



University of Utah School of Medicine
Center for Global Surgery
30 N 1900 E, RM 3B110 SOM
Salt Lake City, Utah 84132
801-581-7304

medicine.utah.edu/globalsurgery

SAVING LIVES STRENGTHENING LIVELIHOODS



**CENTER FOR
GLOBAL SURGERY**

THE CHALLENGE

PREVENTABLE DEATH AND DISABILITY

5

BILLION PEOPLE
*nearly 2/3 of the
world's population*

lack access to
timely surgery



10%

of the world's deaths
result from injuries —
more than from HIV,
malaria and
tuberculosis combined

\$12

TRILLION

economic cost by
2030 from
lack of access to
surgical care

1.87

MILLION

more surgical,
anesthesia and
obstetric/gynecologic
providers are needed to
meet the world's need

19

MILLION PEOPLE

die annually
from lack of quality
surgical care



1

BILLION WOMEN

worldwide do not
have access to emergency
obstetrical care



33

MILLION PEOPLE

face financial ruin
each year due to
cost of surgical care

90%

of maternal deaths
can be prevented with
surgical care

\$10

in economic
productivity for
every \$1 spent
on strengthening
surgical capacity

THE SOLUTION

INNOVATIVE INVESTMENTS TO EXPAND SURGICAL ACCESS

The University of Utah Center for Global Surgery is committed to discovering ways to make timely, essential and quality surgical care accessible and cost-effective across the planet.

Our multidisciplinary faculty, residents and medical students collaborate tirelessly to solve some of the most persistent challenges in global health. We lead efforts to strengthen health systems in resource-constrained areas. We provide crucial training and technical support while contributing to the education of future global health care leaders at our own university.

Now is the time to expand our role in discovering and sharing new ways to reduce costs while improving the effectiveness and availability of health care — worldwide as well as here in the United States.



Our Goals

- » Enable access to essential surgical and reproductive care through innovation, research and advocacy
- » Train the next generation of surgical leaders
- » Create surgical partnerships that lead to sustainable impact around the world.

TIMELY, APPROPRIATE

SURGICAL CARE SAVES LIVES, prevents disabilities, builds communities, expands economies and engenders hope.

The University of Utah Center for Global Surgery aims to make surgical care more accessible, equitable and affordable by engaging in academic partnerships focused on building surgical systems.

Founded in 2011, ours is the oldest global surgery center in the United States and emphasizes a broad, multidisciplinary framework to build surgical capacity and ensure sustainable impact. Across American academic institutions, we have led the change from the historic paradigm of mission-style outreach to a new exemplar supporting education, quality improvement, innovation and local capacity expansion — core strengths of the University of Utah.

The Center for Global Surgery has pioneered the whole-system approach to surgical services management, offering virtual continuing education programs to support surgical *systems* development in more than 30 countries. Our emphasis on health systems is essential to our work in reducing health *disparities* around the world, building toward a future in which care provided at a small, remote hospital can be as safe — and effective — as that offered at a major medical center in a large urban setting.



Supported by the departments of Surgery and of Obstetrics and Gynecology, the Center anchors critical partnerships to address common surgical problems worldwide. These range from breast and cervical cancers to trauma from road-traffic injuries, hernias and birth defects. We support local health systems to become more efficient and effective at delivering surgical care. In doing this, American surgeons, obstetricians/gynecologists and trainees learn to address the urgent global health challenges of our time.

Sudha Jayaraman, MD, MSc, FACS
Director, Surgery, Center for Global Surgery

Kate Harris, MD
Director, Obstetrics and Gynecology, Center for Global Surgery

Raymond R. Price, MD, FACS
Vice Chair, Global Health, Department of Surgery

Catherine deVries, MD, MS, FACS
Founding Director, Center for Global Surgery

"I believe that the cutting edge of surgical progress must be made available and affordable to all people in all places."

Dr. T. E. Udwadia
Father of laparoscopy, India



HELPING
HOUSEHOLDS
RECOVER

Health problems easily treated in high-resource countries can devastate families and even cost lives in many low- and middle-income communities. When untreated traumatic injury strikes a breadwinner, it can instantly remove a family's main source of income, causing financial catastrophe. When a mother diagnosed with an aggressive cancer must relinquish care of her children to others in order to survive or palliate the disease, the family dynamic is disrupted. Struggling households are best served when health care systems are equipped to address surgically treatable conditions.

INNOVATING PROCESSES & SYSTEMS



Bleeding can be a life-threatening complication after delivery. Our collaboration around quality-improvement programs is contributing to high-quality care for pregnant women having complications. Our work has aligned with the Ministry of Health to expand quality improvements across the region."

*Marta McCrum, MD, MPH
Assistant Professor of Surgery*



"This [quality-improvement] collaboration has set the pace for improving patient care in our society. We have been able to reduce post-operative morbidities and mortality because of the repeated coaching and identification of areas of improvement."

*Taurus Valmont MD
Volta River Authority Hospital*

Innovation within health care applies as much to process as it does to technology. For remote and resource-poor areas, we harness both sources of transformation to bring health care within reach. As technologies and improvements make high-quality care more affordable, the Center for Global Surgery takes the next step to scale a workforce trained for innovation — building upon foundational tools and technology created by University of Utah faculty. Teaching the teachers builds capacity sustainably. Our impact is amplified by nurturing training programs that reach more people in need.

Technologies invented at University of Utah

1. The low-cost Xenoscope™ makes minimally invasive surgery possible at a fraction of the cost of traditional laparoscopic surgery.
2. The Cinluma™ is a portable, reusable, battery-powered device to treat precancerous cervical tumors that eliminates key obstacles to diagnosis and treatment for patients who are otherwise far from specialized care.



ENHANCING WOMEN'S CARE



Women and girls are constantly at the end of the line in the family in terms of getting health care and obtaining an education. When you have healthy women, you have healthy families.”

Par Royer, MD
Department of Obstetrics and Gynecology
University of Utah

The burden of maternal deaths falls almost entirely on low- and middle-income countries, where medical care is scarce and resources limited. Women in these settings also have limited opportunities for contraception and preventive cancer screenings, as well as operations for gynecologic cancers and other surgical conditions.

Global health leaders in University of Utah’s Department of Obstetrics and Gynecology strive not only to expand access to prompt surgical care but also to improve the availability of women’s health specialists. These efforts strengthen families and communities by reducing maternal mortality and morbidity, and increasing cervical cancer screening and HPV vaccination to lower the greatest cause of cancer deaths in women.

Projects include developing a collaboration with the University of Rwanda to address current needs such as gynecologic oncology and other subspecialty training, multidisciplinary teaching conferences and research initiatives.

A strong medical system supporting women’s health is essential to creating equity and parity for women – as wage-earners, land owners and political officers – and a world in which they may live freely and in safety.



1,000

women
die every day
in childbirth or
from a pregnancy-
related cause

95%

of maternal deaths
occur in low-
or lower-middle-
income countries



80%

of cervical cancer
cases occur in the
developing world,
the leading cause of
death from cancer
among women

68K+

in Mongolia have directly benefited from a program to introduce and scale up laparoscopic surgery supported by the Center for Global Surgery

19 OF 21

PROVINCES
IN MONGOLIA

now have access to minimally invasive gallbladder surgery



80%

of gallbladder-removal surgeries in Mongolia are performed laparoscopically compared with just 2% in 2006 before the Center helped to introduce the procedure

Just one day after surgery, Oyunmaa was herding her animals in the South Gobi Desert in Mongolia.



PHOTO: JONATHAN ZADRA

TRANSFORMING LIVES



Smaller incisions mean a faster recovery. In many parts of Mongolia, if you aren't working, you aren't putting food on the table. Our partnership with Mongolian surgeon-leaders has enabled the safe adoption of minimally invasive techniques across the country."

Jade Nunez, MD, FACS
Department of Surgery



"Surgical care was very rudimentary in Mongolia. Since 2005, when your teams [first] came to Mongolia and provided training, we now perform all kinds of operations."

Sergelen Orgoi, MD, PhD, FACS
Ulaanbaatar, Mongolia

Since 2006, teams from the Center for Global Surgery have partnered with their colleagues to expand laparoscopy throughout Mongolia. Previously, only 2 percent of gallbladder removals in the country used this minimally invasive technique — and only in the capitol city, Ulaanbaatar. Today, the procedure is available in 19 of 21 provinces and is used in four-fifths of cases.

Oyunmaa, who lives in an isolated area in the South Gobi Desert, received this advanced treatment in Dalanzadgrad, a 61-kilometer journey accessible only by dirt roads. Just one day after her gallbladder removal, she was back home with her family and tending to her animals. She previously would have had to travel another 597 kilometers to the capitol and spend a week in the hospital — and many more at home recovering from the operation.

Seventeen years earlier, Oyunmaa's younger sister had her gallbladder removed through a large incision, well before Dalanzadgrad had the equipment and doctors to perform laparoscopic surgeries. Her recovery time was significantly longer.

"I never expected to need the same surgery as my sister," Oyunmaa says.



UTAH'S WORLDWIDE IMPACT

Our strategy for global impact focuses on forming partnerships with governments, nongovernmental organizations and academic hospitals to support surgical systems based on pressing local needs. The Center for Global Surgery brings together clinicians, policymakers, academics, technologists and students from around the world to address how health systems can be redesigned to improve care and widen its reach.

- Collaborator Headquarters
- Primary Engagements
- Affiliated Activities



Strategic Partnerships and Collaborations

- » World Health Organization, Geneva, Switzerland
- » American College of Surgeons' Operation Giving Back and Committee on Trauma, Chicago
- » West African College of Surgeons, Lagos, Nigeria
- » College of Surgeons of East, Central and Southern Africa
- » Consortium of Universities for Global Health, Arusha, Tanzania
- » WHO Collaborating Center on Emergency and Essential Surgical Care, Ulanbaatar, Mongolia
- » Global Surgery Student Alliance, Boston
- » Consortium of Universities for Global Health, Washington, D.C.
- » Global Alliance for Surgical, Obstetric, Trauma and Anaesthesia Care (G4 Alliance), Chicago
- » Society of American Gastrointestinal and Endoscopic Surgeons, Los Angeles
- » Association of Academic Global Surgery, Chicago
- » Geneva Foundation for Medical Education and Research, Geneva, Switzerland
- » Alliance for International Medicine, Salt Lake City

BUILDING CAPACITY IN WEST AFRICA

For more than a decade, University of Utah has helped medical institutions in West Africa increase the size of their surgical workforces, improve clinicians' technical skills and ensure the long-term sustainability of their surgical systems. Our West Africa Satellite Office in Ghana is central to these efforts.

Through our partnership with Ensign Global College, our exceptional public health faculty and board-certified surgeons serve as advocates to help launch key initiatives for improving population-health outcomes across the region. We have established numerous multiyear memoranda of understanding with local health organizations to expand surgical systems development throughout West Africa.



Our West Africa Satellite Office in Ghana (far left) provides an ideal base for collaborating with health system leaders throughout the region. Dr. Edward Sutherland (left) and Dr. Grace Ayensu-Danquah (right) serve as site directors.



Breast cancer is the most common cancer and the leading cause of cancer-related death for women in Ghana.

300+

hospital facilities form the referral pathway for breast cancer patients in Ghana

77%

of women in Sub-Saharan Africa have advanced disease (stage III or IV) at presentation



2021

countrywide surveys of breast and cervical cancer services completed in Ghana and the Gambia



Timely and quality care for injured patients decreases death and disability, supporting families to continue to have meaningful and productive lives.

EXPANDING TRAUMA CARE IN EAST AFRICA



Dr. Jayaraman scrubs in with a colleague in East Africa. The Center for Global Surgery continues decade-long work with colleagues in East Africa to enhance trauma care in the region.

Emergency medical conditions account for over half of all years of life lost in low- and middle-income countries — with trauma, ischemic heart disease, respiratory infections and strokes accounting for a majority of these deaths. Yet, formal trauma and emergency medical systems are rare in most of these countries. Locating patients where street addresses are not well-established remains an obstacle in many areas.

Dr. Sudha Jayaraman and Dr. Menelas Nkeshimana from the University of Rwanda are leading a global team to develop an effective country-wide emergency dispatch system that utilizes innovative technology to reach patients quickly and get them to the right hospital at the right time.

This work represents an important new expansion of the Center's activities to include new partners in Rwanda. We aim to foster a national trauma-quality improvement process in collaboration with the University Teaching Hospital and Rwanda Biomedical Center. By enabling surgeons, physicians and nurses to create locally relevant best practices for trauma care, we are helping establish a critical mass of local trauma experts who will save lives and create sustainable long-term impact for the country.

CHALLENGING THE NORM



By collaborating and sharing findings with colleagues around the globe, we can make advances much more quickly and disseminate them more effectively to ensure better health outcomes for people everywhere."

*Robert Silver, MD
Chair, Department of Obstetrics and Gynecology*



"When our faculty join with global stakeholders to define an opportunity or problem, we can leverage our collective expertise to bring forth solutions and study the effectiveness of these solutions."

*Robert Glasgow, MD, MBA, FACS
Chair, Department of Surgery*

The lack of affordable care throughout the world remains a problem of tremendous complexity. It will be interdisciplinary influencers across the globe — each one addressing disparities of health care access in their own regions — who will challenge this norm through collaborations and innovations that reshape the future of health care.

University of Utah is at the forefront of disrupting entrenched challenges through international partnership with surgeons, physicians, policymakers, technological innovators, business leaders and philanthropists.

The Center for Global Surgery unites experts on all sides of the patient experience as big-picture thinkers dedicated to the cause of improving quality, cost and access to care. Together we are fostering innovation around the world as well as at home.

JOIN US

TOGETHER WE ARE BUILDING FOR THE FUTURE.

We are recruiting and supporting inspired faculty to train the next generations of global health leaders. Research, innovation, community engagement and international collaboration are the strengths we bring to patients worldwide. Join us in our commitment to discover new and more impactful ways to care for underserved patients and create local capacity through surgical training.



Please consider working with the Center for Global Surgery to save lives and decrease disability by:

- » Investing in the Center's endowment to ensure sustainability of global partnerships and fuel long-term impact
- » Strengthening specific global collaborations through project funding: i.e., decreasing death and disability from trauma; reducing late-stage female cancers; expanding modern high-quality health systems; launching standardized in-country surgical training programs
- » Establishing an innovation fund to develop new devices and approaches to make surgery more affordable
- » Creating faculty endowments to expand the capability and global impact of UofU faculty
- » Supporting trainees from the UofU and global partner sites to learn from global surgery experts by creating a named scholar track

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