

CORRESPONDENCE



Unfinished business: severe acute respiratory infection in sub-Saharan Africa

Matthew J. Cummings^{1*}, Barnabas Bakamutumaho² and Max R. O'Donnell^{3,4}

© 2016 Springer-Verlag Berlin Heidelberg and ESICM

Dear Editor,

We read with interest the results of the Intensive Care Global Study on Severe Acute Respiratory Infection (IC-GLOSSARI), which provide valuable insight into the epidemiology and management of critically ill SARI patients in North and South America, Europe, and Asia [1]. As the authors acknowledge, the study population was limited to patients in intensive care units in high- and middle-income countries. Specifically, there were no study sites in sub-Saharan Africa, a large, geographically distinct region that accounts for a substantial proportion of global mortality from acute respiratory infections and hosts several emerging infectious disease “hotspots” [2].

Although surveillance for influenza-associated severe respiratory infections in sub-Saharan Africa has expanded considerably over the past decade, the contribution of other viral and bacterial pathogens to SARI-related hospitalizations and deaths in the region remains unclear [3]. As available data suggest that influenza-negative SARI cases in sub-Saharan Africa may experience higher mortality, increased capacity for multiplexed respiratory diagnostics is urgently needed to support molecular epidemiologic studies in the region and enhance global health security through surveillance for emerging and re-emerging pathogens [3].

In developed countries, IC-GLOSSARI and similar studies have identified populations at risk for poor outcomes from influenza and other severe respiratory infections [1]. In contrast, little is known about the clinical epidemiology of patients at highest risk for SARI-related morbidity and mortality in sub-Saharan Africa and

whether co-morbidities highly prevalent in the region, namely HIV infection, tuberculosis, and malaria, are consistently associated with poor outcomes [3]. Closing such data gaps is imperative, both to develop targeted vaccination and clinical management guidelines and inform pandemic preparedness through resource-allocation planning.

Finally, in their editorial accompanying the publication of IC-GLOSSARI, Dr. Martin-Loeches and colleagues highlight clinical limitations of the broad SARI case-definition but acknowledge its potential utility as a triage tool in low-income countries [4]. We believe this is an important point that deserves emphasis. In sub-Saharan Africa, where intensive care facilities are scarce, patients with severe respiratory infections are predominantly cared for on hospital wards where poorly standardized triage practices challenge prompt identification and treatment of critical illness [5]. However, at four sentinel surveillance sites in Uganda, we have observed health care workers translating SARI case-identification into syndromic management, with hospitalized patients meeting SARI case-definitions prioritized for further evaluation (pulse oximetry, chest radiography) and basic, emergent interventions (supplemental oxygen, anti-microbials). While epidemiologic studies and improvements in diagnostic capacity are ongoing, we believe that utilization of SARI case-definitions has potential to improve clinical management and outcomes now for severely ill patients in sub-Saharan Africa and other resource-limited settings.

Author details

¹ Department of Medicine, Columbia University Medical Center, 177 Fort Washington Avenue, Milstein Hospital Building, 6C-12, New York, NY, USA.

² Uganda Virus Research Institute, National Influenza Center, Entebbe, Uganda. ³ Division of Pulmonary, Allergy, and Critical Care Medicine, Columbia University Medical Center, New York, NY, USA. ⁴ Department of Epidemiology, Columbia University Mailman School of Public Health, New York, NY, USA.

*Correspondence: mjc2244@columbia.edu

¹ Department of Medicine, Columbia University Medical Center, 177 Fort Washington Avenue, Milstein Hospital Building, 6C-12, New York, NY, USA
Full author information is available at the end of the article

Compliance with ethical standards**Conflicts of interest**

The authors declare that they have no conflict of interest.

Accepted: 10 May 2016

Published online: 12 May 2016

References

1. Sakr Y, Ferrer R, Reinhart K et al (2016) The Intensive Care Global Study on Severe Acute Respiratory Infection (IC-GLOSSARI): a multicenter, multi-national 14-day inception cohort study. *Intensive Care Med* 42:817–828. doi:[10.1007/s00134-015-4206-2](https://doi.org/10.1007/s00134-015-4206-2)
2. Lozano R, Naghavi M, Foreman K et al (2013) Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 380:2095–2128
3. McMorrow ML, Wemakoy EO, Tshilobo JK et al (2015) Severe acute respiratory illness deaths in sub-Saharan Africa and the role of influenza: a case series from 8 countries. *J Infect Dis* 212:853–860
4. Martin-Loeches I, Soares M, Torres A (2016) Neces-SARI-ly? *Intensive Care Med* 42:928–930. doi:[10.1007/s00134-016-4243-5](https://doi.org/10.1007/s00134-016-4243-5)
5. Kruisselbrink R, Kwizera A, Crowther M et al (2016) Modified Early Warning Score (MEWS) identifies critical illness among ward patients in a resource restricted setting in Kampala, Uganda: a prospective observational study. *PLoS One* 11:e0151408. doi:[10.1371/journal.pone.0151408](https://doi.org/10.1371/journal.pone.0151408)