Global Innovation For Translation

Goal

The primary goal of GIFT is to translate unmet clinical needs into opportunities for novel device development for Indian and emerging markets. These opportunities have a specific focus on patient outcomes, cost and accessibility. A second goal is to develop relations between Harvard and Indian partners to facilitate ongoing innovation through a model of co-creation.

Process

A multi-disciplinary team of Harvard students (College, SEAS, HKS and HBS) was based at Naryana Hospital in Bangalore for 10 weeks identifying and validating needs. Three strategic areas were chosen; Catherization Lab, Cardiac Surgery and Ophthalmology. The students observed procedures, identified needs, and filtered them into viable projects for translation by clustering groups of need, analyzing each, applying selection criteria, and conducting multiple interviews with physicians onsite (see figure below).

Outcomes

Opportunities for Translation at Harvard Biodesign Lab

Cardiothoracic Surgery: Self-stabilizing cannula

Cath Lab: Reusable and multifunctional catheters

Opthalmology : Repeatable curvilinear capsular rhexis

In each of the three areas, the team along with their local clinical collaborators selected the opportunity they felt the most promising. The next step is to being to generate new medical device design concepts in collaboration with faculty advisor Conor Walsh who directs the Harvard Biodesign Lab. This pilot global immersion program provided a unique educational experience and training for medtech innovation in emerging economies.

Connections

The team has made strong connections at Naryana Hrudayalaya hospital with interventional physicians, cardiac surgeons and ophthalmologists. Relationships were developed with the staff at the hospital, and potential areas for expansion such as orthopaedics, urology, radiology and general surgery were identified. The team also spent time at Aravind eye hospital and have established partnerships for ongoing input development on capsular rhexis device, and potential for future collaboration on other devices.

Foundation for future programs

The experience of the GIFT team has laid down the foundations for future programs and students. For future teams going to Bangalore, the key people have been identified to speed up the initial process, and logistics such as accommodation, transport, workspace in hospital have been worked out. The local collaborators are very excited to build a strong relationship with Harvard and together seek means to further expand the program. In future, research exchange programs are envisioned where Harvard students travel to emerging markets and local students travel to Harvard to promote sustainable co-creation of ultra-affordable medical innovations.