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IMPACT

Sustainable Strength

Global Emergency Care Initiative founder helps empower underserved nations to care for themselves

In some parts of Africa, the journey to receive emergency care can take days. Emilie Calvello-Hynes, MD, will never forget the times she waited in vain at a remote healthcare facility to receive a patient who did not survive the trip.

"They often needlessly die, suffering and alone. We know the solutions to these problems," she says. "Now it is time to figure out how to implement the interventions necessary so that all patients everywhere can have access to timely, quality emergency care."

Through a shared vison with Richard Zane, MD, the George B. Boedecker Professor and Chair of the Department of Emergency Medicine at the University of Colorado School of Medicine, and backed by seed funding from the department, Calvello-Hynes founded the Global Emergency Care Initiative (GECI) in 2018.

Lead by Calvello-Hynes and other emergency care experts on the faculty, the GECI is focused on preparing countries with limited resources to care for themselves. In these nations, access to pre-hospital care (including clinics and transportation) is at best limited. Patients get to treatment when and how they can, often traveling by taxi or on foot. Even if patients arrived faster, their future is still dire if they can't receive specialized emergency care.

It's just one of the deficiencies plaguing under-resourced health care systems. Calvello-Hynes spent much of her early career providing medical care amid chaos. Disaster response in non-governmental organizations (NGOs) is not set up as proactive, so instead each humanitarian

crisis is addressed as it occurs. In the 2010 Haiti earthquake, she witnessed NGOs reacting as quickly as possible, pulling together all the external resources they could gather and bringing them to disaster sites. She later studied the efficacy of typical NGO disaster response teams, publishing her findings.

> "IT STRUCK ME DRAMATICALLY IN THE FIELD THAT THIS WAS AN UNSUSTAINABLE MODEL. THIS MODEL WAS NECESSARY TO AVOID IMMEDIATE MORBIDITY AND MORTALITY, BUT WHAT IF WE COULD INSTEAD CREATE CAPACITY IN COUNTRIES TO BE ABLE TO RESPOND TO THEIR OWN EMERGENCIES?" CALVELLO-HYNES OBSERVED.

Calvello-Hynes pivoted her career after this realization, shifting her focus from humanitarian crises to systems development work. Capacity-building would speed up emergency response time, improve resource allocation, and lead to sustained improvement in quality of care.

The academic and practical arms of global emergency care have long been separated, with the best theoretical practices not suited for effectiveness in the real-world settings. Calvello-Hynes' group at the GECI seeks to bridge this divide, seeking pragmatic solutions designed for low-resource areas.

FORMULA FOR SUSTAINABLE CHANGE

The team's approach is to develop and implement tailored educational tools that are field-tested for value and sustainability. Working in partnership with host countries throughout the globe, the team is informed by extensive, on-site research to ensure systems are built to meet a populations' unique needs.

When the University of Colorado Center for Global Health approached the GECI about a collaboration to build an emergency care system in Zambia, the team quickly got to work. Beleaguered by poor road infrastructure and lack of modern safety mechanisms, Zambia was experiencing a disproportionately large number of multi-vehicle accidents yet there were no emergency care specialists in the entire country.

"They frequently had mass casualty incidents with 40, 50, 60 people being injured at a single time," Calvello-Hynes says.

The Ministry of Health sought the GECI's help increasing frontline worker capacity. A conventional approach to Zambia's problem would have sought to re-create a western emergency care system. But Calvello-Hynes and her team knew that this would not work.

"What used to be brought to these locations were things like advanced trauma life support or advanced cardiac life support. The basic premise of those courses is that you have enormous health facility infrastructure, you have monitors, you have electricity, you have

critical care, you have a surgeon standing by," Calvello-Hynes says.

"This assumes you have all these things which don't exist. Exporting those type of courses into those type of locations does not work."

Instead, the GECI took a different track. Previous research by GECI faculty demonstrated the efficacy of the World Health Organization's Basic Emergency Care course in resource-limited settings. When implemented in Uganda, mortality was reduced by a staggering 50 percent. They began by training Zambian healthcare workers in the course, eventually training them to teach the course themselves. Through a "train the trainer" mentorship, GECI faculty facilitated the transition to a completely local model perpetuated by and for Zambians.

"When a mass-casualty incident comes in, they feel empowered and able to deal with it, both in terms of triage and the actual medical care for those patients," Calvello-Hynes says.

The GECI's partnership with Zambia has been a shining success for the program. Frontline emergency care providers are better trained and more confident. Local patients receive better care, and local emergency care trainers and leaders ensure that these improvements are sustained.

The GECI and Ministry of Health are now rolling out the CARE Emergency Toolkit—a training course designed to help workers respond to humanitarian crises—in 10 Zambian hospitals. They will then study the effect it has on clinical care provision.

Leading the effort is Mwiche Chiluba, MD, the only emergency specialist in the country, who was mentored by Calvello-Hynes and other GECI faculty. Chiluba initially collaborated with the GECI to launch some of the first Basic Emergency Care training courses, later charting additional courses for future development.

"She's championing setting up a specialist training program in country. She has rolled out triage to several emergency care units across the country," said Calvello-Hynes. "If that were me, I'd be completely overwhelmed, but she managed it with incredible grace, and we were able to partner effectively with her."

By stepping into a leadership position, Chiluba is guiding the transformation of emergency care in Zambia.

> "IT HAS BEEN WONDERFUL MENTORING DR. CHILUBA AND HELPING AUGMENT HER CAREER TO WHERE SHE IS REALLY THE CHAMPION FOR HER COUNTRY. THAT'S WHAT WE AT GECI REALLY CARE ABOUT," CALVELLO-HYNES SAID. "WE DO NOT WANT TO BE THE ONES OUT FRONT. THE FASTER YOU CAN WORK YOURSELF OUT OF A JOB, THE BETTER. THAT'S WHAT SUSTAINABLE CHANGE IS."

GLOBAL HEALTH STARTS AT HOME

Within the School of Medicine, the GECI prepares medical students, residents, and fellows to practice global health. Faculty members teach global health curriculum in the Colorado School of Public Health and work with the University of Denver's School of International Studies to hold large-scale humanitarian crisis simulations for medical residents. This extensive network of support and preparation represents one of the ways in which global health has developed.

Another example of how the field has matured is a widening perspective of what global health work means from the local lens of refugee populations, including the recent influx of Afghani newcomers to the metro Denver area.

"My most recent hire is going to take this issue on as a targeted project. We're not just flying overseas and doing something. Rather, many of those people are coming here. How do we serve their needs, how do we advocate for them and better understand what their needs are?" Calvello-Hynes asks.

The GECI has expanded substantially in the handful of years since it was established. Now a large program within the Emergency Medicine department, it employs seven faculty members, and has its own fellowship program and residency track. Yet funding streams are limited, and the GECI is primarily backed by individual faculty members' research grants, supplemented by private donations.

GECI faculty leverage their networks to stretch their funding further. Rather than buying vehicles, they borrow. Rather than renting locations for training and lodging, they rely on the hospitality of local partners.

> **"EVEN WHEN WE GET SMALL AMOUNTS OF MONEY, WE'RE ABLE TO USE THOSE FUNDS IN A WAY THAT DRAMATICALLY AMPLIFIES THEIR EFFECT," CALVELLO-HYNES SAYS.**

This efficient use of funds represents a deliberate break from the past, when efforts to improve global health often spent money inefficiently.

"In pre-hospital care, we want solutions that are reasonable and rational in resource-limited settings. That doesn't mean buying half-a-million-dollar ambulances and just plopping them down in a country, which believe me, has been done," Calvello-Hynes says.

This approach to global health is pragmatic and experience-informed, with an explicit focus on achieving lasting change. An important part of sustainability is ensuring that the GECI can continue to develop and evolve. ■