Global Critical Care

Global Critical Care: Key Articles You Missed from Around the Globe

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Critical care is time-critical care provided anywhere a critically ill patient needs it. Not exclusive to the intensive care unit, critically ill patients are pediatric, elderly, parturient, and adults. At the 2023 World Health Assembly, the "ECO" resolution was passed, vowing to strengthen health systems around the globe for the provision of **E**mergency, **C**ritical, and **O**perative care (*Intensive Care Med* 2023;49:1223-5). Significant as the first mention of "critical care" as a global priority, countries are now focused on implementing the changes needed to better care for patients in greatest need. With aging populations, rising noncommunicable disease burdens, epidemics and pandemics, violent conflicts, natural disasters, and increasing international migration, the global critical care burden and inadequate capacity to care for the critically ill affects us all. Here, we review and list key open-access articles from across the globe published in 2023 and summarize how the major takeaways apply to our perioperative practice (Table).

It could happen to you

Many of us assume that health systems in high-income countries are adequately resourced to care for critically ill patients and that those in low- and middle-income countries are ill-equipped. However, the pandemic brought into rapid focus the fragility of even the most highly resourced practice settings. During COVID-19, hospitals in Los Angeles ran out of oxygen, the most essential of medications (asamonitor.pub/4aOy0YF). Further, disparities in outcomes from critical illness continue to occur across demographic groups and the rural-urban geographic spread – despite the well-resourced systems within the United States (*Demographic Research* 2021;45:1185-1218).

With increasing noncommunicable disease burdens such as obesity, diabetes, cardiovascular and cerebrovascular disease, liver and kidney diseases, and trauma, the critical illness burden is rising. Even the wealthiest country in the world is not immune to the strain critical illness places on a health care system. Although lack of training programs and scarcity of trained intensivists plague many countries, the U.S. is also experiencing a physician shortage, especially in rural settings (*ATS Sch* 2023;4:1-3). Expanded access to fellowship training in the U.S. and other high-income countries for foreign medical graduates is one solution. This could increase the number of critical care physicians for the hosting countries during training, while contributing a higher number of trained intensivists in the trainees' countries of origin thereafter.

What do global critical care and scope creep have in common?

The U.S. is unique in its many pathways toward critical care medicine specialization. Fellowships often accept anesthesiologists, internal medicine, and emergency medicine physicians in addition to pulmonary and surgical programs. Simultaneously, there has been a rise in advanced practice providers advocating for their own independent billing and unsupervised practice. Conversely, in much of the world, anesthesiology is synonymous with critical care medicine. Anesthesiology training models in much of Europe include critical care as part of the core training program. As such, many resource-constrained countries follow this economical all-in-one training model. Unfortunately, there are far fewer trained intensivists in these settings, leaving training less robust than needed. In resource-constrained settings, such as Sub-Saharan Africa, the care of critically ill patients falls to anesthesia professionals, despite inadequate training in critical care medicine. It is here that scope of practice is relevant.

Although anesthesiologists are well trained in resuscitation and mechanical ventilation, care of the critically ill across the entire continuum, including discharge from ICU, requires more specialized training. As the calls to expand capacity and training in critical care medicine increase across underdeveloped health care systems, including the rural U.S., anesthesiologists must lead the way, lest others fill the gap. Anesthesiology physician-led critical care practice optimizes patient outcomes and strengthens our reputation as perioperative leaders. We must seize the opportunity to protect both our patients and our specialty.

We have a lot to learn from others

Frugal innovation, green practices, resource utilization, cost-savings – these are areas in which the U.S. health care system desperately needs to improve. These are also areas in which resource-constrained countries are better (*Crit Care* 2011;15:302). Early identification and rapid response, as defined by the Essential Emergency and Critical Care Network, or EECCnetwork, are low-cost solutions that potentially decrease the need for advanced, ICU-level care. These prudent solutions also decrease postoperative mortality and increase pandemic preparedness (*BMJ Glob Health* 2021;6:e006585).

Movements toward single-use items driven by concerns for safety and infection control have drastically increased landfill waste and carbon output associated with production. The pandemic compacted these problems as contaminated plastics were refused from recycling (*Int J Environ Res Public Health* 2023;20:4310). This is in stark contrast to the sterilized cloth drapes, reusable sterilized equipment, and judicious use of supplies and pharmaceuticals common when resources are more limited.

Professional societies have a role to play

The World Federation of Intensive and Critical Care serves as the central hub of critical care societies across the world. Additionally, committees on critical care medicine exist within many anesthesiology professional societies. The Society of Critical Care Anesthesiologists, the Society of Critical Care Medicine, and the World Federation of Societies of Anaesthesiologists may be the most recognizable to North American anesthesiologists. There is great potential for collaboration across professional societies, both in developing health care systems and those that are well-resourced. Global alignment is needed, but this is not a copy-paste scenario.

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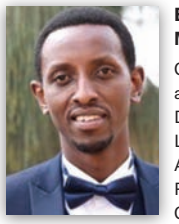

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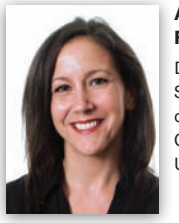

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Societies must work together for culturally cognizant approaches, developing the best solutions for diverse patient populations and practice settings. Too often, solutions offered by high-income countries misalign with the needs of their resource-limited colleagues. One example is demonstrated by the countless short courses and guidelines on triage and resuscitation, while there are too few on fundamental care for the 90% of critically ill patients found outside of ICUs. And, there are virtually no courses or training opportunities appropriate for low-resource settings addressing the daily care of patients necessary for discharge out of intensive care or to reduce the post-ICU syndrome that often follows (*Eur J Med Res* 2023;28:322).

Embedding critical care training earlier into medical and nursing schools, including the care of patients outside the ICU, would have greater impact on the culture of

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recognizing and caring for life-threatening conditions using basic equipment and fundamental skills that should be universally available. Professional bodies should encourage and advocate vigorously for review of the curricula in earlier stages of training. This should occur even outside times of crisis.

Global critical care is facing significant challenges and changes. The importance of critical care is not just in ICUs, but everywhere a critically ill patient is found. Aging populations, diseases, conflicts, and uneven access to more advanced health care add to the pressure. Even in wealthy countries like the U.S., we have seen vulnerabilities during events like the pandemic. Anesthesiologists must lead critical care capacity efforts by expanding their training to provide better care and also by learning from resource-constrained countries about efficient and cost-effective ways to care for patients. Collaboration between health care organizations worldwide is essential to finding solutions that work for everyone. It is encouraging that global critical care is evolving and gaining greater priority, but we must work together to improve care for critically ill patients around the world. ■

Article	Key Messages
Global critical care: A call to action (*Crit Care* 2023;27:28)	Global critical care is underprioritized, but the burden is likely increasing.
	Outside ICUs, foundational essential emergency and critical care are missing, complicating epidemiology, increasing the need for advanced-level ICU care, and worsening mortality due to failed or late presentations.
	Education and training are solutions, and context-specific research is needed.
Technical innovation in critical care in a world of constraints: Lessons from the COVID-19 pandemic (*Am J Respir Crit Care Med*; 2023; 207:1126-33)	COVID-19, although devastating, created an environment of learning and innovation.
	Constraints affect all health care systems, not exclusively those in low- and middle-income countries.
	Frugal innovation may better serve the majority of the critically ill patient population due to economic and access considerations.
Hospital readiness for the provision of care to critically ill patients in Tanzania – an in-depth cross-sectional study (*Research Square* 2023)	Resource constraints may result from a lack of equipment. However, it is more common that equipment is present but inaccessible.
A health systems approach to critical care delivery in low-resource settings: A narrative review (*Intensive Care Med* 2023;49:772-84)	The six World Health Organization (WHO) health system building blocks can be applied to critical care as a guide to health system strengthening.
The burden of critical illness among adults in a Swedish region – a population-based point-prevalence study (*Eur J Med Res* 2023;28:322)	10% of hospital patients are critically ill.
	90% of critically ill patients are actually found outside ICUs.
Development and delivery of a higher diploma in emergency medicine and critical care for clinical officers in Kenya (*Afr J Emerg Med* 2023;13:225-9)	There are considerable shortages in the trained critical care provider workforce.
	Novel approaches such as training nonphysician providers are being explored.
Challenges, obstacles, and unknowns in implementing principles of modern intensive care medicine in low-resource settings: an insider's perspective (*Intensive Care Med* September 2023)	Highly trained intensivists are often unrecognized, prone to burnout, and prone to emigrate from resource-constrained settings.
	It is the responsibility of political and health care authorities to recognize and retain highly trained specialists.
	International professional societies play a key role in global critical care capacity-building.
Critical care in Sub-Saharan Africa – where are we? A review (*Adv Med Educ Pract* 2021;12:237-43)	Despite having a disproportionate burden of critical illness, Sub-Saharan Africa lacks adequate capacity to care for these patients.
	Greater spending and governmental support are needed, as is insurance coverage for critical care.
	Corruption is a problem in many countries, limiting the procurement of adequate and appropriate equipment.

Table: Key Global Critical Care Articles in 2023

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is possible that a global perspective might encourage more support for integrated, physician-led care. Further, physician-led care must be advocated for in other countries, underscoring that the involvement of highly trained nurses and assistants enhances care, especially as global demands for perioperative care continue to increase.

In closing, I return to the state of affairs in the U.S. with food for thought. All of us in health care are familiar with the amalgamated term "provider." Professionals in other fields would never accept such a designation. In medicine, despite a significantly greater breadth and depth of knowledge and training, we seem to have acquiesced to our designation as providers. In our specialty, we have progressed from "anesthesia will come to talk to you" to "your anesthesia provider will be coming to speak to you." For generations, patients have known what the title "doctor" means. They may be unaware of the details of our education and training, yet it is clear to them and their families what a doctor's role is; they know that doctors are the most highly trained health professionals. Physicians are the best trained to make life-and-death decisions for patients and their families.

Soon, every advanced practice professional may be granted diplomas, titled as "doctor." In the coming years, the public, our patients, and our legislators will grow more confused and troubled, with everyone being labeled "a doctor." It is likely this confusion could be the stimulus for patients, even legislators, to request and demand physician-led care for themselves and their families. We hope to see all of this play out in the safest and best outcomes for patients in the U.S. and across the oceans as well. ■