

Critical Care in Resource-Limited Settings

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Critical care and cardiovascular care share many facets. Critical care is defined by life-threatening conditions, which require close evaluation, monitoring, and treatment by appropriately trained health professionals. Cardiovascular care bears these same requirements. This issue aims to highlight key areas of critical care in resource-limited settings that are affected by or have an impact on cardiovascular care. With the global epidemiological transition positioning cardiovascular disease as the leading killer worldwide [1], the need for specialty and critical care and knowledge of its diagnosis and management are only increasing.

Additionally, patients increasingly present with more than just isolated cardiac conditions such as a myocardial infarction, decompensated heart failure, or arrhythmia alone. Increasingly, the cardiac patient will present with other acute comorbid medical conditions such as pneumonia, aspiration and acute respiratory distress syndrome, acute renal failure, or sepsis. As described by Siedner [2] in this issue of *Global Heart*, a patient with HIV now lives long enough on antiretroviral treatment to develop sequelae of hypertension, dyslipidemia, and/or diabetes. Alternatively, many critical illnesses have severe cardiopulmonary complications and/or involvement such as sepsis, acute respiratory distress syndrome, or influenza, as covered in this issue. This copresentation may be more common in resource-limited settings where patients often present late and only when very acutely ill. As a result, the divide between traditional cardiovascular care and traditional medical acute care is disappearing. Importantly, there are also increasing risks to patients once in the hospital; in this issue, Bebell and Muiru [3] describe the rise in nosocomial infection and antibiotic resistance. Today's patient population will require more prolonged and more technologically sophisticated invasive support.

There is a role for critical care in cardiovascular care and health care in resource-limited settings globally. Many simple, timely interventions have been shown to improve outcomes [4–6] and to be cost effective [7–10]. Furthermore, there is a role for trained staff to improve outcomes. Both retrospective and prospective studies have shown benefit to train intensivists on patient outcomes in acute care in general [11–15]. Further studies have helped indicate that train intensivists may help improve the utilization of medical resources, a precious commodity in many resource-limited settings [15].

The unprecedented influx of focus, effort, and funding toward HIV over the last decade has helped transform how we view health care in all settings, including resource-limited ones. There is a growing understanding that there should not and need not be 2 standards of care in different

settings around the world. Although critical care is associated with intensive resource needs and high costs, it can, in fact, encompass simple, cost-effective interventions that can transform care for the patient and population. Oxygen therapy, cardiopulmonary monitoring, appropriate triage, and timely interventions including antibiotics, fluids, and other medications may determine the difference in outcomes. As Kerry and Sayeed [16] write in this issue, although there are numerous challenges to scaling up high-quality critical care, there exist opportunities to creatively innovate in this field, which will invest in equity in global health care whether cardiovascular care, critical care, or global health care overall.

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