CAMTech UGANDA Global Surgery Hack-a-thon

International innovation competition builds mobile applications for trauma, tools to diagnose high-risk pregnancy in the community, and low-cost sterilization techniques

Mbarara, Uganda, 29 August 2016 – During the weekend-long CAMTech UGANDA Global Surgery Hack-a-thon, clinicians, engineers, entrepreneurs, students and designers spent 48 hours developing innovative medical technologies to improve surgical care in resource-limited settings. More than 250 participants from over 30 universities and organizations from across Africa, North America and Asia convened at Mbarara University of Science and Technology (MUST) to collaborate with experts and create innovations with the potential to shift the global surgical paradigm for patients around the world.

The Consortium for Affordable Medical Technologies (CAMTech) is a global network of academic, corporate, and implementation partners whose mission is to build entrepreneurial capacity and accelerate medical technology development through an open innovation platform. CAMTech innovators who come from public health, engineering and business work with end-users in low-and middle-income countries (LMICs) to develop disruptive innovations that have the potential to achieve widespread public health impact. CAMTech UGANDA is administratively housed at MUST and supports local innovators to transform ideas into solutions that can revolutionize health outcomes for people living in Uganda and across the globe. The event was organized through support from Massachusetts General Hospital Global Health, with sponsorship from The Babson Schlesinger Fund for Global Healthcare Entrepreneurship, Safe Surgery 2020, the GE Foundation, and Medtronic. Other sponsors included the United Nations Population Fund (UNFPA), Coca Cola, the Research and Education Network for

Participants worked around the clock to identify critical healthcare challenges, form multi-disciplinary teams, prototype solutions, and develop business models before presenting their ideas to an expert panel of judges reflecting CAMTech’s cross-sector approach to innovation.

“This was our fourth medtech hack-a-thon at MUST, and every year the solutions amaze even more,” said Dr. Data Santorino, CAMTech UGANDA’s Country Manager.

Prior to the hack-a-thon, CAMTech UGANDA hosted a Clinical Summit, featuring panel discussions with surgical experts sharing experiences from the field. Common challenges in both planned and trauma/emergency surgery included chronic shortages in medical personnel, equipment, and supplies combined with ineffective systems to support primary prevention, early diagnosis, and effective referral networks. CAMTech UGANDA also organized visits to four local clinical sites where participants were able to hear directly from healthcare workers about the challenges they face in delivering effective surgical care. Innovative surgical devices were presented during an evening Technology Showcase, including the WiCare Wound Pump and a low-cost 3D anatomy printer, to orient and inspire participants to the innovation process.

A total of 36 teams presented novel solutions to address critical challenges, including minimally-invasive locators to facilitate IUD removal, locally-produced stabilizing splints for fractures, mobile online safe surgery checklists, and single-use protective wraps to encourage use of helmets on motorbike taxis. The 2016 hack-a-thon awarded over $2,500 (approximately 8.8 million UGX) in prize money to the following teams:

**$1,000 Prize** (offered by the Babson Schlesinger Fund for Global Healthcare Entrepreneurship):
TraumaCall: a mobile application to quickly connect trauma patients to local healthcare providers

**$850 Prize** (offered by Safe Surgery 2020/GE Foundation):
Mediclave: a low-cost, solar autoclave for resource-limited settings

**$750 Prize** (offered by the United Nations Population Fund):
FIST App: a predictive algorithm and mobile application for community health workers to identify high-risk pregnancies

**CAMTech 1st Prize** ($782 USD, UGX 2,500,000)
Contraceptive Implant Finder (CIF): a device to simplify hormonal implant retrieval
**CAMTech 2nd Prize** ($625 USD, UGX 2,000,000)
iDrain: a simple machine that can be used to remove fluids from the pleural space

**CAMTech 3rd Prize** ($469 USD, UGX 1,500,000)
Amagara: a digitised checklist that is used before, during and after surgery

**CAMTech 4th Prize – Simplest Innovation** ($219 USD, UGX 700,000)
Boda Boda Bonnet: a safe way to wear and share helmets amongst different boda boda users to reduce the risk of injury and death due to head trauma

“We feel so excited to win; our team is so passionate about making a solution to help victims of accidents and other traumas,” said Pia Nankinga, a business student majoring in accounting at MUST and team member of TraumaCall. “We put our heads and hands together to make a practical solution to a terrible problem. We cannot thank the organizers, CAMTech UGANDA, and Babson College enough for the opportunity. And our special thanks to Mbarara University, the greatest institution in the world.”

In addition to this year’s winners, CAMTech UGANDA will offer all hack-a-thon participants the opportunity to compete for $2,500 USD in post-hack-a-thon awards to teams that make the most progress within 60 days of the event, business mentorship, and collaboration with global and local experts in healthcare, business, engineering, and technology through the **CAMTech Online Innovation Platform**.

“I learned how to look for a solution to the most challenging issues around surgery in a collaborative, multi-disciplinary, and highly interactive process,” said Dr. Tadele Bogale, Deputy Country Director, Jhpiego Ethiopia. “I also better appreciate the role a pre-service teaching university can play in driving the innovation process to address the prevailing challenges facing the nation, and this can successfully be replicated in Ethiopia.”

“Through the Global Surgery Hack-a-thon, we furthered our mission to activate entrepreneurial leaders in global health,” said Wiljeana Glover, Assistant Professor of Technology, Operations, and Information Management at **Babson College**. “We learned about the need for innovation first-hand from medical providers and through direct observation at hospitals. We shared our views on entrepreneurial thought and action and systems thinking in product, service, and business design. Seeing Babson students with students and professionals from Uganda and abroad co-creating clinical, social, and economic value simultaneously via interdisciplinary teams reaffirmed our commitment to partnering with organizations like CAMTech to impact healthcare and economic development worldwide.”

“At Safe Surgery 2020, one of our key strategic goals is to enable increased innovation in surgical and anesthesia care,” said Cheri Reynolds, Senior Program Manager for **Safe Surgery 2020** and Assist International. “Sponsoring and attending the CAMTech Global Surgery Hack-a-thon was a pleasure for our team – we will take away not only
ideas for surgical innovation, but also approaches we can use with our partners to generate locally-appropriate, out-of-the-box solutions we face in our work in Ethiopia and beyond.”

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CAMTech UGANDA is part of the Consortium for Affordable Medical Technologies (CAMTech) and is administratively housed at Mbarara University of Science and Technology (MUST). CAMTech UGANDA has built an innovation ecosystem at MUST that includes monthly Innovation Cafes to discuss challenges in health and an Innovation Office that helps innovators transform their ideas into concepts. CAMTech UGANDA’s Co-Creation Lab, a rapid prototyping facility, enables innovators to develop functional prototypes that have since attracted funding from various donor agencies and investment groups.

The Consortium for Affordable Medical Technologies (CAMTech) is a global network of academic, corporate, and implementation partners based at the Massachusetts General Hospital. CAMTech’s mission is to build entrepreneurial capacity and accelerate medical technology innovation to improve health outcomes in low- and middle-income countries. CAMTech’s approach enables co-creation where innovators across public health, engineering, and business engage with LMIC end-users to develop disruptive medical technologies to achieve widespread public health impact. Since 2012, CAMTech has brought together over 2,500 innovators from more than 500 clinical, academic and commercial organizations to participate in medtech hack-a-thons, award programs and entrepreneurial-building initiatives. These efforts have helped spawn over 350 new technologies addressing intractable problems such as newborn asphyxia, post-partum hemorrhage and cervical cancer. CAMTech’s initiatives, including its newly launched Online Innovation Platform, help connect and support a global community of innovators working to improve health in developing and emerging markets.