as fund-raising or operations would likely suffer significantly during transition period; no member of management team could potentially take on CEO/ED role	Reliance but not dependence on CEO/ executive director; smooth transition to new leader could be expected; fund-raising and operations likely to continue without major problems; senior management team can fill in during transition time; several members of management team could potentially take on CEO/ED role		

Cultivating/Retaining Internal Talent

Human Resources management – management recruiting, development, and retention	Standard long-term job placement in place without considering managerial development; no or very limited training, coaching, and feedback;	Some tailoring of development plans for brightest stars; personal annual reviews incorporate development	Recruitment, development, and retention of key managers is priority and high on CEO/executive director’s agenda; some tailoring in development plans for brightest stars;	Well-planned process to recruit, develop, and retain key managers; CEO/executive director takes active interest in managerial development; individually tailored development	N/A	N/K
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	no regular performance appraisals; no systems/processes to identify new managerial talent	plan for each manager; limited willingness to ensure high-quality job occupancy; some formal recruiting networks are in place	relevant training, job rotation, coaching/feedback, and consistent performance appraisal are institutionalized; genuine concern for high-quality job occupancy; well connected to potential sources of new talent	plans for brightest stars; relevant and regular internal and external training, job rotation, coaching/feedback, and consistent performance appraisal are institutionalized; proven willingness to ensure high-quality job occupancy; well-connected to potential sources of new talent		
Human Resources management – general staff recruiting, development, and retention	Standard career paths in place without considering staff development; limited training, coaching and feedback; no regular performance appraisals; no systems/processes to identify new talent	No active development tools/ programs; feedback and coaching occur sporadically; performance evaluated occasionally; limited willingness to ensure high-quality job occupancy; sporadic initiatives to identify new talent	Limited use of active development tools/programs; frequent formal and informal coaching and feedback; performance regularly evaluated and discussed; genuine concern for high-quality job occupancy; regular concerted initiatives to identify new talent	Management actively interested in general staff development; well-thought-out and targeted development plans for key employees/positions; frequent, relevant training, job rotation, coaching/feedback, and constant performance appraisal institutionalized; proven willingness to ensure high-quality job occupancy; continuous, proactive initiatives to identify new talent		

Internal Organizational Processes for Growth

Technological Infrastructure – databases and management reporting systems	No systems for tracking clients, staff volunteers, program outcomes and financial information	Electronic databases and management reporting systems exist only in few areas; systems perform only basic features, are awkward to use or are used only occasionally by staff	Electronic database and management reporting systems exist in most areas for tracking clients, staff, volunteers, program outcomes and financial information; commonly used and help increase information sharing and efficiency	Sophisticated, comprehensive electronic database and management reporting systems exist for tracking clients, staff, volunteers, program outcomes and financial information; widely used and essential in increasing information sharing and efficiency	N/A	N/K
Organizational Design	Organizational entities (e.g., headquarters, regional and local offices) are not “designed,” and roles, responsibilities of entities are neither formalized nor clear; absence of organization chart	Some organizational entities are clearly defined, others are not; most roles and responsibilities of organizational entities are formalized but may not reflect organizational realities; organization chart is incomplete and may be outdated	Organizational entities are clearly defined; all roles and responsibilities of organizational entities are formalized but do not necessarily reflect organizational realities; organization chart is complete but may be outdated	Roles and responsibilities of all organizational entities (e.g., headquarters, regional and local entities) are formalized, clear and complement each other; organization chart is complete and reflects current reality		

Communicating Clearly

To what extent do you agree with the following statements?

We are effective at communicating what we do to our key stakeholders and constituencies.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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We have been successful at informing the individuals we seek to serve about the value of our products/services for them.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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We have clear messages that we wish to communicate to our main groups of stakeholders, and understand what resonates effectively with each group:

a) patients/direct clients, b) investors and funders, c) government and health system

a.) patients/direct clients

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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b.) investors and funders

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

c.) government and health system

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Awareness of and Leveraging Ecosystem

Monitoring of landscape	Minimal knowledge and understanding of other players and alternative models in program area	Basic knowledge of players and alternative models in program area but limited ability to adapt behavior based on acquired understanding	Solid knowledge of players and alternative models in program area; good ability to adapt behavior based on acquired understanding, but only occasionally carried out	Extensive knowledge of players and alternative models in program area; refined ability and systematic tendency to adapt behavior based on understanding	N/A	N/K
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Partnerships and Alliances	Limited use of partnerships and alliances with public sector, nonprofit, or for-profit entities	Early stages of building relationships and collaborating with other for-profit, nonprofit, or public sector entities	Effectively built and leveraged some key relationships with few types of relevant parties (for-profit, public, and nonprofit sector entities); some relations may be precarious or not fully “win-win”	Built, leveraged, and maintained strong, high-impact relationships with variety of relevant parties (local, state, and federal government entities as well as for-profit, other nonprofit, and community agencies); relationships deeply anchored in stable, long-term, mutually beneficial collaboration		
Influencing of policy making	Organization does not have ability or is unaware of possibilities for influencing policy-making; never called in on substantive policy-discussions	Organization is unaware of its possibilities in influencing policy-making; some readiness and skill to participate in policy-discussion, but rarely invited to substantive policy discussions	Organization is fully aware of its possibilities in influencing policy-making and is one of several organizations active in policy-discussions on state or national level	Organization pro-actively and reactively influences policy-making, in a highly effective manner, on state and national levels; always ready for and often called on to participate in substantive policy discussion and at times initiates discussions		

Accessing Funding/Investment

Fund-Raising	Generally weak fund-raising skills and lack of expertise (either internal or access to external	Main fund-raising needs covered by some combination of internal skills and expertise, and	Regular fund-raising needs adequately covered by well developed internal fund-raising skills, occasional access to	Highly developed internal fund-raising skills and expertise in all funding source types to cover all regular	N/A	N/K
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	expertise)	access to some external fund-raising expertise	some external fund-raising expertise	needs; access to external expertise for additional extraordinary needs		
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Strength of business model

To what extent do you agree with the following statements?

Your **Current** business model:

Is SUSTAINABLE (we could keep our organization going at its current size for the foreseeable future)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Is SCALABLE (few changes are necessary to grow our organization to several times its current size)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Is ROBUST (not especially vulnerable to normal changes in economic and social conditions)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
----------------	-------	---------	----------	-------------------

Is ALIGNED WITH OUR SOCIAL MISSION GOALS (few changes are necessary to achieve our desired social impact)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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Appendix 2. SEAD Focus Group Facilitation Guide

OBJECTIVES

- Obtain information on the SEAD process for each of the SEAD mechanisms
- Understand perceptions of challenges and successes related to the mechanism to contribute to SEAD's formative evaluation

CONSENT:

[Facilitator will recite and distribute the below form to all focus group participants prior to beginning each session and ask for informed consent in order to participate. If anyone does not provide consent, they will be asked to leave the room.]

This meeting is being audio recorded to facilitate note taking and to ensure that we capture all of the feedback provided today. Once the audio tape is reviewed, its contents will be destroyed. No one outside of the immediate SEAD team will have access to this recording. Please indicate now if you have any concerns about this audio recording. [Wait for response]

Thank you for agreeing to participate in today's focus group meeting. Today we are going to be discussing the SEAD program and what aspects of the program you have found to be the most and least useful for your organization. We will use information gathered during this meeting to improve the SEAD program, so please be as honest as you can. This focus group will last approximately 1 hour.

Participation in this discussion is completely voluntary. Some of the questions we ask you as part of this discussion may make you feel uncomfortable. You are under no obligation to participate if you do not wish and you may stop your participation in the discussion at any time. There are no physical risks associated with this discussion. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed. While we may include general issues raised during this meeting in reports or publications, neither your name, nor the name of your organization, will ever be used in any publication.

If you have any questions, please contact one of the principal investigators on the SEAD program, Dr. Krishna Udayakumar (Krishna.udayakumar@duke.edu), or Cathy Clark (catherine.h.clark@duke.edu). You may also contact the Duke University Institutional Review Board at ors-info@duke.edu for any questions about your rights as a participant in this focus group.

Thank you for your participation,

SEAD Team

Please check the box below if you consent to participate

I consent to participate

I do not consent to participate

Name: _____

Name of your organization: _____

Facilitation Guidance:

Following the consent and introduction, repeat the questions in Sections II and III for each of the following SEAD mechanisms (referred to as “activities” below):

1. Peer learning events/webinars
2. Expert-led events/webinars
3. Fundraising pitch practices/sessions
4. Facilitated direct connections/networking
5. Faculty/student projects
6. Coaching/mentoring
7. Linkages to tools/resources that are part of the SEAD knowledge base

I. Introduction & Context of Interview/Focus Group (2 mins)

Provide a bit of background on why we are conducting this interview/focus group, and how we will use the answers to their questions to feed into our program evaluation.

II. Participation (5 mins)

1. Please tell us about the types of staff members (i.e. senior management, middle management, clinical, etc) who were the primary participants or liaisons in [activity] through SEAD.
PROBE: Looking back, would you have preferred to engage other staff members from your organization in [activity], and if so, who?
2. Please tell us about the obstacles, if any, to participating/engaging in [activity] (e.g. SE’s schedules, SEAD’s schedules, technology, personalities of SEAD staff).
PROBE: How can these obstacles be addressed?

III. General Feedback (3 mins)

3. Please tell us about any specific aspects of [activity] that you found particularly helpful, and why.
4. Please tell us about any specific aspects of [activity] that you found particularly unhelpful, and why.
5. *PROBE:* What could be done to make these aspects more helpful?
6. Please tell us if there is anything you would change about the way this [activity] was performed.

IV. Wrap-Up (5 mins)

7. Is there anything else that you would like to share about the way that the SEAD program has been implemented?

Appendix 3. Survey Questionnaire on Innovators' Perceptions of SEAD Experience

[first page of Qualtrics form will have the following text/question]

Dear Innovator,

We are delighted that you are a part of the Social Entrepreneurship Accelerator at Duke (SEAD). We would like to ask you to provide feedback to us on your overall experience in the SEAD program, as well as specific questions related to each of the challenge areas with which SEAD has worked with you. This information will help us to improve the SEAD program, and will also help us to determine whether SEAD has contributed, in part, to your success. Throughout the survey, please aim to be as objective and honest as possible.

We request that you complete the survey by **XX Month 20XX**. The survey should take approximately **45** minutes to complete, and you will be able to save your responses at any point in the survey and finish at a later time. All responses will be saved for up to two weeks after beginning the survey.

Please note that the completion of this survey is completely voluntary. Some of the questions we ask you as part of this survey may make you feel uncomfortable. You may refuse to answer any questions and you may take a break at any time during the study. You may stop your participation in the study at any time. There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your information confidential; however, this cannot be guaranteed. Furthermore, no information about individual organizations will be shared outside the SEAD team. The only data that would ever be reported to outside parties would be group averages or breakdowns.

If you have any questions, please contact one of the principal investigators on the SEAD program, Dr. Krishna Udayakumar (Krishna.udayakumar@duke.edu), or Cathy Clark (catherine.h.clark@duke.edu). You may also contact the Duke University Institutional Review Board at ors-info@duke.edu for any questions about your rights as a participant in this study.

On behalf of the entire SEAD team, we thank you for your participation and substantial contribution to SEAD.

SEAD Team

Please check the box below if you consent to participate

I consent to participate

I do not consent to participate

Name: _____

Name of your organization: _____

SEAD Program Evaluation Questions – Module 4

[Section 1] We are going to ask you questions that are specifically related to each organizational challenge that you and SEAD staff addressed during the past year...

Strategic planning

Please indicate the extent to which you were looking for help from SEAD in the area of **Strategic planning?**

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Strategic planning**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Performance management

Please indicate the extent to which you were looking for help from SEAD in the area of **Performance**

management:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Performance management**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
---	---	---	---

SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.
---	---	---	--

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Customer usage/demand

Please indicate the extent to which you were looking for help from SEAD in the area of **Customer usage/demand**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Customer**

usage/demand. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Unit economics

Please indicate the extent to which you were looking for help from SEAD in the area of **Unit economics**?

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Unit economics**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less

Peer learning events/webinars	<input type="checkbox"/>							
Expert-led events/webinars	<input type="checkbox"/>							
Fundraising pitch practices/sessions	<input type="checkbox"/>							
Facilitated directed connections/networking	<input type="checkbox"/>							
Faculty/student projects	<input type="checkbox"/>							
Coaching/mentoring	<input type="checkbox"/>							
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>							

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Senior leadership development

Please indicate the extent to which you were looking for help from SEAD in the area of **Senior leadership development**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Senior leadership development**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed	<input type="checkbox"/>								

connections/networking								
Faculty/student projects	<input type="checkbox"/>							
Coaching/mentoring	<input type="checkbox"/>							
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>							

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Cultivating/retaining internal talent

Please indicate the extent to which you were looking for help from SEAD in the area of **Cultivating/retaining internal talent**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Cultivating/retaining internal talent**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Internal organizational processes for growth

Please indicate the extent to which you were looking for help from SEAD in the area of **Internal organizational processes for growth**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Internal organizational processes for growth**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Communicating clearly

Please indicate the extent to which you were looking for help from SEAD in the area of **Communicating clearly**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Communicating clearly**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary	SEAD played a large role in helping us achieve progress in addressing this challenge, but there	SEAD was entirely responsible for our progress in addressing this challenge.

	factor.	were other factors.	
--	---------	---------------------	--

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

Awareness of and leveraging ecosystem

Please indicate the extent to which you were looking for help from SEAD in the area of **Awareness of and leveraging ecosystem**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Awareness of and leveraging ecosystem**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch practices/sessions	<input type="checkbox"/>								
Facilitated directed connections/networking	<input type="checkbox"/>								
Faculty/student projects	<input type="checkbox"/>								
Coaching/mentoring	<input type="checkbox"/>								
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>								

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD’s engagement with you on addressing this challenge?

Accessing funding/investment

Please indicate the extent to which you were looking for help from SEAD in the area of **Accessing funding/investment**:

1-not at all	2	3- neutral	4	5-significant help
<input type="checkbox"/>				

In the table below, we have included the activities that SEAD employed to help address the challenge: **Accessing funding/investment**. Based on this list, please check the box below that best corresponds to the degree with which you think each SEAD activity was helpful in addressing this challenge for your organization. In the last three columns, please also indicate whether you think the SEAD staff should have worked with you more or less on each mechanism to address this challenge.

Mechanism	N/A	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful	Should SEAD have done...		
							More	Just right	Less
Peer learning events/webinars	<input type="checkbox"/>								
Expert-led events/webinars	<input type="checkbox"/>								
Fundraising pitch	<input type="checkbox"/>								

practices/sessions								
Facilitated directed connections/networking	<input type="checkbox"/>							
Faculty/student projects	<input type="checkbox"/>							
Coaching/mentoring	<input type="checkbox"/>							
Linkages to tools/resources that are part of the SEAD knowledge base	<input type="checkbox"/>							

Now, thinking about the question above, do you attribute any progress you have made in addressing this challenge to SEAD (choose one).

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.

If other factors or other organizations played a role in helping you to make progress with this challenge, please describe. Otherwise, leave blank.

Do you have any other comments on SEAD's engagement with you on addressing this challenge?

[Section 2] Finally, we'd like you to comment on the role SEAD may have played in the performance of your organization over the past year.

To what extent do you attribute organizational performance improvements to any or all Duke/SEAD activities during calendar year 2013 (please choose one)?

1	2	3	4
SEAD was not responsible for our progress in addressing this challenge.	SEAD played a role in helping us achieve progress in addressing this challenge, but was not the primary factor.	SEAD played a large role in helping us achieve progress in addressing this challenge, but there were other factors.	SEAD was entirely responsible for our progress in addressing this challenge.



THE FUTURE OF HEALTHCARE

A COLLECTIVE VISION

An initiative of The Healthcare Alliance
3rd & 4th MARCH 2014 | NEW DELHI, INDIA

Role of

Innovation

in achieving universal access
to healthcare





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Foreword

Healthcare is a puzzle that few countries have solved. For those who did get it right, the solution has come at a high cost, with no guarantee of sustainability. The ability to overcome the challenges of healthcare is an elusive but worthy goal towards universal coverage.

In India, we have had varying degrees of success in handling new healthcare initiatives. The government undertook some major steps in the recent past, such as the National Rural Health Mission (NRHM), the Rashtriya Swasthya Bima Yojna (RSBY) and the Clinical Establishments Act. The private sector has grown exponentially with more hospital groups, health insurance providers and pharmaceutical companies chipping in to help improve access to and quality of healthcare.

Despite these stellar moves, health outcomes in India rank among the worst in the world, with the dual challenge of infectious and non-communicable diseases. Traditional healthcare delivery will not be adequate to drive reform at the required scale. India's health challenges, though unique and complex, offer a remarkable opportunity for innovation. Several such innovations have emerged across the healthcare value chain with self-sustaining economic models.

This paper attempts to learn from a few successful healthcare innovations by examining the challenges faced in scaling up to full potential. This is then translated into solution themes which could address most of the challenges and enable such innovations to reach their true potential. Accelerating equity through innovation is the mantra.

Indian healthcare is poised to evolve substantially over the coming decade. We believe that social healthcare innovations are here to stay, and will become increasingly relevant for all key stakeholders – government (as payor, provider and a regulator), private providers (large, small and standalone), industry and consumers. At the same time, the use of data-driven frameworks will serve the research and innovation constituents of healthcare. We also believe that this report could be relevant to other developing economies that face similar challenges.

This is one of the most exciting times in the history of medicine. We can literally “see” inside every part of the body and cut, laser, irradiate at will; sequence the human genome; use a smart phone to conduct all kinds of vital exams and assays and then track, store, compare synthesis and treat in minutes. All this is enhanced by social, mobile, analytic and cloud technologies, enabling the environment to engage individuals like never before.

The answers are out there. We CAN achieve sustainable, equitable quality healthcare. Let's innovate. Let's transform together.

We thank McKinsey & Company for taking up this effort and providing all stakeholders with an integrated and realistic view of the opportunities and challenges.

Sangita Reddy

Chairperson, FICCI Health Services Committee, and
Executive Director, Apollo Hospitals Enterprises Limited

Acknowledgements

This white paper is a collaborative effort by the International Partnership for Innovative Healthcare Delivery (IPIHD) and McKinsey & Company, India.

Dr. Chirag Adatia, an Engagement Manager in McKinsey & Company's Delhi office, led the effort to bring this whitepaper to fruition. The core team comprised Sasha Vesuvala and Rohan Chinchwadkar, consultants from McKinsey's Delhi and Mumbai offices respectively. Prashanth Vasu, a Principal in the Chennai office, guided the overall project along with Nicolaus Henke, a Director, and Thomas Kibasi, a Principal, both from the firm's London office. We also thank the entire McKinsey team that shaped this paper into its present form: Nipun Gosain and J. Sathya Kumar for their assistance with visual graphics; Anamika Mukharji for her editorial support; Aparna Malaviya and Lotika Mehta for their assistance with external relations; and Neha Nayak, an Engagement Manager in our Mumbai office, who wove together the entire paper in its home stretch.

Our sincere gratitude to Dr. Krishna Udayakumar, Sarah Gelfand, Andrea Taylor and Richard Bartlett of the IPIHD, who shared valuable insights and initial information about the many innovators featured in this whitepaper.

We are grateful to FICCI for helping and supporting us throughout this journey.

Inputs and stories from many individuals and entrepreneurs enriched this paper. For this, we thank Sundeep Kapila, Swasth India; Dr. Sabahat Azim, Glocal; Karuna Jain, Acumen; Shashank Rastogi, Centre for Innovation Incubation and Entrepreneurship at Indian Institute of Management, Ahmedabad; Darshan Nayak, Stanford India Biodesign; PR Ganapathy, Villgro; Abhishek Sen, Biosense; Vijay Simha, OneBreath; Satya Prakash Dash, Biotechnology Industry Research Assistance Council; Pedro Yrigoyen, MediCall Home; Ting Shih, Click Medix; Zack Oloo, Changamka; Gunther Faber, One Family Health; Jasmin Patel, Aarin Capital; Vikram Rajan, The World Bank; and Mihir Shah, UE Lifesciences.

Executive summary

Approximately 85 per cent of the world's population lives in developing or under-developed countries.¹ Severe challenges in health outcomes in these countries place human health at risk. Gaps in intermediate health system indicators (awareness, access, affordability and quality) underlie these challenges. India faces similar challenges across access (a 28 per cent diagnosis rate across major diseases), affordability (high out-of-pocket expenditure at 61 per cent) and quality (80 per cent of rural infrastructure is below standards). While additional resources are necessary to bridge these gaps, merely throwing resources at the challenges will be inadequate. Thus, innovation in healthcare is the need of the hour.

Across developing countries, many innovations deliver impact across the value chain, from preventive to diagnostic to curative services (primary, secondary, tertiary) to rehabilitative care. These ventures draw their innovation from one of three sources: providing financial access, delivering care through new business models, or innovating to increase access to care. Despite their huge potential, most of these innovations succeed only locally. This is due to multiple challenges, ranging from those inherent in their business model to more ecosystem-driven issues.

Our study of the healthcare innovation landscape throws up seven major (not exhaustive) challenges to scaling up: the inadequate number of innovations given the size of the challenge; the product or service offering design suited only to local conditions; the time taken to design a viable and scalable model; the lack of early demand stimulus and adoption; the dearth of true, "social-focused" capital; the regulatory challenges; and fragmented distribution channels.

The question that needs answering is: what will it take to overcome these challenges and transform these innovations from being just excellent to also being relevant at scale?

We have identified five solution themes to address these challenges:

- Providing financial impetus for scale up
- Delivering capability impetus to innovators
- Creating demand impetus from private and public delivery systems
- Providing network impetus for networking with experts
- Developing policy impetus to help innovations scale up

We have translated these into a set of 16 ideas that different stakeholders – the government, industry, academia and other relevant organisations – could drive to enable the adoption and scale-up of innovations.

* * *

India's population is facing a healthcare crisis. As the largest contributor to the world's disease burden, innovative healthcare delivery at scale is an important imperative for India to mitigate the challenge. Collaboration among all stakeholders is necessary to hasten impact. The proposed ideas, though not exhaustive, would hopefully act as powerful thought starters.

¹ United Nations Population Division, *World Population Prospects: The 2010 Revision*, medium variant (2011).

Methodology

A note on the methodology adopted in this paper:

- This paper is based on primary research: detailed interviews with entrepreneurs and innovators from across the world; incubators and accelerators that mentor them; government agencies with a mandate to fuel innovation; industry associations; and private equity/venture capital funds which invest in the healthcare space.
- We have also drawn heavily on conversations with executives from the International Partnership for Innovative Healthcare Delivery (IPIHD) and accessed their wide repository of case studies.
- McKinsey & Company's existing research on both healthcare and innovation complements all of the above facts and insights.

The choice of case studies is neither exhaustive nor are these the only examples of successful innovations in developing economies. However, they provide a panoramic view of innovations across the value chain, at different stages in the lifecycle of the business, as well as from different geographies. Additionally, the innovations studied focus on improving one of the intermediate indicators of access, affordability and quality.

The proposed 16 ideas are also not meant to be exhaustive or prescriptive, but are intended to trigger thought and hopefully action around the five major solution themes.

The case for innovation

India, which hosts one-sixth of the world's population, faces a serious health crisis. Health outcomes in India rank among the worst in the world, with the dual challenge of infectious and non-communicable diseases. Overcoming the deep issues in the underlying health ecosystem will require significant time and effort. Merely throwing resources at the challenges will not help; the traditional healthcare delivery model is likely to be inadequate to resolve the underlying system barriers. Therefore, innovation at scale is an imperative to ensure health for all.

THE HEALTH OUTCOME CRISIS

Not only are India's health outcomes and projections gloomy, the country also underperforms on most of the Millennium Development Goals (MDGs) related to healthcare (Exhibit 1.1).¹ Consider the following daunting statistics:

- 1. Dismal fundamental indicators:** The fourth and fifth MDGs aim to reduce infant mortality rate (IMR) to 27 per 1,000 live births; and to reduce maternal mortality rate (MMR) to 109 per 100,000 live births respectively. However, India ranks in the bottom decile/quartile on these two fundamental indicators. India's IMR (41 per 1,000) and MMR (140 per 100,000) are three to five times the corresponding values for China. India's under-5 mortality rate in 2015 is expected to be 50 per 1,000 against a goal of 42. Even poorer neighbours, such as Bangladesh and Nepal, perform significantly better on these indicators.
- 2. Child nutrition a major challenge:** Only one-third of children below five years of age are covered by Vitamin A supplementation. As much as 33 per cent of all children under the age of 3 years in India are expected to be moderately or severely malnourished by 2015, worse even than Sub-Saharan Africa.² Less than 6 per cent of children under the age of 2 get their daily feeding dose. While the first MDG is to eradicate extreme poverty and hunger, India appears far from achieving this goal.
- 3. Worrisome child health:** India's immunisation rates are abysmally low, at around 70 per cent (DPT – Diphtheria, Pertussis, Tetanus) today. It is more shocking that these levels have persisted since 1990, while a lower income country such as Bangladesh has driven significant improvement in this indicator and achieved a 95 per cent immunisation rate.³
- 4. Infectious diseases remain a problem:** While India has done well in battling HIV, tuberculosis figures have grown from 234 per 100,000 population in 1995 to 256 in 2010.
- 5. Non-communicable diseases add to the health burden:** Chronic diseases already contribute to over 50 per cent of India's disease burden. Low awareness levels mean people leave many of these diseases untreated. Neuropsychiatric conditions alone – generally ignored and left untreated – represent 10 per cent of the country's disease burden (Exhibit 1.2). India also has one of the world's largest diabetes populations.

All in all, India is the single-largest contributor to the global disease burden today (Exhibit 1.3).

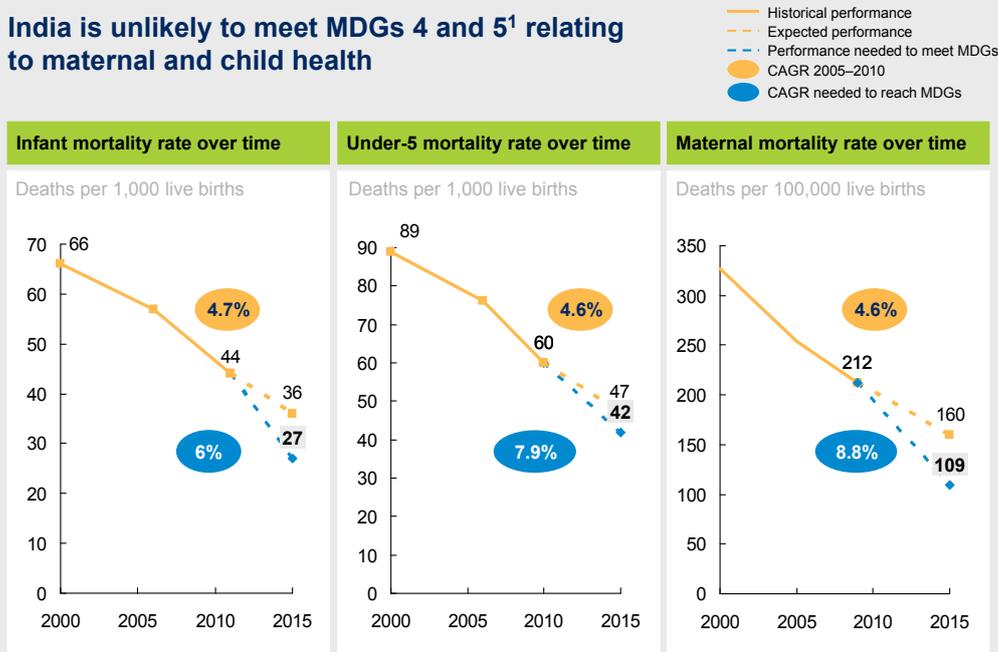
1 Ministry of Statistics and Programme Implementation, Government of India.

2 *An Uncertain Glory: India and its Contradictions* (2013), by Jean Drèze and Amartya Sen.

3 Ibid.

Exhibit 1.1

India is unlikely to meet MDGs 4 and 5¹ relating to maternal and child health



¹ Millennium Development Goals (MDGs) for reducing child mortality and improving maternal health
 SOURCE: WHO World Health Statistics 2008; India Health Statistics; NFHS-3

Exhibit 1.2

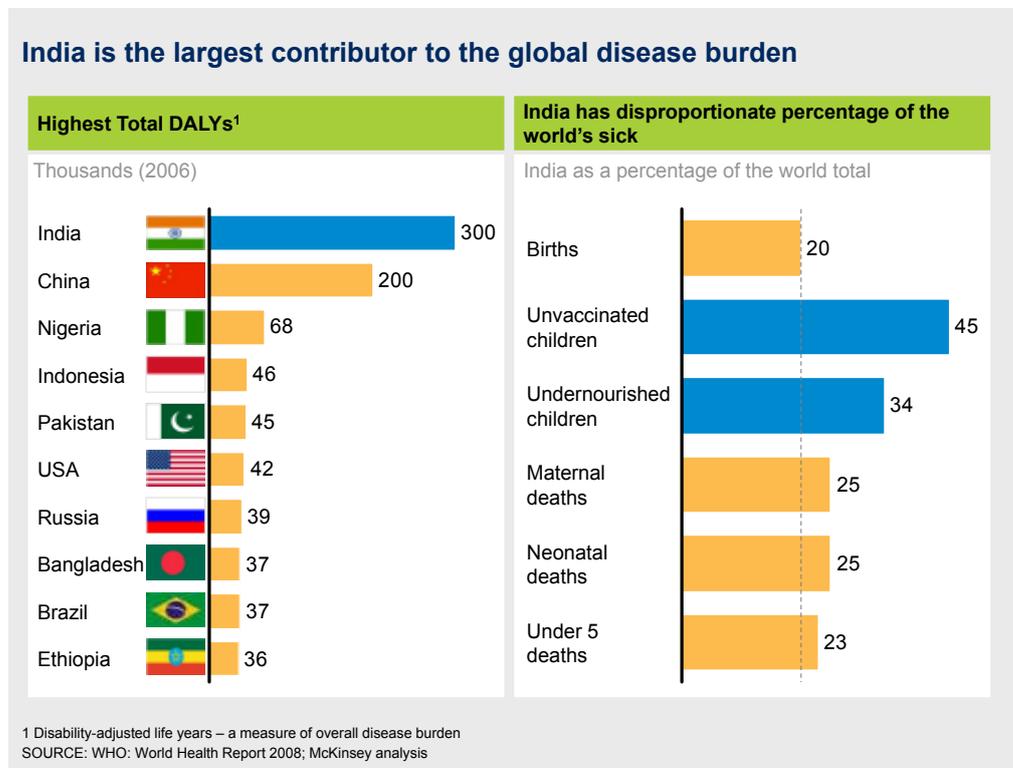
20 disease areas contribute over 80% of India's DALYs¹ burden

Disease group/health conditions	DALYs in 1,000 years	Diseases included
1 Neuropsychiatric conditions	35,981	Depression, drug use disorder, schizophrenia, etc.
2 Perinatal conditions	35,468	Prematurity, low birth weight, neonatal infections, birth asphyxia, etc.
3 Cardiovascular diseases	28,960	Ischaemic heart disease, cerebrovascular heart disease, rheumatic heart disease, inflammatory heart disease, etc.
4 Communicable respiratory infections	21,703	Lower respiratory infections (predominant), upper respiratory infections
5 Sense organ diseases	19,209	Refractive errors, hearing loss, cataracts, etc.
6 Diarrhoeal diseases	17,445	-
7 Respiratory diseases	11,198	-
8 Childhood-cluster diseases	10,570	Asthma, COPD
9 Nutritional deficiencies	9,854	Poliomyelitis, pertussis, tetanus
10 Digestive diseases	8,705	Protein energy malnutrition, iron deficiency anaemia
11 Cancer (malignant neoplasms)	8,487	Liver cirrhosis, peptic ulcer
12 Maternal conditions	8,217	Mouth and oropharynx cancers, cervix uteri cancer, leukaemia, oesophagus cancer, breast cancer
13 Tuberculosis	7,286	-
14 Congenital anomalies	5,741	-
15 Musculoskeletal diseases	4,557	-
16 HIV/AIDS	3,852	Osteoarthritis, rheumatoid arthritis
17 Tropical-cluster diseases	3,815	-
18 STDs excluding HIV	3,001	Lymphatic filariasis, Leishmaniasis
19 Genitourinary diseases	2,885	Gonorrhea, syphilis
20 Diabetes mellitus	2,701	Nephritis, nephrosis, benign prostatic hypertrophy
Others	55,478	-

¹ Disability-adjusted life years – a measure of overall disease burden
 SOURCE: WHO Burden of Disease report; expert interviews; McKinsey analysis



Exhibit 1.3



This acute health challenge warrants immediate attention. The severity of the health crisis becomes even more dramatic if one analyses the intermediate health system-level outcomes.

THE INTERMEDIATE OUTCOMES CHALLENGE

Poor health outcomes in India are driven by problems in four intermediate health-system indicators – awareness, access, affordability and quality (Exhibit 1.4).

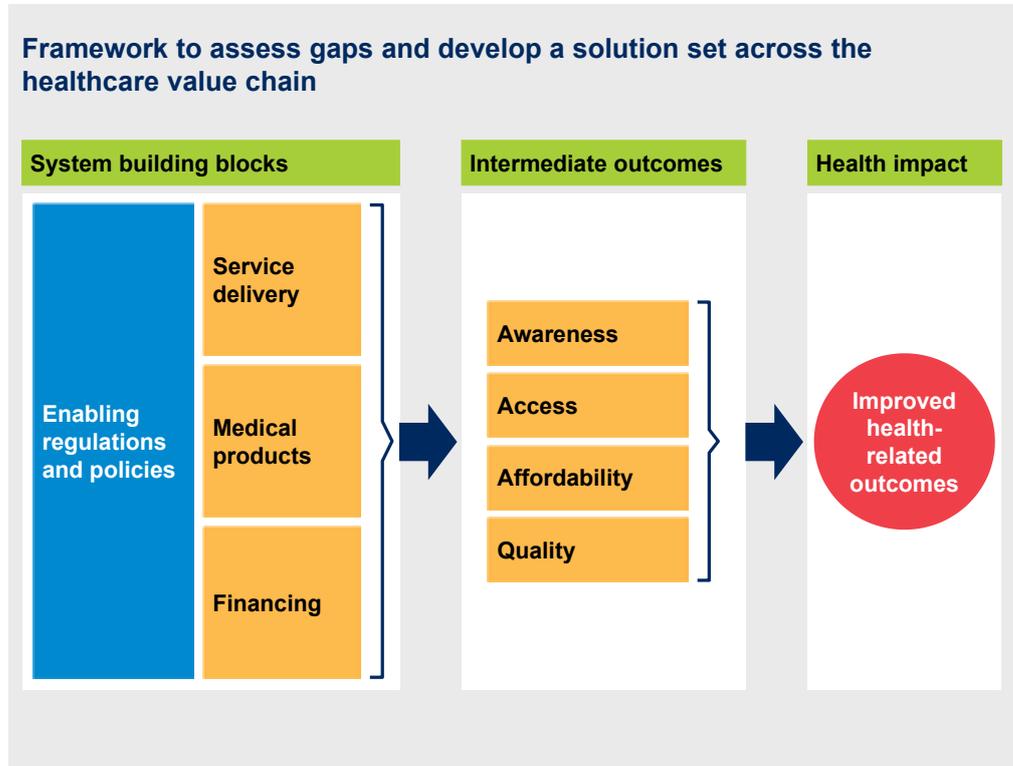
The awareness issue – ignorance is not bliss!

The first question to examine is whether people are aware of their personal health challenges or the broader health challenge, in order to act. The following statistics speak for themselves:

- India has only a 28 per cent diagnosis rate for common diseases. For many diseases, the latent demand for pharmaceutical drugs is higher by almost an order of magnitude than the visible demand. This has forced pharmaceutical companies to work upstream in the patient funnel to create a market.
- Few mothers are educated about the nutrition that they require during pregnancy, and this further affects child health and mortality.
- Levels of public discussion and awareness are very low and inadequate to stimulate collective action in India. As an indicator, barely 1 per cent of all leading newspaper editorials in 2012 were on healthcare-related topics.⁴

⁴ *An Uncertain Glory: India and its Contradictions* (2013), by Jean Drèze and Amartya Sen.

Exhibit 1.4



The access challenge

- The second question to examine is that, for those who are aware, how easy is access to healthcare? Once again, the statistics are quite staggering.⁵
- With 1.3 beds per 1,000 population, India is at 40 per cent of the WHO norm of 3.5 beds per 1,000 for emerging markets.
- The urban–rural mismatch and inequity is masked by the averages. For example, 25 per cent of India’s hospital beds today are in the eight major metro cities, which house only 7 per cent of its population. The balance 93 per cent of India’s population has a 90 per cent shortage of necessary beds.
- India suffers a severe shortage of suitably trained medical workforce. For example, the country has just 2.2 medical doctors per 1,000 population. Low-income states suffer up to 50 per cent shortage in nursing staff. Rural medical practitioners are not yet formalised in India, even though they treat around 64 per cent of the patients.
- To make matters worse, healthcare worker absenteeism rates in rural healthcare facilities are as high as 40 to 50 per cent in India’s poorer and more populous states.

Lack of affordability

The third question is of affordability, for those who are aware and access care. The statistics here, too, present serious cause for concern:

⁵ India Healthcare Report (2012), McKinsey & Company and CII.

- Of the total healthcare spend, 61 per cent is out of pocket private spend by patients – 1.7 times the average for similar low- and middle-income countries. Most of the population cannot afford care for “catastrophic diseases” (cardiovascular diseases, cancer, etc.). A single coronary artery bypass graft (CABG) surgery, for example, costs INR 150,000 on average in a private hospital in a Tier 1 city. Around 97 per cent of India’s population lives on less than INR 200,000 per annum, and would struggle to afford this. The disposable income for the next 2 per cent of India’s population is below INR 65,000 per annum – less than half the cost of the surgery. Such catastrophic illnesses weaken the finances of even the richest Indian families.
- Medical inflation has been around 10 per cent annually, outpacing GDP growth and pushing affordability further beyond reach.
- Public expenditure on health is 1 per cent of GDP, ranking among the bottom five countries in the world and has not even kept pace with GDP. This falls behind the world average of 6.5 per cent, and compares unfavourably with even Sub-Saharan Africa, where governments invest 2.9 per cent in public healthcare.⁶
- Less than 20 per cent of the population is covered under any form of health insurance scheme; in comparison, over 75 per cent of the population in similar economies (e.g., Brazil) is insured under at least one health insurance scheme.
- Most current insurance schemes offer “event-based care”, i.e., they do not cover preventive care or out-patient care. This in turn raises the overall cost of the healthcare system since most diseases are not caught in time to prevent them from developing into serious conditions.
- Finally, there is an unresolved debate around the primary role of the government in the health system, whether as a payor or provider or regulator. The jury is still out on what is the right model for a country such as India.

Low quality of healthcare

The final question: if a patient were to somehow circumvent all the above challenges, could he or she expect good quality care? Consider the following:

- Around 80 per cent of rural infrastructure does not meet the basic norms of IPHS (Indian Public Health Standards). Barely 12 per cent of primary healthcare facilities are regularly maintained, with many lacking even basic infrastructure such as toilets and access to electricity.⁷
- The lack of a guiding regulatory framework to effectively manage diverse and numerous providers – both private and public – results in various issues related to the quality of healthcare infrastructure.
- Absence of standardised treatment practices across hospitals might result in over-medication or recommendation of procedures that are not a must. For example, a recent study found that 47 per cent of all deliveries in private healthcare facilities in Chennai were done as caesarean sections, which is significantly higher than the WHO norm of 15 per cent. In the same time period, only 20 per cent of deliveries in Chennai public hospitals were caesarean sections. Although there might be an inherent selection bias, the difference is too stark to be fully explained otherwise.⁶

Therefore, the overarching health outcome crisis revolves around a set of poor intermediate health system indicators. The solutions to the broader question of universal health access need to address these challenges as well. In fact, most foundations that support health or multilateral agencies that support India on the health front are increasingly focusing on health system reform as opposed to only symptomatic relief of the outcome challenge.

⁶ *An Uncertain Glory: India and its Contradictions* (2013), by Jean Drèze and Amartya Sen.

⁷ *India Healthcare Report* (2012), McKinsey & Company and CII.

INNOVATION AT SCALE AS A KEY COMPONENT OF THE SOLUTION

The most commonly held belief is that throwing more resources at the problem will solve it. There is broad consensus that the government must significantly increase its level of spending on healthcare. That is not enough because:

- India lags significantly behind on healthcare outcomes compared to most economically weaker countries. A further reason for concern is the low level of improvement in the past 2 decades. As earlier mentioned, India's DPT immunisation rates have barely risen since 1990, while Bangladesh has moved from under 20 per cent immunisation in 1985 to over 95 per cent today.⁸
- While more investment is probably needed to help set up basic infrastructure, that alone will not be sufficient to solve India's issues in healthcare. For example, Tamil Nadu – a relatively well-performing Indian state on most healthcare outcomes – invests less per capita on healthcare than other states with fairly poor health outcomes. Still, Tamil Nadu outperforms the other states by having better staffed and monitored primary healthcare facilities, higher proportions of female staff in these facilities, and greater government focus on “preventive” rather than just “curative” treatment.⁸
- The scale of the challenge is enormous. For example, rural India currently has over 90 per cent shortage of hospital beds, and 50 per cent shortage of medical workforce.⁹ The challenge of improving India's health infrastructure and resultant health outcomes is too vast and complex for the government to address on its own. India requires far greater and disruptive participation from various stakeholders, including the private sector, particularly through innovative business models, to serve the population at scale.
- For example, the early detection of breast cancer can cut the risk of mortality in the next 5 years by up to 89 per cent.¹⁰ In India, 48 per cent of all women detected with the disease succumb to it (70,000 deaths). Globally, these figures stand at 31 per cent, with only 25 per cent of the deaths recorded in developed countries. Now imagine rural India, where most women are unlikely to even have heard of breast cancer, let alone know that they need a check-up every 2 to 3 years. Innovation could thus be around improving detection, which would call for creating access to good quality mammography scans through mobile centres and their interpretation through tele-radiology across rural and semi-urban areas. Given India's cultural sensitivities, these centres would need large numbers of trained female medical staff, as well as an innovative mammography test where the doctor need not touch the patient. Without all these factors in place, disease detection will happen only when treatment is either unaffordable, or worse, useless. Such innovations cannot be the mandate of the government alone, and will require significantly greater participation from the private sector, not only to bring much needed investment to healthcare but also to pull in learnings from across the globe.

* * *

Such challenges in public healthcare, while perhaps more stark in India, are not unique. Several emerging economies across Asia, Africa and Latin America face similar challenges, with a large population below the poverty line spread over a wide area, thus compounding the issues of access to and affordability of quality healthcare. This paper goes on to illustrate some timely innovations in healthcare from such emerging economies, including India; it raises common challenges that the innovators have faced in scaling up their models, and suggests potential solutions to enable innovation at scale.

⁸ *India Healthcare Report* (2012), McKinsey & Company and CII.

⁹ *Ibid.*

¹⁰ National Cancer Registry Programme.



Some emerging healthcare innovations

Around the world, and especially in developing economies, several innovations have emerged to effectively tackle the challenges of access to and affordability of healthcare. Innovations have sprung up across the healthcare value chain – preventive, diagnostic, curative (primary, secondary and tertiary) and rehabilitative care.

This chapter shares some innovation stories. The choice of case studies is neither exhaustive nor are these the only examples of successful innovations in developing economies. However, they provide a panoramic view of innovations across the value chain, at different stages in the lifecycle of the business, as well as from different geographies. Additionally, the innovations studied focus on improving one of the intermediate indicators of access, affordability and quality.

The purpose of the case studies is to highlight the impact achieved at the local level as well as the multiple challenges limiting scale up, ranging from those which are inherent in their business model to more ecosystem-driven challenges.

CASE EXAMPLE 1: SWASTH INDIA, INDIA



Swasth India was founded by two friends from IIT Bombay, Sundeep Kapila and Ankur Pegu in 2008. Their vision was to build a healthy and resilient India by ensuring health equity and security for all. The organisation aims to deliver affordable low-cost primary care across the “5 Ds” – doctors, diagnostics, drugs, day-care and dental. Swasth India runs 10 centres in Mumbai’s western suburbs, each targeting a catchment population of 100,000 in the low-income segment. After significantly refining its business model, Swasth provides primary

care at costs 20 to 50 per cent lower than prevailing levels. This makes primary healthcare a lot more affordable and pre-empt the possibility of subsequent catastrophic healthcare expenses. Swasth India has also made this a financially self-sustaining model. It is currently in the pilot to scale-up stage.

The motivation for innovation

Most healthcare problems can be tackled at the primary-care level to reduce the financial burden on the individual and the health system at large. This is especially relevant for a country like India where out-of-pocket expenditure on healthcare is high, at over 60 per cent.

India's urban poor currently have three alternatives available for primary care – government, charitable clinics and private clinics. Swasth India's aim was to address any gaps in affordability, accessibility and quality for the urban poor segment.

The impact

Swasth's innovative business model addresses all three challenges:

- **Affordability:** Primary care at a Swasth centre costs 20 to 50 per cent less and also refers patients to a closed network of secondary/tertiary care. A web-based live health information management system records around 118,000 patient visits, saving customers INR 12.5 million, or about INR 100 per visit. For a typical urban slum family that earns INR 150 to 200 per day, these are significant savings. The hidden saving – of averting subsequent health expenses – makes this even more impactful. As a part of its community outreach and school health programmes, Swasth has conducted around 85 community camps and 60 school camps to detect anaemia, hypertension and diabetes, creating 80 to 100 per cent consumer savings.
- **Access:** Swasth healthcare centres are extremely convenient for patients since they offer a one-stop-shop for all their health needs: doctor consultation, diagnostics, drugs, day care and dental.
- **Quality:** Swasth reports a customer satisfaction rate of 92 per cent across its patients.

The source of innovation

Swasth has had to innovate around many fronts to deliver this impact. On the cost side, it created a model that is 40 per cent lower in system costs than a private provider, allowing it an operational break-even at a unit level within 2 years of launch. This makes the model very scalable.

On the quality front, Swasth works with a range of medical practitioners who are legally permitted to practice by local law – MBBS doctors and people trained in alternative medicine as applicable. They use an in-house IT system which contains coded standard operating procedures and electronic medical records of all health-related events in the family. The staff incentives are linked to patient health and satisfaction.

The potential and aspirations

Swasth today covers a population of 1 million people in India with its 10 centres. If scaled up, however, it has the potential to favourably impact at least 100 million to 150 million people in urban India, a scale factor of 100 that can touch 10 per cent of India's population.

Swasth India aspires to cover 75 per cent of Mumbai's slum population of 8 million people by 2017. To do this, it plans to scale up operations to 60 to 80 centres, targeting around 5.5 million lives.

Challenges to scaling up

- **Lack of "social" funds:** Despite being self-sustaining, Swasth has found it hard to source equity capital for scaling-up a socially oriented initiative which has limited ROI potential. Even investors who are considered socially focused have higher ROI expectations than what Swasth is able to offer.

- Talent limitation: Swasth's model requires one doctor to be present at every centre at all times – allopathic and AYUSH as permitted by local laws. This limits Swasth's ability to bring in doctors at the right cost in states that are short on allopathic doctors and where laws do not permit AYUSH doctors to practice allopathic medicine.
- Insurance limitation: Swasth's innovation has significantly reduced patient expenses. However, greater insurance coverage at the primary-care level would make Swasth relevant to an even larger population.

CASE EXAMPLE 2: BIOSENSE TECHNOLOGIES, INDIA



Myshkin Ingawale, Dr. Abhishek Sen, Dr. Yogesh Patil and Aman Midha founded Biosense Technologies in 2008 to facilitate the detection of commonly undiagnosed ailments through affordable point-of-care and non-invasive diagnostic devices. Till date, Biosense has launched three devices:

- TouchHb – A non-invasive haemoglobin measurement device
- uChek – A smartphone-based portable diagnostic system
- SuCheck – A low-cost glucometer

Since its initial incubation at the Centre for Innovation, Incubation and Entrepreneurship (CIIE) at the Indian Institute of Management, Ahmedabad, Biosense has received more than USD 500,000 in grants and funding from GSF India, Insitor Fund, Echoing Green Foundation, Department of Science and Technology and Villgro. It is currently in the pilot to scale-up stage.

The motivation for innovation

Much of India's population today suffers from illnesses that could be easily prevented with more affordable blood and urine diagnostic tests. For example, an alarming number of women and infants die in birth-related complications connected with anaemia; early detection would have saved most of these lives. Biosense aspires to help bridge this gap.

The impact

Biosense is currently present across four Indian states where it has partnered with 700 different labs to provide affordable diagnostic services to around 1,40,000 patients. Its three products offer three clear benefits to the end patients:

- **Affordability:** Biosense controls the cost of its devices and offers them at low prices. For example, SuChek is the cheapest glucometer on the market today, since local manufacturing allows individual testing strips to be priced 50 to 70 per cent cheaper – at INR 3 to 5, rather than prevailing prices of INR 10 to 15.
- **Accessibility:** Through innovations, Biosense's products enable greater access to doctors and care. For example, the uChek app allows instant transmission of results to distant locations using a smartphone, thus making it possible for a remote doctor to provide timely care.
- **Quality and safety:** TouchHb is the only low-cost device available that can measure haemoglobin without needles. Given the relative non-enforcement of safety measures in smaller towns around the reuse of needles, this is a significant step towards safe diagnostic testing.

The source of innovation

Biosense has focused on localising its products to the Indian environment and for non-metro users. For example, competing products offered by MNCs are designed for significantly higher throughputs than usual in tier 2 or 3 cities, and hence these labs would have to wait for a longer time to be able to run tests in larger batches. Also, uChek can operate for some time without electricity, a big plus in smaller towns which do not have regular power supply.

On the cost front, too, Biosense has focused on local manufacturing to keep costs down so as to be more competitive than similar products offered by MNCs.

The potential and aspirations

The Biosense vision is to provide affordable and quality healthcare for all. The start-up aspires to prevent meaningless deaths due to the unavailability of low-cost diagnostic devices in India and other developing countries. In the next 3 to 5 years, Biosense aspires to expand and deepen its presence in 8 to 10 large Indian states. However, the need and therefore potential is even higher.

Challenges to scaling up

There are three major challenges Biosense faced and is likely to face in scaling up:

- **Lack of mentorship and guidance for start-ups:** In the absence of guidance on customer needs in India, Biosense wasted a lot of funds and resources in the first phase of design. It took a long time to create an accurate product that suited market needs.
- **Challenge of distribution:** India's distribution market is highly fragmented. Biosense needs many more feet on the ground to coordinate with local distributors to sell products India-wide. In addition, the sales force is typically reluctant to push low-cost products due to the low commissions.
- **Lack of government and not-for-profit business:** Due to low adoption and bureaucratic procurement processes, Biosense has struggled to capture business from the not-for-profit sector (NGOs) and public healthcare system.

CASE EXAMPLE 3: CLICKMEDIX, USA



ClickMedix was established in 2010 by the faculty and students of the Massachusetts Institute of Technology and Carnegie Mellon University. It is a global mobile health and educational organisation that aims to bridge the gap between the growing need for healthcare services and the lack of medical personnel in developing countries.

It equips nurses, health workers and physicians with smartphones that have a ClickMedix app. They can transfer information about patient symptoms to remote

specialists who reply with a diagnosis and instructions on treatment. All a patient needs to do is visit the nearest community healthcare professional to access specialist diagnosis and treatment. The local worker screens patients to send through only complicated cases, and serves as the specialist's eyes and hands to facilitate the diagnostic process. It is currently in the scale-up stage.

The motivation for innovation

ClickMedix aims to address three critical healthcare challenges plaguing the majority of the developing world, including India:

- Lack of physical access to healthcare facilities in large developing countries
- Low out-of-pocket payment capacity for a majority of the population
- Lack of suitably trained medical personnel equally distributed across these large countries to ensure a required minimum standard of care

The impact

ClickMedix has completed 5 years of pilot programmes in 15 countries, 61 clinics and hospitals, three governments and 10 research institutions, four NGOs, four multinational corporations, and reached an overall population of 700,000. It has a network of over 1,000 health providers. ClickMedix simplifies the healthcare experience in many ways:

- **Accessibility:** It helps physicians to serve 4 to 15 times more patients in the same time period because the intermediary healthcare worker screens patients, checks symptoms and highlights only relevant information for quick decisions. A single doctor can thus serve up to 10,000 rural patients with 10 nurses and 100 community health workers.

- **Affordability:** Patients save on consultation and transportation fees and also benefit from the early detection of diseases. Physicians can offer cheaper services thanks to reduced administrative costs (down by about 25 per cent). ClickMedix also helps health systems around the world to reach more patients at lower costs. In Botswana alone – a country with a GDP of USD 14 billion – ClickMedix technology has helped the government save over USD 500,000 each year on just transportation costs.
- **Quality:** It helps patients to access medical specialists for targeted disease care in less than 3 days. Without ClickMedix, reaching the right medical specialist and receiving the appropriate care could take anywhere between a few weeks to even a few months depending on the disease area.

The source of innovation

ClickMedix was founded on the realisation that specialists can offer a diagnosis and treatment plan by knowing the patient's answers to 10 specific questions and seeing some photographs. This fact, along with the widespread access to mobile phones in most developing countries, particularly in Africa, forms the core of the ClickMedix model.

The potential and aspirations

The ClickMedix model can reach every patient in the world and for this it needs to grow its current reach by almost 10,000 times. Each healthcare provider it adds can serve 3,000 to 10,000 patients per year, positioning ClickMedix to scale up exponentially.

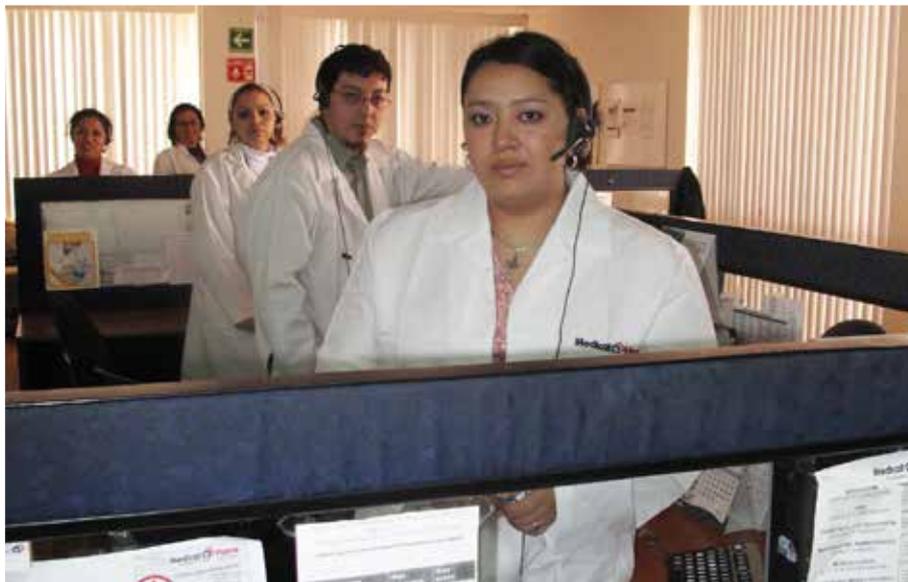
ClickMedix aims to expand into at least three new countries each year, and double the number of patients reached. Its long-term aspiration is to serve over a billion patients with a humble revenue goal of USD 1 per patient per month.

In India, ClickMedix is working with a partner, Medtronic, to set up "Shruti", a programme that will train a wave of health workers to screen for ear infections, preventing deafness and hearing loss. This is at the pilot stage in Delhi.

Challenges to scaling up

- **Low adoption of technology by existing providers:** One challenge for ClickMedix has been awareness and adoption of this "new way" of healthcare delivery care through technology. Many health workers in rural areas are illiterate or speak only local dialects and thus need to be trained to correctly use apps for transmitting information to and from doctors.
- **Finding the right strategic partners:** In the absence of a common platform where different players in the healthcare ecosystem can come together, network and discuss potential partnerships, ClickMedix has struggled in most countries to find the right strategic partners.
- **Lack of financial investment:** ClickMedix has broken even in 2013 and is currently financially self-sustaining. In addition, their business model is expected to show a significant ROI after 2 years of stable functioning. However, it will still take another year or so to "prove" its business model and show sufficient returns to attract financial investors for a scale-up.

CASE EXAMPLE 4: MEDICALL HOME, MEXICO



Medicall Home, founded in Mexico in 1999, is a private, for-profit organisation which connects patients to doctors over the phone, round the clock, for a nominal extra USD 5 per month. It is currently in the scale-up stage.

The motivation for innovation

Medicall Home emerged due to three critical challenges in Mexico's healthcare system:

- Poor access to medical care, especially in rural areas. There are too few doctors and nurses, and rural patients must often travel long distances to access care.
- At USD 30 per doctor visit, seeing a doctor is an expensive proposition for low-income patients, and many neglect healthcare issues as a result.
- High variation in the quality of care providers, and it is almost impossible for patients to identify the best physicians by themselves.

The impact

Medicall has significantly reduced the burden on the overall healthcare system. Two-thirds of the 90,000 calls per month are resolved right away, cutting down the number of patients crowding healthcare centres, and reducing emergency visits from 6 per cent to 1 per cent.

In addition, Medicall provides the following benefits to patients:

- **Access:** Medicall now offers phone consultations to 1.2 million families (around 4 million people) across Mexico. Patients can dial a doctor any time 24x7 instead of waiting for clinics to open or rushing to emergency wards.
- **Affordability:** A trip to the doctor typically costs USD 30, while a Medicall subscription costs a flat USD 5 per month, regardless of the number of calls. The system saves up to USD 250 per person per year – a more than 50 per cent reduction in private healthcare spending. The model is expected to save over USD 20 million annually on medical visits.
- **Quality:** Patients are connected to highly qualified doctors, who can access patient records on the centralised database in minutes to provide a comprehensive diagnosis.

The source of innovation

Medicall makes innovative use of an existing resource – the telephone network. Each year, 5 million to 6 million people in Mexico enjoy the advantage of on-call medical advice. The Medicall referral network also allows patients a discounted rate at any of 6,000 doctors and 3,200 healthcare delivery sites in the country. Overall, this has eased processes for patients, while freeing up the time and resources of healthcare centres to focus on critical patients.

The potential and aspirations

The full potential of Medicall's model is to reach approximately 5 billion mobile phone users across the world. Currently, the company wants to scale up the service in the next 3 to 5 years to the 100 million mobile phone users in Mexico, multiplying its reach 25 times. It is working with large employers in Mexico to offer this service as a benefit for employees, which would help to cut down on the days they take off to visit a doctor. It is also trying to network and lobby with government social security agencies to spread the word on its low-cost, low-technology model.

Medicall also wants to expand its focus to chronic disease care, e.g., by offering Mexico's over 12 million diabetic patients services such as reminders, uploaded lab results, etc.

Medicall is also trying to expand its geographical reach by partnering with phone networks or credit card issuers in other countries. It is preparing to launch operations in Colombia, Peru and Ecuador.

Challenges to scaling up

- **Resistance to adoption:** Doctors, governments, patients and unions resist the adoption of technology-based healthcare into the mainstream.
- **Finding the right strategic partner:** The model depends heavily on telecom service providers, and it has been difficult to find the right partners, especially when trying to expand into other countries.
- **Lack of an enabling policy environment:** Many countries either do not have a regulation about telecom-based healthcare or do not allow it. This limits expansion possibilities, and Medicall will have to ensure that any new country has a pre-existing regulation favouring telecom-based healthcare, or must liaise with the government to ensure that such an enabling regulation is passed.

CASE EXAMPLE 5: ONE FAMILY HEALTH, RWANDA



One Family Health (OFH) is a private, not-for-profit organisation launched in Rwanda in 2012. It manages health posts in partnership with the country's Ministry of Health to increase rural healthcare access.

The motivation for innovation

Like most developing countries in Africa, Rwanda has far too few public sector healthcare workers prepared to work in rural areas. So while 90 per cent of Rwandans hold national

health insurance, they have limited access to healthcare. Most patients have to walk up to three hours to reach approved facilities or rely on expensive and very irregular transport options on rural roads. Even if they reach a public community health centre, these are overcrowded and often lack basic commodities, thereby affecting the quality of basic primary care. One Family Health seeks to resolve this problem.

The innovation

OFH collaborates with the Ministry of Health via a public–private partnership (PPP) using business format franchising principles. It acts as the franchisor, advertising for and recruiting qualified nurses with at least 5 years' clinical experience to join the OFH franchise network. Allowing nurses to own/run clinics via such a franchise network encourages them to work in rural areas and gives them an opportunity to earn, making them stakeholders in the success of the innovation model.

OFH provides these nurses with basic training in financial, clinical, marketing and general administrative matters. In addition, it helps them with start-up loan financing via Ecobank – a large commercial Africa bank, and enables peer networking and technology innovation by supplying a handheld, internet-enabled mobile phone.

The 50 OFH health posts opened at the end of December 2013 were run by local nurses and served over 200,000 patients. These health posts can address 70 per cent of the most common conditions or diseases afflicting people at the bottom of Africa's socio-economic pyramid, which cause 40 per cent of deaths in the general population.

The impact

OFH health posts offer a great advantage for the patients, for the nurses and local community, as well as for the healthcare system:

- They address 70 per cent of patient conditions, referring only the balance 30 per cent to more comprehensive clinics. This eases the pressure on these facilities, allowing them to provide better quality care to those who really need it via a formal referral system.
- The model enhances the skills of the trained nurses as they acquire more technical knowledge through practical experience and continuous training.
- OFH health posts provide local employment, creating jobs for support staff such as assistants, cleaners, etc. thereby benefitting the community.
- The franchise model sets clear standards, making it easier to replicate the model without affecting quality, while enjoying the economies of scale.
- In addition, the internet-enabled mobile phones nurses use help to create greater transparency in the healthcare system. Nurses develop and maintain a live database of patient records and clinic stocks, ensuring all important medicine is always in ready supply. Due to overall supervision, the Training and Compliance Manager can ensure two things: that no over-prescriptions occur, and that local morbidity patterns are noticed and reported in a timely manner, e.g., a spike in malaria infections.

The potential and aspirations

One Family Health is helping to realise Rwanda's Vision 2020, which aims to ensure that basic healthcare services are no more than an hour's walk for any Rwandan. OFH aims to set up 75 additional OFH posts by the end of 2014 and 500 OFH Health Posts by the end of 2018 in Rwanda. This will cater to a minimum of 2.2 million patients every year. It will also save the Ministry of Health between USD 7 million to 8 million in direct expenditure on government employed nurses.

These savings can be effectively deployed in other areas of healthcare, e.g., training additional healthcare professionals. The model will also save the government at least USD 0.7 million, which it could invest to upgrade neglected or abandoned healthcare facilities to an acceptable operational standard. OFH aims to provide quality basic healthcare for around USD 2 per capita per annum and expand the partnership as per the PPP to include items such as immunisation services and family planning.

It is also seeking multi-year funding to allow for expansion beyond Rwanda and aims to open 500 OFH clinics in Zambia and 800 in Ghana. Detailed country assessment studies already reveal the viability of the OFH model in these countries.

Challenges while scaling up

- **Lack of qualified nurses prepared to work in rural areas:** Lacking incentive, few qualified and practically trained nurses choose to work in government facilities. The OFH model is trying to change that.
- **Inherent inefficiencies in any PPP:** Unforeseen problems, ranging from poor communication to red tape, repeatedly prove time-consuming and slow down the scale-up process. These challenges are only very slowly easing up. OFH is networking and building relationships to overcome such obstacles. But those working in the public sector have so much to do that it can be a daily challenge. This requires both parties in the PPP to compromise and work towards the same goals.
- **Challenge getting paid for services:** The government's community-based health insurance fund is the source of revenue for franchisees. Administrative and financial pressure slows down payments for franchisees, who must then rely on the paying customer base in their catchment area. Recognising this problem, the government is transferring the financial management to the Ministry of Finance under the supervision of the Rwanda Development Board (RDB), with expertise from the USA to aid the process. However, change is slow, and payments are uncertain for dues owed on services rendered to over 200,000 patients in 2013.

* * *

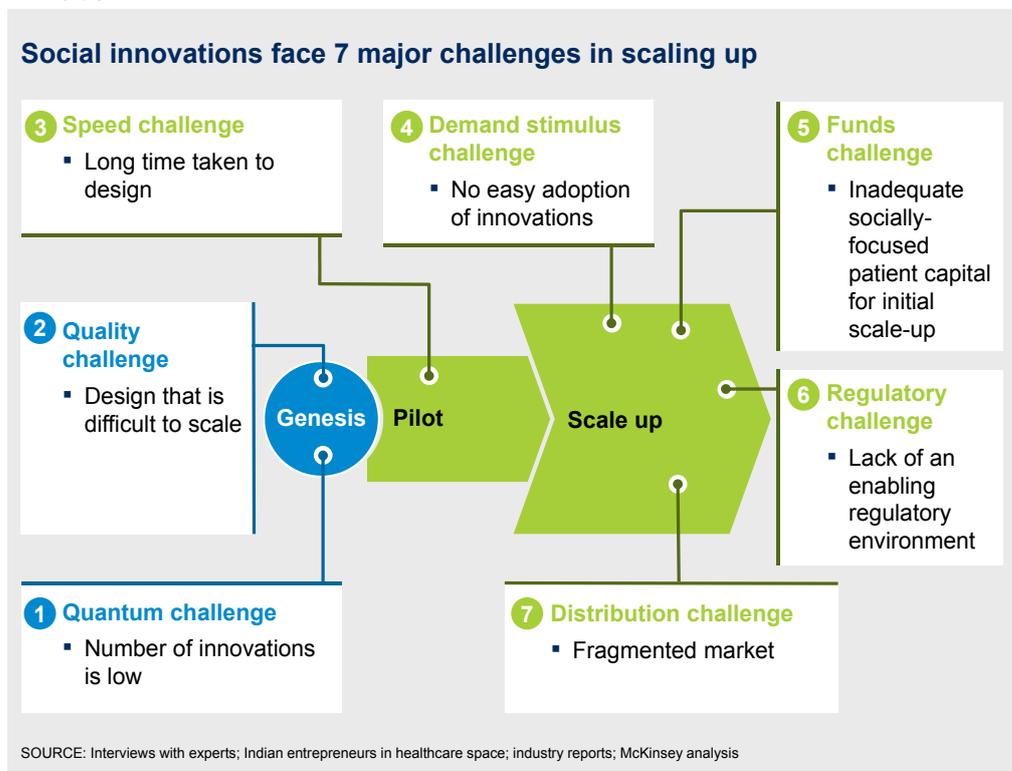
These innovations are by no means an exhaustive set. Across these case examples, we see extremely interesting innovations that have not only had impact on the small scale of current operations, but also have the potential for impact at scale. However, challenges and barriers slow down the scale-up of these innovations. The chapters to follow examine these challenges, their root causes and propose solutions to these.



Challenges to scaling up innovations

Several emerging healthcare innovations have had impact at local scale but face genuine challenges in scaling up to full potential. Some of these challenges are inherent to the business while others are more related to the ecosystem. While these challenges typically manifest during scale-up, they can emerge at any stage in the lifecycle of the enterprise, from genesis to pilot to scale-up. Seven of these challenges stand out in particular (Exhibit 3.1). It is vital to understand the root causes behind these challenges so that targeted solutions can unlock innovation at scale. This chapter focuses on the seven key challenges and the ten underlying causes.

Exhibit 3.1



CHALLENGES FACED IN SCALING UP HEALTHCARE INNOVATIONS

Across the lifecycle of an enterprise, seven major challenges obstruct the scale-up of healthcare innovations.

1. Quantum challenge: Number of innovations low

Despite the numerous interesting stories of innovations in developing economies we outlined in Chapter 2, at a macro level the number of innovations is significantly lower than what we see in developed economies. For example, India lags far behind the USA in the scale of technology-related innovation – the average number of technology-focused companies formed annually in the USA is 20,000 to 25,000 as compared to 300 to 500 in India. The number of technology companies which secure angel funding annually in the USA is around 15,000, compared to just around 70

in India.¹ While the trend in Indian healthcare innovation vis-à-vis other countries is much more encouraging, there is considerable scope for improvement given the magnitude of the challenge.

Two major drivers of the quantum challenge: First, there is a severe lack of angel/seed funding available to early stage start-ups that are trying to develop innovative products and services. Second, there is a dearth of incubators and accelerators to provide domain-specific and management expertise to early stage start-ups.

2. Quality challenge: A design that is difficult to scale

Entrepreneurs often design for a specific local environment. For example, Swasth India's primary care centres for urban slums hinge on the ability to leverage AYUSH doctors in addition to allopathic doctors. This model will struggle to reach states which do not permit AYUSH doctors to practice allopathic medicine. In other words, Swasth has designed an excellent model for the local geography over a 5-year period but one which will struggle to immediately scale up. One could argue that this is a second order regulatory challenge but the broader point of designing for local optimum exists. During the initial stage of an enterprise, entrepreneurs rarely consider and work towards attaining full potential of their innovation. This quality challenge in design is in turn driven by two reasons:

- Resource constraints: In the initial stages, entrepreneurs are under pressure to put limited resources (time and money) to best use. At this point, they face a trade-off between a quick launch and a slow but sustainable scale-up. They typically lean towards addressing the local market need quickly rather than designing for the long term.
- Vacuum in mentorship: There is a lack of healthcare-focused incubators to provide domain-specific or management inputs. In the development of medical devices, very few organisations, such as Stanford-India Biodesign and Villgro, are able to mentor and support start-ups. The more evolved concepts of developed markets are not always relevant in the very different healthcare systems of developing markets that are still seeing their first cycle of innovation. Government, academia and other agencies offer limited support for mentorship and incubation.

3. Speed challenge: Long time taken to design

Start-ups in emerging markets such as India have limited access to expertise and resources in academia for initial proof-of-concept testing or to get input on the design. These result in long gestation periods for design and consequently high drop-out rates or products not designed for scale. The lack of an adequate entrepreneur-academic connect is in turn driven by the absence of programmes or forums by which start-ups can collaborate with academic institutions to access prototyping equipment in the initial stages and get expertise on designing scalable service models in healthcare. For example, Biosense found it very difficult to access expensive equipment such as prototyping machines and 3D printers that are available only in a few of India's top educational institutes. The lack of adequate programmes is in turn driven by how academics are themselves incentivised. They typically get more credit for publishing their research in journals than for creating business models that are immediately applicable.

4. Demand stimulus challenge: No easy adoption of innovations

Most start-ups do extremely well in their pilot markets, but fail to replicate that success outside those markets. This is typically driven by three factors:

- Awareness and acceptance gap: Very few platforms exist in India to showcase innovation within the country and across the world and thereby create awareness among industry, government and academia. Technology-backed innovations such as ClickMedix will require significant efforts to influence awareness and acceptance. It is economically unviable for individual entrepreneurs to attempt to create such platforms.

¹ NVCA, VCCircle, UNH Centre for angel investment research, Zinnov.

- Absence of framework for demand absorption: For example, the current structure of the public health systems offers no framework or plan whereby the government can support pilots or the nationwide expansion of innovative healthcare innovations. A suitable framework for public private partnerships (PPP) is yet to mature in healthcare and different state health departments are yet to create dedicated teams who can push the PPP agenda. That said, when done well, there is evidence that such collaboration can be mutually beneficial. The 108 Ambulance service project that covers 17 states across India and the Karuna Trust that manages 68 primary healthcare centres in India across eight states are examples of favourably viewed PPPs.
- Funding challenge: While many of the innovations address the affordability challenge, the uptake in customer or patient demand would be further enhanced with greater insurance cover in a country like India.

5. The funds challenge: Inadequate socially-focused patient capital for initial scale-up

Many of the scale-ups, while self-sustaining, have a modest return on investment and find it hard to attract capital. Social entrepreneurs seek funding to the tune of USD 2 million to 5 million – which is much too small for the larger investors and development agencies and much too large for the social funds. Also, start-ups find it difficult to access debt funding from regular channels, which has two consequences. Firstly, the PE/VC investors are not able to get full value for infusing equity due to lack of leverage. Secondly, promoters have to keep issuing equity in order to raise capital for expansion, which dilutes their share.

The major reasons for this lack of appropriate funding for start-ups are the absence of incentives to motivate social funding and absence of an at-scale government sponsored seed fund for innovations.

6. Regulatory challenge: Fundamental lag in the pace of government policy-making vis-à-vis healthcare innovations

While many innovators have overcome the first level of challenges within the healthcare ecosystem, they are limited by the regulatory environment which does not always recognise the alternatives and innovations in healthcare delivery:

- Inadequate response to human capital challenge: India could overcome the shortage of trained and qualified doctors by allowing nurse practitioners and alternative medicine doctors to provide primary care allopathic treatments. For example, the regulations disallowing AYUSH doctors from practising allopathic medicine in some states limit the scale-up potential of Swasth India.
- Absence of policy framework for innovative delivery platforms: For example, India does not have clear policies on the use of telecom-based medicine, such as what Medicall uses. This discourages new innovations, and also constrains the pace of their scale-up.

7. The distribution challenge: Market fragmentation

Several low-cost medical devices effectively tackle the affordability challenge. However, in countries such as India where the majority need lies in rural areas, market fragmentation creates a huge distribution challenge. It is typically unviable for any one player to deliver products to rural India, and the distribution challenge is driven by the absence of adequate industry collaboration to access rural India.

ROOT CAUSES BEHIND THESE CHALLENGES

An examination of the root causes behind these challenges suggests 10 major aspects as outlined in Exhibit 3.2. These include gaps in availability of funding, mentorship, regulatory framework and the industry collaboration. Creating an ecosystem that fosters innovations at scale will need to address these underlying causes.

Exhibit 3.2

Challenges faced by innovators are driven by 10 major root causes

Stage	Challenges	Root causes
Genesis	1 Quantum challenge: Number of innovations springing up is low	1. Not enough angel / seed funding to foster innovation 2. Lack of healthcare-focused incubators to provide domain-specific inputs for design and scale up 3. Absence of industry-academia engagement to: (i) provide access to resources for prototyping, (ii) share ideas 4. Limited mentorship to provide management expertise
	2 Quality challenge: Design is difficult to scale up	
Pilot	3 Speed challenge: Takes a long time to design model	
Scale-up	4 Demand stimulus challenge: No easy adoption of innovation	
	5 Funds challenge: Inadequate "socially focused" patient capital for initial scale-up	7. Low attractiveness of socially focused investments 8. Dearth of government-sponsored seed funding innovations into the public health systems
	6 Regulatory challenge: Lack of enabling regulatory environment	9. Fundamental lag in the pace of government policy-making vis-à-vis healthcare innovations
	7 Distribution challenge: Fragmented market	10. No industry initiative to collaborate and create a consolidated distribution channel

SOURCE: Interviews with experts; Indian entrepreneurs in healthcare space; industry reports; McKinsey analysis

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Therefore, excellent innovations with local impact do exist. And the challenges to scale-up also exist, which prevent them from creating large-scale impact. The question is, what can be done to transform these ventures from being locally excellent to also being globally relevant?



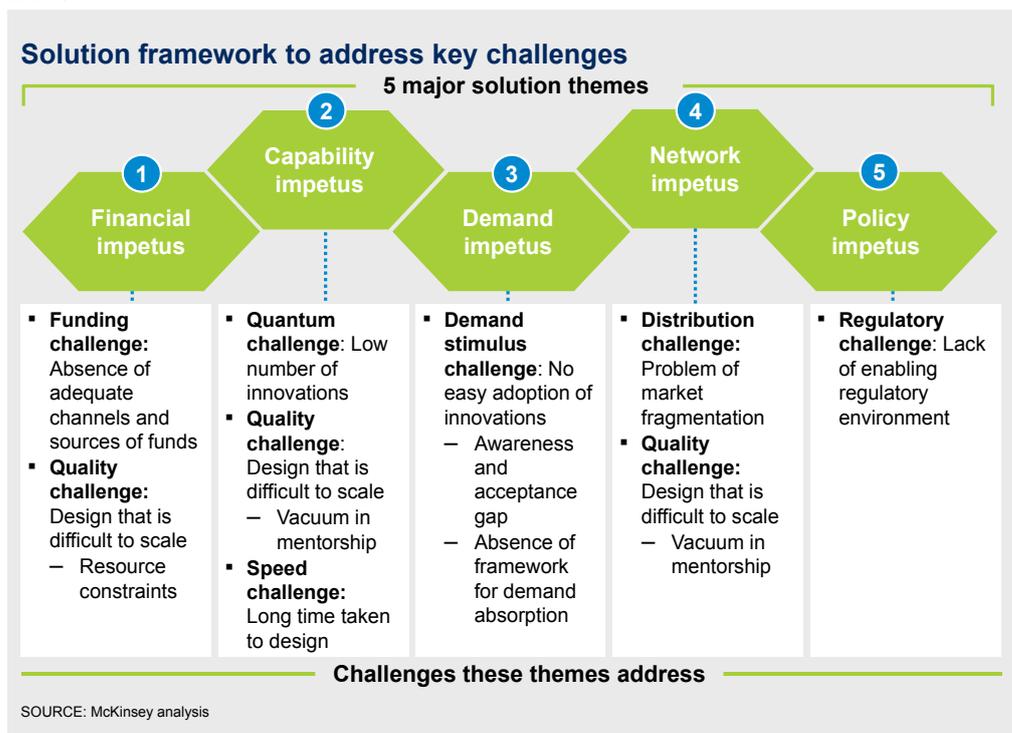
From challenges to solutions

We discussed in Chapter 3 how different challenges and the underlying root causes in the ecosystem prevent the scale-up and diffusion of innovations. Given the urgency of integrating innovative healthcare delivery models into mainstream healthcare, various stakeholders must come together to ideate on solutions and ensure that these materialise. This chapter proposes five solution themes that can address most of the challenges, and also specific ideas. It also suggests the role each stakeholder will need to play in making these initiatives happen. These recommendations are by no means exhaustive; they aim to trigger thought and collective action around this topic.

EMERGING SOLUTION THEMES

We propose five kinds of impetus (Exhibit 4.1) that would spur the scale-up of innovations:

Exhibit 4.1



1. Providing financial impetus to innovative models
2. Delivering capability impetus to entrepreneurs and innovators, both on domain knowledge as well as business and management skills
3. Creating demand impetus from both private and public delivery systems
4. Providing network impetus to allow entrepreneurs to tap into the skills and capabilities of experts across academia and industries
5. Developing policy impetus to unlock second-order barriers that constrain scale-up

RECOMMENDATIONS FOR THE ECOSYSTEM

Sixteen ideas emerge across these five solution themes. Each addresses specific challenges and root causes that currently block scale-ups. Most of these innovations will require joint action and sustained collaboration across various stakeholders, whose role would vary across initiatives from actively owning and driving it to playing a supporting role to being the primary owner (Exhibit 4.2).

Exhibit 4.2

Collaboration across stakeholders to drive solutions		Stakeholders			
		Government	Industry ¹	Academia	Others ²
Financial impetus	1 Establish a seed fund to promote social innovations in healthcare	✓			
	2 Set up CSR-led funds to support socially relevant innovations	●	✓		
	3 Create a fund of funds, to do small ticket-size investments				✓
Capability impetus	4 Sponsor world-class collaborative incubation hubs in apex institutes	✓		●	
	5 Set up a consortium-based entrepreneurship leadership institute		✓	●	
	6 Proactively adopt 2-3 innovators in helping them to scale up		✓		●
	7 Introduce entrepreneurship modules into teaching curriculum			✓	
Demand impetus	8 Establish and implement framework for absorbing innovations into mainstream healthcare delivery system	✓			
	9 Incentivise private providers to adopt local innovations	✓	●		
	10 Conduct social marketing to create awareness and demand	✓			
Network impetus	11 Conduct annual global expos for social innovators	●	●		✓
	12 Incentivise academia to undertake innovative healthcare research	●		✓	
	13 Create a formal industry alliance for healthcare innovation	●	●		✓
	14 Provide tax rebates to distributors to encourage distribution of indigenously designed and manufactured healthcare products	✓	●		
Policy impetus	15 Introduce policy measures to bring AYUSH and nurse practitioners into the mainstream of primary healthcare delivery	✓		●	
	16 Proactively develop policy on delivering healthcare over mobile or telemedicine platforms	✓	●		

✓ Primary ownership
 ● Supporting role

¹ Industry players include device manufacturers, hospital players and other relevant large healthcare companies
² Other players include donors, advisory bodies, and industry associations
 SOURCE: McKinsey analysis

Provide financial impetus

- 1. Government could establish a seed fund to promote social innovations in healthcare.** The fund will identify innovations that can scale up and address the challenges of universal access, and will specifically support scale-up after the proof of concept. This fund can help the government focus on areas that require innovative solutions. It would enable the government to play an active role in baking all relevant design elements into the model during the scale-up phase. The fund will also provide entrepreneurs the kind of patient capital that they need to succeed.
- 2. Industry could set up CSR-led funds to support socially relevant innovations.** Industry could divert a significant share of its obligatory corporate social responsibility funds to innovative healthcare delivery models. This might well have higher impact than directly spending on delivery services, as it will encourage the development of models that are more cost-efficient, deliver better quality, and cater to a larger section of society. Government will have to actively support industry by acknowledging and even encouraging such work.
- 3. Other funders could create a fund of funds for small-ticket investments across multiple ventures.** Various bilateral and multilateral donor and funding agencies (e.g., BMGF, IFC, etc.) could explore collaborations to set up a fund that can conduct multiple small ticket-size investments (USD 2 million to 5 million) in ventures that would otherwise have never received funding due to their size. They can deploy the funds in active partnership with impact investors who have grown significantly in the last few years.

Deliver capability impetus

- 4. Government could fund and enable two or three world-class collaborative incubation hubs in apex institutes.** Government could work with apex Indian cross-functional academic institutions (e.g., Indian Institutes of Technology, Indian Institutes of Management, Indian Institute of Science, and Public Health Foundation of India) in their respective fields to establish collaborative cross-institutional healthcare incubation hubs. The hubs could also actively seek to partner with some institutes of global repute (e.g., Duke University Health System) to draw the best global expertise. Once set up, the incubator could work along the lines of the Stanford India Biodesign programme, but focus equally on every step of the healthcare delivery value chain. It could train innovators on cross-functional topics, expose them to experts and experienced innovators from around the world, offer support as they shape their innovations, and mentor them during and after their stint.
- 5. Industry could set up a consortium-based entrepreneurship leadership institute.** Industry could collaboratively set up an institute to coach innovators and entrepreneurs on domain knowledge and management and business topics. The Indian School of Business is an example of such collaboration. A similar entrepreneurship leadership institute could be established, with a greater focus on shorter-term courses to build leadership capacity in entrepreneurial ventures.
- 6. Industry and academia could proactively adopt two or three innovators in helping them to scale up.** They could draw on their employees, faculty and even students to mentor the innovators and entrepreneurs as they design the pilot to scale-up journey. This would help the innovators acquire vital expertise and learnings, as also build valuable networks and connections for the long term. For companies, this could be an innovative way of building leadership capacity in their own leaders.
- 7. Academia could introduce entrepreneurship and innovation modules into the curriculum of various undergraduate and postgraduate courses.** Formally exposing students to facets of entrepreneurship and innovation they would otherwise never know could encourage many of them to opt for such career options, changing India's innovation landscape.

Create demand impetus

- 8. Government could establish and implement a framework for absorbing innovations into the mainstream healthcare delivery system.** It would be valuable to develop a framework that allows integrating various innovative

healthcare delivery models once the proof of concept has been achieved. These could allow for state- and even district-level adoption, to ensure that locally relevant models get adopted and integrated. This would entail setting up dedicated PPP cells in various state health departments, and providing them with the budget and the mandate to scout for, engage, pilot and thereafter integrate such innovative models into delivery systems.

- 9. Government could incentivise private providers to adopt local innovations.** Innovators find it extremely difficult to compete with established industry players while reaching out to private providers on the ground. Government could proactively incentivise doctors and private hospitals to adopt indigenously developed products in the form of tax rebates to fast-track adoption.
- 10. Government could conduct social marketing campaigns for states that adopt innovative healthcare delivery models in partnership with private players.** Separate budget provisions for conducting intense social marketing campaigns at state and district levels to create awareness amongst public could go a long way to improve adoption and generate demand. This is particularly relevant in the adoption of unconventional ideas such as remote healthcare. Such activities are not economically viable for individual entrepreneurs and need systemic intervention.

Provide network impetus

- 11. Industry could conduct annual global expos for social innovators.** Industry associations could facilitate and organise such platforms, which are sorely needed by innovators to increase their reach. These forums will help innovators to showcase their products and services, give industry players a chance to evaluate profitable partnership options with them and allow government officials, funds and incubators to spot early-stage entrepreneurs whom they can support through funds and mentorship. For example, the World Innovation Summit for Health (WISH) held in Qatar in 2013 aimed to promote and facilitate innovation in the delivery of healthcare around the globe. The event brought together governments, business leaders, academics, clinicians and new media pioneers to discuss most pressing global health challenges and possible solutions.
- 12. Government could incentivise academia to undertake innovative research in healthcare.** Such research would directly lead to developing locally relevant and implementable business models and products, using academia's considerable expertise and resources for creating more affordable and accessible healthcare. Most leading medical, engineering and business schools enjoy the advantages of high-quality expertise and expensive equipment. Shifting their focus from only academic publications to also creating viable business models and practical products would be a powerful push for innovation. Issuing grants that expect a working prototype and a successful pilot of a certain size would be a great starting point.
- 13. Industry could set up an innovation alliance or a separate organisation tasked to encourage collaboration across industry players, academia and other relevant organisations.** India has no common innovation alliance or association that helps different stakeholders in the healthcare ecosystem to come together, collaborate on key topics, exchange ideas and learnings, and if relevant, partner to scale up and commercialise products and services. Creating such an alliance would encourage innovators to scale up, and create an advocacy platform to enable the integration of innovations into the mainstream delivery system. Organisations are filling this gap globally, e.g., IPIHD is helping to provide mentorship and strategic partnerships for innovators like ClickMedix.
- 14. Government could provide tax rebates to distributors to encourage the distribution of indigenously designed and manufactured healthcare products.** Given the wide-scale fragmentation of the distribution industry, it becomes extremely difficult for smaller and newer players to ensure that they reach significant scale. In such a scenario, even a small token of encouragement by the government would go a long way to improve the distribution reach of innovative players and make them more competitive with established players.

Develop policy impetus

15. Government could introduce policy measures to bring AYUSH and nurse practitioners into the mainstream of primary healthcare delivery. Given the extreme demand–supply mismatch of trained manpower, it is important for government to bring alternative providers of care into the mainstream. This will not only help improve access, but also reduce the cost of care. While a few states have taken the initiative on this, others still lag behind.

16. Government could proactively develop policy on delivering healthcare over mobile or telemedicine platforms. Although this is not yet a bottleneck, a clear policy on delivering healthcare over mobile, telemedicine and e-health platforms will go a long way in stimulating various innovations in this area. It will also pave the way for more widespread adoption by consumers and providers alike.

* * *

We believe that social healthcare innovations are here to stay, and will become increasingly relevant for all key stakeholders – government (as payor, provider and a regulator), private providers (large, small and standalone), industry and consumers. These stakeholders therefore need to take concerted action towards securing the future of human health. The proposed recommendations are by no means exhaustive; instead they are intended to stimulate thought and collective action around an area critical for the future health of a large population. We hope that this report serves as a small but definitive step in that direction.

Note on the co-authors

International Partnership for Innovative Healthcare Delivery (IPIHD)

A non-profit organisation, IPIHD supports a diverse and global network of healthcare innovators, industry leaders, funders, and governments. Founded 3 years ago by the World Economic Forum, McKinsey, and Duke University, and supported by over 15 corporations, foundations and governments, IPIHD works directly with over 40 organisations globally to bring to market transformative innovations that increase access to affordable high-quality care.

McKinsey & Company

McKinsey & Company is a global management consulting firm dedicated to helping the world's leading organisations address their strategic challenges. With consultants deployed in more than 50 countries around the globe, McKinsey advises on strategic, operational, organisational and technological issues. For more than eight decades, the firm's primary objective has been to serve as an organisation's most trusted external advisor on critical issues facing senior management. McKinsey's Healthcare practice works with healthcare leaders globally to deliver better care, increasing quality of life and improving global outcomes.

