

Experts address challenges of delivering critical care in resource-poor countries

November 12 2014

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. In fact, cardiovascular disease will soon surpass even human immunodeficiency virus (HIV) as the leading cause of mortality in Sub-Saharan Africa. In the latest issue of *Global Heart*, researchers discuss the challenges of delivering critical care in resource-limited countries.

According to Guest Editors Vanessa Kerry, MD, MSc, and Sadath Sayeed, MD, JD, "Critical care as a clinical discipline in resource-rich settings is associated with high resource (financial, human, technological) intensity. For this reason, among others, critical care has received far less investment in resource-poor countries... Although numerous challenges to scaling up high quality intensive care services present themselves, even more opportunities to creatively innovate in this field exist that hold promise to move us closer to equity in global healthcare." They argue that investments in critical care need not be technology or cost intensive, but they should be appropriate and effective.

Critical care is an area of needed scale-up. Although the massive influx of effort and funding of HIV treatment has resulted in significant gains in life expectancy and health system strengthening, a lack of critical care resources in disadvantaged areas remains. Interventions in critical care in these settings are justified. In resource-limited settings, the majority of critically ill patients are children and young adults and avoiding

preventable death would reduce mortality and disease burden as well as have socioeconomic impacts."

This issue of *Global Heart*, "Critical Care in Resource-Limited Settings," includes coverage by a group of internationally recognized experts on important topics pertaining to the delivery of healthcare to low-income countries.

Key concerns explored include:

Sepsis:

- The definition of sepsis is controversial
- Standards of treatment in high-income areas differ from low- or medium-income areas and possible areas for intervention and improved care

Acute Respiratory Distress Syndrome (ARDS):

- Lack of diagnostic resources in resource-limited settings makes it difficult to even identify ARDS
- Alternate diagnostic methods may allow recognition of ARDS in resource-poor settings
- Some effective interventions for ARDS may be feasible in resource-poor settings

Pulmonary Vascular Disease (PVD):

- The vast majority of patients with PVD globally have limited access to diagnosis and therapies
- PVD is likely underestimated in resource-limited settings but is of risk due to causes such as endemic infectious diseases and

environmental factors

- Disease awareness and prevention will have the greatest effect on PVD incidence in resource-limited countries

Cardiac Care in Resource-Limited Environments:

- Cardiovascular disease is emerging rapidly in Sub-Saharan Africa
- Scale up of cardiac care facilities and education should be appropriately triaged to meet broad needs in the community, not just highly focused specialties in a few sites
- The central importance of medical and nursing education will have to be prioritized in resource-limited countries

Providing ICU Care in a Challenging Case:

- The application of basic principles of critical care including resuscitation and surgical and critical care management can be applied in a limited resource setting
- The multiple factors working against the delivery of emergency and intensive care in Sub-Saharan Africa

Influenza:

- Influenza exerts a great toll in low-income environments where it is the cause of 5% to 27% of all severe acute respiratory infections
- The lack of access to healthcare and adequate healthcare infrastructure portends a disproportionate burden of influenza disease in resource-constrained environments
- Improved influenza surveillance is needed to guide resource allocation and basic healthcare infrastructure development

Intensive Care in Low- and Middle-Income Countries:

- In intensive care units from low- and middle-income countries, there is considerable variation of available infrastructure, training, staffing and processes even as access to intensive care unit resources is reasonable
- The greatest perceived need for hospitals surveyed was for ICU-specialized healthcare providers

HIV and Critical Care Delivery:

- Despite progress in enrolling millions of people living with HIV into treatment and care in Sub-Saharan Africa, most individuals with HIV present with advanced disease, which can require critical care
- Nonphysician-delivered care can be both cost-effective and of high quality

Antimicrobial Resistance:

- Despite being identified as a worldwide public health priority by WHO and other international organizations, data on and efforts for antimicrobial resistance and hospital-associated infections in low resource settings remain extremely limited
- Resistance is driven by unfettered access and lack of product regulation and clinical diagnostic tools
- Antimicrobial stewardship programs (ASP) may need to be modified to work in low- and middle-income environments

Perspective from a Professional Society - How the American Thoracic Society has played a role in global health by:

- Taking a leadership role in health interventions and policy, for

example, writing the first international standards for TB diagnosis, treatment, and control

- Identifying and recruiting doctors for service in resource limited countries
- Providing formal recognition of volunteers who have provided needed services in resource-limited countries

The Guest Editors would highlight that, "Avoiding preventable death will not only reduce mortality and disease burden, but it will help improve life expectancy, decrease birth rates, increase household productivity, and even have an impact on gross domestic product. Investments in [critical care](#) need not be technology- or cost-intensive, but they should be appropriate and effective. Such investments, though, will have dividends across many clinical specialties as well as have an impact on the health outcomes of a population."

More information: Global Heart, Volume 9, Issue 3 (October 2014), published by Elsevier. Full table of contents at www.globalheart-journal.com/current

Provided by Elsevier

Citation: Experts address challenges of delivering critical care in resource-poor countries (2014, November 12) retrieved 27 April 2024 from <https://medicalxpress.com/news/2014-11-experts-critical-resource-poor-countries.html>

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