2021 Year in Review

MGH 1811

Springboard STUDIO

mghspringboardstudio.org

The Springboard Studio made great strides in the past year, engaging hundreds of Mass General Brigham providers and staff in human-centered design to make health care more user-friendly for all. Through design sprints and the Accelerator program, we leveraged the collective intelligence of the Mass General Brigham community to design new solutions, be it hardware, software, or care re-design, to improve care delivery for patients and providers. It was also a year in which the program itself received significant support, building exciting momentum.

Our four strategic pillars lay the foundation for all of our work: ***Discovery***, ***Accelerator***, ***Impact*** and ***Co-Creation Network***.

Discovery

The Discovery pillar is focused on engaging frontline providers and staff in design-thinking to identify and define challenges which make their job unnecessarily difficult. Programs in the Discovery pillar include:

WeSolve Sprints

are collective problem-solving sessions that bring together frontline providers, staff and patients from across disciplines to identify a challenge then deconstruct it into its component parts. The Springboard team leads participants through needs identification, rapid ideation and then a solutions sprint. By the end of the sprint, participants are pitching their early-stage ideas and low-fidelity prototypes to a panel of judges. Those judges vote on the most promising solutions to move forward, using the three design thinking tenants of feasibility, desirability and viability as judging criteria. The best of the solution(s) is then voted into the Springboard Accelerator for further advancement. This past year, the Springboard team led two WeSolve sprints.

Mass General Brigham's MD Well-Being Task Force engaged the Springboard Studio to address the challenge of the high-volume of patient messages providers receive from the Patient Gateway portal. This challenge was identified as critical because the volume of messages often requires providers to work late into the evenings or be unable to answer them at all. This leads to both patients not getting their needs met and providers being dissatisfied with their work environments. This WeSolve sprint also served as a mechanism for providers from across the Mass General Brigham ("MGB" — formerly Partners Healthcare) enterprise to meet each other and collaborate as a system. Four solutions were pitched by the end of the Solution Sprint and we continue to work with MGB to size and scope those solutions to determine which will be best suited for further investment and acceleration support.

Mass General's Division of Palliative Care and Geriatric Medicine engaged the Springboard Studio to hold a WeSolve sprint to address the high levels of burnout in their division. Specifically, the division wanted to engage its own members to breakdown the challenges around coordinating clinical care, address barriers to professional development and social isolation. The Springboard team led them through a process to ideate how a digital solution might help solve for each of these. Using the inputs from the WeSolve sprint sessions, the Springboard team designed wireframes of a software application including the elements articulated by the

WeSolve participants 'up-vote' priorities articulated during the sprint.

divisions' team members. The Springboard team has been meeting with participants from the sprint individually to review the wire-frames for further feedback and refinement of the solution before engaging a software developer to build it.

WeSolve Stupid Stuff

In collaboration with the Mass General Physicians Organization (MGPO), the Springboard team designed and launched the *WeSolve Stupid Stuff* platform. The platform serves as a place where MGH physicians can submit the 'stupid stuff' that gets in their way of delivering high-quality care. Since the online platform's launch in the fall of 2020, more than 200 physicians across 34 departments have submitted 'stupid stuff' which has been reviewed and triaged by the Springboard and MGPO team. The challenges are triaged to the stakeholders who work in the area identified in the submission and the status of addressing the issue is updated on the platform. The Springboard and MGPO team, together, are working to address the challenge submitted from the Emergency Department (ED) regarding the lack of natural light and its impact on both the patients —including increased delirium — and providers — including lower moods and decreased productivity — who spend extended time in the ED. We are in the process of securing 'faux window' prototypes that can stream real-time scenes from outdoors or pre-loaded images to determine if it could help solve for the lack of natural light. We anticipate installing these faux windows in 2022.

SheSolves

Throughout 2021, the Springboard Studio continued to develop the SheSolves program, which aims to amplify and accelerate women's leadership and participation in health care innovation. Springboard Studio has already successfully empowered hundreds of women innovators; we are leveraging their input, resources, leadership and mentor networks to tackle the barriers to women's participation in health care innovation. SheSolves is unique in that its entire structure — from its inception to the responsive program design — is based on lived experiences and insight from women around the world who have engaged with Springboard for many years. Advancing SheSolves is a priority for the coming year.

Accelerator

The Accelerator provides innovators a stage-gated development process allowing for continuous feedback & iteration. The diversified portfolio includes hardware, software and care redesign solutions.

The Augmented Infant Resuscitator (AIR), an add-on device to a bag-valve mask which provides real-time feedback to users performing newborn resuscitation. The AIR team continued making progress in 2021 after securing a no-cost extension on their long-term grant from Grand Challenges Canada. This grant will support trials in two international sites, one in India and another in Kenya, which will measure the retention of neo-natal resuscitation skills among health care workers who have trained on the AIR device. Another significant milestone accomplished this year is the formation of the health care start-up EB Innovations, which was formed

by the AIR team members, to begin the design and manufacturing of the devices at scale.

The Bunkfinder project is focused on improving the process of discharging homeless patients to shelters. Bunkfinder is led by a team of Emergency Medicine residents at MGH/BWH who have interviewed Emergency Department (ED) social workers and shelter case managers to understand and outline the pain points around communication and patient/client care for homeless patients recently discharged from the ED. Springboard has helped the team to interview ED social workers and shelter case managers to gain a deeper understanding of communication and patient/client hand off when a patient experiencing homelessness is discharged from the ED. Springboard also began work on a publication that outlines the insights from these interviews.

Corverix is a mobile application that aims to prevent heart disease. MGH Springboard helped the team to develop a more targeted business strategy centered around advanced data collection and third-party payers. As a result of this strategic shift, Corverix has been selected as a MESH lab innovation for further development at Mass General.

Rx Stars is an online platform and mobile application that combats burnout in the ED by inviting health care providers to join a fun and interactive mobile community centered around sharing public praise among their co-workers. MGH Springboard advised and collaborated with the team to complete needs validation, pilot testing, feedback and prototype development. Springboard collected user feedback to help the team iterate versions 2 and 3 of the prototype. With the product specifications now more precisely tailored to the needs of the users, the team is planning to invest in the necessary software development to build an updated platform. The Accelerator will continue to work with the team for 6 months.

PICU Rounding App connects patients and their loved ones with the care team remotely

Pediatric Intensive Care Unit (PICU) Rounding App

The concept for the 'Rounding App' came out of the 2019 WeSolve sprint addressing the inpatient experience at Mass General. During that sprint, physicians lamented that they do not have enough time to communicate effectively with the family members of inpatients. Patients and their families similarly complained that they will frequently miss discussing hospital courses with health care teams due to the changing timetables of rounds and their inability to be at the bedside 24/7. Because patient family members are often responsible for long-term care and discharge planning, this lack of communication with the medical team can lead to poor follow-up, frustration and, ultimately, re-admission. This problem was only exacerbated by the pandemic. Following this sprint and subsequent user interviews, MGH Springboard's Accelerator team developed the idea for the 'Rounding App' — a scheduling platform that makes it easier for physicians to invite family members to a videoconference at the patient bedside during 'morning rounds.'

Working with a team of designers, the Accelerator team pitched the idea to the MGH Telehealth department, which was at the same time working to build a platform to facilitate virtual family visits during the pandemic. Subsequently, the Accelerator and MGH Telehealth co-led a one-month pilot of the concept in the pediatric ICU (PICU), where there was great interest among parents of the patients as well as the providers in the PICU. The results of the pilot impressed patients' families, providers, and as a result, the MGB's Virtual Care leadership, has approved that the 'family rounding' functionality ideated, developed and piloted by MGH Springboard Studio will be built into the next deployment of MGH Telehealth's platform.

In one particularly emotional example of the 'human' component of technology, our system enabled the family of a heavily sedated child to be present via videoconference when he regained consciousness. The moment was especially meaningful when the child gave his family a 'thumbs up' on the video stream. "We're coming there right now," the mother told him, through tears.

Patient Agenda Cards

The idea of helping patients set more clear agendas for brief meetings with their primary care physician (PCP) originally stemmed from a 2019 WeSolve Sprint to improve the 'Outpatient' Experience at MGH. Following that Sprint, MGH Springboard's Accelerator team partnered with the Office of Patient Experience's 'What Matters To You Campaign' to initially design the branding and marketing materials for the initiative. Then the MGH Springboard incorporated feedback from several departments within MGH and developed the Agenda Card. The project was piloted by three groups within MGH pediatrics, and the results were used to develop subsequent materials still in use throughout the hospital.

iSolve Awards

In June of 2021, the Springboard Studio launched the first request for proposals (RFP) for the iSolve Awards. iSolve is a program open to ALL Mass General Hospital and Mass General Physicians Organization employees who have an idea to make health care more user-friendly. Forty-seven applications representing over 200 team members from across 23 departments, outlined specific problems to be solved and ideas for solutions. From this pool, a team made up of leaders from MGB Innovations, an MGH hospitalist and innovation leader, as well as outside advisors from Novartis and Abiomed chose 11 finalists, five of whom were chosen as Grand Prize winners, receiving $20,000 in funding and six months of acceleration support from the Springboard Studio. Below are descriptions of the five Grand Prize winners.

Community Care in Reach

A mobile community health service line designed to create a more patient-centric approach to care and remove barriers to essential health access by bringing the doctors to where the patients are.

Team Representatives:

Elsie Taveras, MD, MPH – Chief Community Health Equity Officer at MGB; Executive Director of Kraft Center at MGH; licensed pediatrician

Craig Regis, MGH – Program Manager of Kraft Center

Priya Sarin Gupta, MD, MPH – Physician and Clinical Director of NIH-funded RADx-UP Initiative for mobile COVID testing and vaccines

Core2U

A digital, self-managed physical therapy and exercise management experience specifically for pregnant and postpartum women designed to prevent and restore common musculoskeletal issues that

are associated with pregnancy and that prevent women from living active and healthy lives.

Team Representatives:

Dr. Miho Tanaka – Founding Director of the Women's Sports Medicine Program at MGH

Michele Gagne Wertz – Experienced non-profit leader, athlete and mother of three. Managing Director, MGH Development

Disati Medical

A non-invasive monitoring device that measures thoracoabdominal asynchrony (TAA) to quantify respiratory effort objectively and take the guess-work out of respiratory care.

Team Representatives:

Ryan Carrol MD, MPH – MGH pediatric intensivist and respiratory tech innovator

Zoe Wolszon, MBA, MS – Experienced startup operator and former BCG consultant

Sope Eweje – MIT-trained engineer & medical student with device development experience

SAMBA (System to Address and Monitor Brain Activity)

A wireless, wearable electroencephalography (EEG) that attaches to the patient with a single lead, without the need to shave the head, and uses artificial intelligence-based algorithms to track brain activity in patients at risk for delirium. The solution's early data suggests it can predict delirium and chart the course of their transient cognitive decline.

Team Representatives:

Eyal Kimchi, MD, PhD – MGH Neurology

Sydney Cash, MD, PhD – MGH Neurology

VGV Patient Engagement

A Lifestyle Medicine program in primary care at the MGH-Revere HealthCare Center (CORE Health) that assists patients in transitioning from in-person group visits to virtual group visits (VGVs). VGV Patient Engagement is looking to expand.

Team Representatives:

Jacob Mirsky, MD, MA – Primary Care Physician, MGH Revere HealthCare Center; Medical Director, MGH DGIM Healthy Lifestyle Program

Barbara Canada, MBA – Assistant Administrative Director, MGH Revere HealthCare Center; Program Director, MGH DGIM Healthy Lifestyle Program

MGPO Award Winner

Rx Stars

An online platform and mobile application (mentioned earlier in the "Accelerator" section) that combats burnout in the ED by inviting health care providers to join a fun and interactive mobile community centered around sharing public praise among their co-workers. This award comes with funding from the MGPO and six months of support from the Springboard Accelerator. This team received acceleration support prior to applying to iSolve.

Team Representatives:

Michael Loesche, MD, PHD – Emergency Medicine, PGY4

Todd Jaffe, MD – Emergency Medicine, PGY4

Valerie Dobiesz, MD – Emergency Medicine

iSolve 'Finalist Award' Winners

Finalists award winners received $1,000 from MGH Springboard Studio and free pitch-coaching provided by PitchDNA, a terrific partner of the Springboard Studio.

Corverix: A mobile application that aims to prevent heart disease that connects users to a virtual cardiologist through a wearable device. This team received acceleration support prior to applying to iSolve.

Fastline: A device designed to reduce injuries that occur during central venous catheter placement by allowing doctors to place a central venous guidewire with one hand using intuitive, ergonomic movements.

Firefly: A digital application that allows early communication, alert notifications and simple crowdsourcing of an evolving high-risk clinical situation or patient decline.

SafeCath: A novel internalization mechanism that will improve the safety of urinary catheterization and reduce cather-Induced trauma.

MassArt Collaboration

In addition to the five iSolve projects that received funding, two projects have been developed further through a collaboration of the Springboard Studio and a Massachusetts College of Art & Design (MassArt) Maker Studio course. One project addressed the issue of coping with a patient's walker when they also utilize a wheelchair. MassArt students spent the semester designing the "Flip-it to Clip-it" hook to easily attach the walker to the wheelchair even while in use.

A second project concerned the care of premature babies in the Neonatal unit. Best practice for premature newborns requires that the umbilical cord remain uncut for a significant period of time. This makes it difficult to weigh, wash and otherwise care for the infant who remains attached to the mother. MassArt Maker Studio students developed a tray that can balance on the mother's legs, keeping the baby stable while needed procedures are performed.

The MassArt students worked closely with both Mass General providers to develop these prototypes and ensure they meaningfully solve for the challenges identified. This partnership is a terrific example of the power of bringing together different disciplines to solve for health care challenges.

Students presented final prototypes and design research at the MassArt Maker Studio final critique.

Impact

We combine disciplined experimentation with rigorous evaluation of all that we do.

In July 2021, JAMA Open Network published our evaluation of the Hexapod COVID-19 Testing Booths the Springboard team designed and implemented in partnership with Healthcare Innovation Partners in 2020. The Hexapods, which remain in use throughout MGH, are a great example of the value of engaging frontline providers in human-centered design and rapid cycle innovation.

In our evaluation, we found each Hexapod:

decreased use of gowns up to

97%

increased testing capacity up to

354%

each booth saved between

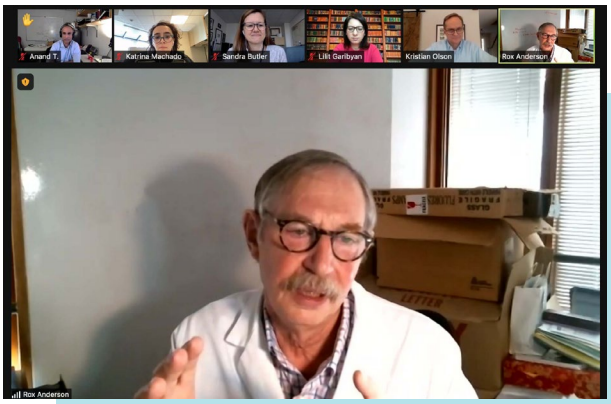
$333k - $1.7M

annually for MGH/MGB because of increased efficiencies and decreased PPE

Co-Creation Network

We convene a diverse and collaborative set of stakeholders with a goal of impactful innovation.

Our co-creation network pillar is one that threads throughout all of our work. This year, in partnership with the MGH Center for Faculty Development and the Magic Wand Initiative, we launched the 'Virtual Water Cooler' speaker series with the goal to demystify innovation for Mass General providers who are interested but not quite sure where to start. In additional to demystifying content, the Virtual Water Cooler series aims to be an informal space where like-minded innovators can meet each other, building a community of innovators across Mass General.



Dr. Rox Anderson demystifies intellectual property in a recent Virtual Water Cooler speaker series.

Get in Touch

Are you interested in making healthcare more user-friendly with us? We want to hear from you. Contact us via our website at **mghspringboardstudio.org** or email **mghspringboardstudio@mgh.harvard.edu**.