



Critical Foundations of Care – Global Assumptions Harm Critically Ill Patients

Ana Maria Crawford, MD, MSc, FASA Ninza Sheyo, MBCHB, MPH, FCA (ECSA)

Clinical vignette: A 32-year-old female presents to a secondary level hospital with difficult breathing. A nurse assesses vital signs, finding a heart rate of 139 bpm, SpO₂ = 71%, respiratory rate at 56 bpm, and temperature of 38.1°C. Despite critical vital signs, the patient is sent back to the queue to wait for a doctor.

A reality for a woman in Lesotho, this common scenario demonstrates challenges faced by critically ill patients across the globe. Too often, critical illness is not recognized, providers fail to respond, and patients are not rescued from reversible life-threatening illnesses. This is a global problem, not just for low- and middle-income countries. American hospitals also struggle with critical care access, quality, and capacity.

The 2023 World Health Assembly saw the first-ever adoption of a resolution mentioning “critical care.” Member states vowed to strengthen emergency, critical, and operative care. Implementation requires short- and long-term solutions bridging existing gaps. Strong foundations for health systems are an essential first step. Every health facility should be able to recognize, respond to, and rescue a patient who is critically ill.

Table: Global Assumptions Harming Patients
1. Assuming Critical Care is ICU Care
2. Assuming Foundational Care is Received
3. Assuming Access to Care is Enough
4. Assuming Equipment Solves the Problem
5. Assuming Guidelines are Universal

Critical illness affects children, mothers, adults, and the elderly. Occurring daily due to medical and surgical diseases, cancer, and trauma, critical illness surges during conflicts, natural disasters, and epidemics. Critical care burdens are increasing as the population ages. According to the World Health Organization, “Universal health coverage means that all people have access to the full range of quality health services they need, when and where they need them, without financial hardship” (asamonitor.pub/48o7mob). Universal health coverage shifts must include essential critical care. Yet patients continue suffering under global assumptions (Table).

Critical Care is not only ICU care
Critical illness is defined as any disease with a “high risk of imminent death, vital organ dysfunction, an urgent requirement for care

to avoid death, and potential reversibility.” Critical care includes the “identification, monitoring and treatment of patients with critical illness through the initial and sustained support of vital organ functions” (BMJ Open 2022;12:e060972). Most envision intensive care units (ICUs), but critical care is time-critical care that should be



Figure 2: The EECC Network.

delivered everywhere. Limiting critical care to ICUs harms patients. The expense of ICUs has historically excluded critical care from global priority lists and challenges the feasibility of improving capacity. In both low- and highly resourced settings, 90% of critically ill patients are found outside of ICUs (Eur J Med Res 2023;28:322). They are found in wards, postanesthesia care units, and emergency departments (Eur J Med Res 2023;28:322). As such, the majority of critically ill patients are neglected since most countries lack a comprehensive strategic plan for implementing the emergency, critical, and operative care resolution (asamonitor.pub/48o1JWQ).

Foundational care is lacking
Postoperative mortality remains the greatest challenge for the field of anesthesiology (Anesth Analg 2018;127:55-62; JAMA Netw Open 2021;4:e2131669). Intraoperative deaths have significantly decreased over time. Postoperative deaths have not (Anesthesiology 2013;119:1474-89). Essential care involves rapid recognition, quick response, and prompt rescue



Ana Maria Crawford, MD, MSc, FASA

Director of Global Engagement Strategy, and Associate Professor of Anesthesiology and Critical Care Medicine, Stanford University, Stanford, California.



Ninza Sheyo, MBCHB, MPH, FCA (ECSA)

Critical Care Specialist, Partners In Health Lesotho (PIHL), Maseru, Lesotho.

“The 2023 World Health Assembly saw the first-ever adoption of a resolution mentioning ‘critical care’ Member states vowed to strengthen emergency, critical, and operative care. Implementation requires short- and long-term solutions bridging existing gaps. Strong foundations for health systems are an essential first step.”

from life-threatening, reversible organ dysfunction (Figure 1) (JAMA Netw Open 2021;4:e2131669). The greatest needs are essentials – monitors, trained providers, policies, guidelines, and appropriate escalation of care. Essential care is missing in much of the world, including high-income countries like the U.S.

Integrating essential critical care into existing health care is the foundation for building stronger health systems. Essential emergency and critical care (EECC) is that fundamental solution (Figure 2). The contents of EECC are not new, but they define the foundation upon which all

Continued on page 16



Figure 1: Critical foundations: the essentials of care for all critically ill patients.

Critical Foundations of Care: Global Assumptions

Continued from page 15

hospital care should be built (*BMJ Glob Health* 2021;6:e006585). Described as the care that should be provided to all critically ill patients in all hospitals in the world, EECC is composed of 40 clinical processes and 67 hospital readiness requirements.

Postoperative mortality is 50% higher on the continent of Africa (*Lancet* 2018;391:1589-98). Women undergoing emergent cesarian section are 50% more likely to die (*Lancet Glob Health* 2019;7:e513-22). People die from treatable illness everywhere. Patients are often lost in diagnosis-specific or specialty-specific solutions created by well-intentioned initiatives. Many critically ill patients in Sub-Saharan Africa are admitted with complications from HIV/AIDS, TB, malaria, and maternal health, yet to date, critical care is not integral to such programs. Patients die not from their disease; they die from a lack of EECC.

Addressing access but not quality

All hospitals must be equipped to provide essential care, but access is not the only issue. Quality improvement and assurance hold greater impact and could save over

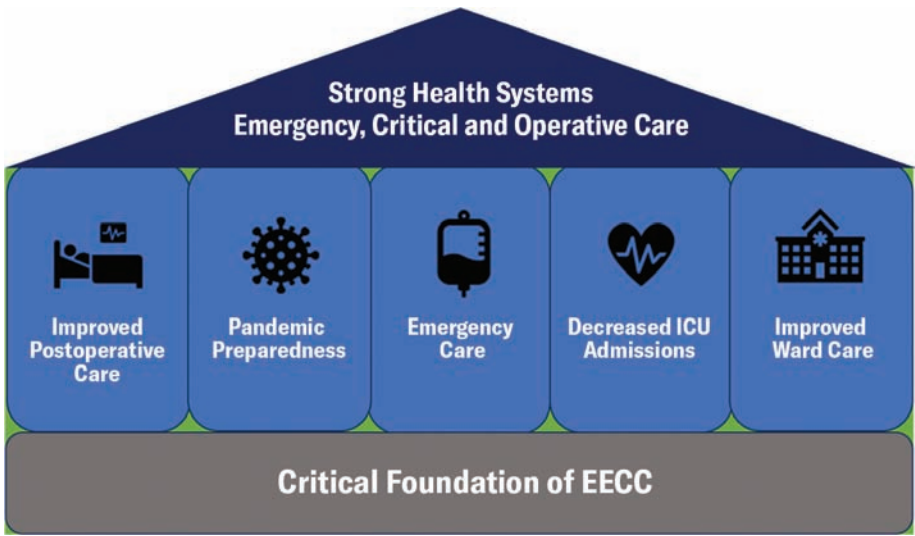


Figure 3: The critical foundation is EECC

8 million lives in some settings (*Lancet Glob Health* 2018;6:e1196-1252). EECC improves quality of care by improving ward care, postoperative care, maternal care, emergency care, and pandemic preparedness (Figure 3). EECC decreases the need for advanced ICU-level care while allowing discharge from the ICU sooner.

Assuming expensive equipment solves the problem

During the early outbreak of SARS-CoV-2, only 5% of patients needed an ICU. Yet

resource-limited countries were flooded with ventilators (*JAMA* 2020;323:1239-42; *Afr J Prim Health Care Fam Med* 2020;12:e1-3). Most had no oxygen, no reliable electricity, and no trained providers of mechanical ventilation. In Lesotho, the World Bank built a fully functional ICU. This ICU still lacks providers. Expensive equipment arrives too delicate to endure non-climate-controlled environments and without service contracts. Equipment costs strain limited budgets – an opportunity cost for care that is more needed. On the contrary, fundamental interventions defined by EECC are as cost-effective as medications for malaria or HIV, a mere \$14 per disability-adjusted life years averted (*Pharmacocon Open* 2023;7:537-52). One million additional lives would be saved with EECC at a fraction of the cost of ICU-level care (*Crit Care* 2018;22:284).

Assuming guidelines are universal

Providers must be enticed to enter critical care medicine. Training is needed. Lack of interest among health workers may actually be related to fear of liability and a consequence of inadequate compensation. In Zambia, despite government commitment to support medical doctors' specialization in critical care, most prefer internal medicine, surgery, obstetrics, and pediatrics, citing intense stress from life-threatening emergencies and patient deaths. The same reasons are given in Lesotho, leaving the World Bank's eight-bed, fully equipped ICU unstaffed. Incentives must be context-specific to enhance critical care services at all levels of the health system.

In hospitals without specialty trained providers, physicians rely on guidelines and protocols. Professional societies issue evidence-based care protocols, assuming international adoption. Unfortunately, many are contextually incompetent. Evidence suggests poorer outcomes from international guidelines applied to dissimilar populations living in resource-constrained settings. Fluid resuscitation given to septic children with malaria in Africa led to worse outcomes (*N Engl J Med* 2011;364:2483-95). The same occurred for septic African adults (*JAMA* 2017;318:1233-40).

Stop assuming, start advocating

*Clinical vignette: Four hours later, the patient sees a physician. She is prescribed an antibiotic and discharged home. Fortunately, an intensivist passing through noticed the breathless patient needing assistance to walk. He requested the patient's vitals from the nurse and immediately recalled the patient. He resuscitates the patient, found to be profoundly hypoxic with elevated lactic acid, and admits her for further management. The patient is diagnosed with *Pneumocystis pneumonia* (PCP) and HIV with a CD4 count of 6.*

Most assume that when ill, one can present to a hospital, have vital signs checked, be admitted to the appropriate ward, receive treatment, recover, and be discharged healthily back home. These are false assumptions. Despite readily available pulse oximetry, oxygen devices, and a PSA plant, this patient's near-miss was a problem of early recognition, a key component of EECC. This vignette also demonstrates how one well-trained intensivist is able to quickly recognize, respond, rescue, and reverse a life-threatening illness. There are often resources available for resuscitating critically ill patients once identified; however, this still leaves two major gaps in the critical care continuum (*Crit Care* 2019;23:122). First is the problem of early recognition and immediate care. This is solved with universal EECC coverage. The second gap is seen in the ICU with unacceptably high mortality rates for resource-limited settings, which can be solved with additional trained intensivists (*PLoS One* 2021;16:e0251321). Challenging assumptions is paramount for building the critical foundations of care for patients both inside and outside of ICUs. Improving quality of care is essential for patient survival. ■



Make this year your year.

Become a Fellow of the American Society of Anesthesiologists®

See the Criteria: asahq.org/fasa



"Leadership matters. There will be times you will wish that someone else is the skipper, but it is during those times you are needed most."

Joseph Dominguez
MD, FASA



"I sought FASA because many of the people I admired in my field carried this distinction. I knew that they worked hard and made meaningful contributions to their field, and I wanted to be amongst them!"

Elisha Peterson
MD, FASA

Your Commitment to Lifelong Learning Sets You Apart

Our top-tier education sets ASA apart. Whether you want to fulfill specific certification requirements, learn the latest, brush up on patient safety basics, or dig deep into a subspecialty, it's all here – at deep discounts for ASA members. Discover member-favorite education at asahq.org/favorites.