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Sepsis as a cause of rising health care casualties in Africa

Sepsis is a major killer on the African continent and according to the World Health Organization (WHO) it is much more of a problem here than in any other parts of the world.[1] In fact, communicable diseases (including sepsis) are the number one cause of mortality in Africa, the only WHO region in the world with this dubious ranking. The knock-on effect contributes to Africa effectively having the lowest life expectancy of any WHO region.[1,2]

Sepsis is not a single disease entity, but rather a syndrome caused by a vast array of pathogens (virus, fungus or bacteria) with an even wider spectrum of presentations. Unlike other diseases, sepsis can affect and kill anyone, from a new-born to the elderly, in any racial, social or income group, in every country and in every community in Africa. Now, if you thought that this was just another editorial about HIV/AIDS we ask you to consider the following statistics: in 2008 HIV/AIDS contributed to 12.9% of all-cause mortality, with lower respiratory tract infections following a close second at 11.2% and diarrhoeal disease a close third at 9.1%.[2] HIV/AIDS is just not the killer it used to be. In fact, the great news is that mortality due to HIV/AIDS decreased by around 20% between 2004 and 2009.[3] Still, this was associated with only a modest reduction in mortality due to communicable disease over the same period (about 6%).[2,4] The reality is that pneumonia, meningitis, tuberculosis, infectious diarrhoea and many other communicable illnesses have become a daily challenge for many patients and their health care workers, revealing sepsis as one of the most underestimated health problems in Africa.

It almost seems strange that countries in other WHO regions make such extraordinary provision for sepsis care when their sepsis burden is relatively minor compared to Africa (where little or no provision is made).[1] The reasons for this are undoubtedly extremely complex and differ from country to country, and often also within communities. Emerging economies in Africa have unique challenges in achieving the appropriate resource response to the demands of sepsis. Quite simply, Africa's predicament challenges health care workers attempting to provide immediate and expert sepsis care. For instance, consider the following African health resource statistics:

(1) Poor access to emergency centres: more than half of 43 African countries surveyed by the WHO in 2008 had no formal pre-hospital service.[3]
(2) A physician density of 0.2 physicians per 1000 (globally 1.4 per 1000) and a nursing density of 1.1 per 1000 (globally 2.8 per 1000).[1]
(3) Poor availability of tests such as white cell count, lactate and central venous saturation.
(4) Lack of availability of intensive care (ICU) services for onward care: while actual ICU bed figures are unknown, there are on average only one tertiary and seven district level health care facilities per 1,000,000 population throughout Africa (if tertiary and district level health care facilities can be used as a proxy for ICU bed numbers).[3]

Although this may seem overwhelming, relatively simple interventions when instituted early can go a long way in improving patient outcomes. The key principles in sepsis care are universal: early patient recognition, early administration of appropriate antimicrobials, and the prompt reversal of shock with intravenous fluids. Compared to the complexity and cost of managing HIV/AIDS, early sepsis management is relatively easy, inexpensive and does not require a great resource investment. This is an intuitive starting point and is where African health care workers should concentrate on making initial improvements.

Establishing local sepsis guidance is an essential step towards improving care. Sepsis guidance will not only highlight the key management concepts, but will also serve to educate physicians, nurses and paramedics on the importance of sepsis in general. The successful introduction of sepsis guidance in other parts of the world is evidence of the important role it plays in knowledge translation. During the development of sepsis guidance, it is essential to grasp that this will only be effective if it is practical and relevant. Using sepsis guidance designed for use in other WHO regions in African settings is

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likely to be inappropriate, and will only confuse and frustrate health care workers. Therefore different African regions will need to plan guidance within the constraints of their resources in order to tailor a timely and appropriate response. For example, given the specific problems with access, sepsis guidance for some parts of Africa may include starting prehospital antibiotics and fluids. In other areas it may require nurse-led sepsis management in health outposts.

The first World Sepsis Day, to be held on 13 September this year,[5] is set to create a fresh awareness of the magnitude of the problem of sepsis. This initiative has the potential to challenge the local government in providing the resources required to deal with the issue. However, it is up to us as acute care workers to engage our governments in this drive. Without leadership, 13 September will simply go by unnoticed.

In order to highlight some of the challenges in resource provision consider a few other papers appearing in this issue. Govender et al. (p. 67) describe the exit of Advanced Life Support paramedics from South Africa: retaining prehospital health care workers is integral in delivering an acute care service, and strategies to create a desirable work environment in Africa appear more likely to be successful than strategies to lure skills back to the continent (although the former is likely to have the benefit of improving the latter). Following a South African regional audit, Jacquet et al. discuss improving the appropriate use of resources simply by reviewing and restructuring current referral algorithms. What is fascinating is that despite being audited more than a decade ago, no service improvements have resulted and the same mistakes are still being made. This observation is reinforced by Govender who uses the South African Triage Scale to show the inappropriate use of after-hour services at a district general hospital by service users and referrers alike. Bear in mind that South Africa is at the top end of resource availability in Africa, and reports such as these cast a pitiable light on the rest of the continent. Finally, Levine et al. gives us an insight into the Libyan conflict which led to the ousting of Colonel Gaddafi last year. It is poignant to note that health care workers (including Libyan health care workers) remained unbiased in their treatment of victims from either side of the conflict. Sadly, the war had many victims, including nearby countries such as Mali, where the government was removed in a coup in early April as a direct result of border skirmishes that spilled over into Niger from the protracted aftermath of the Libyan war. The acute care requirements would no doubt have been tremendous, and with only 25% of roads paved, Mali's formal prehospital service (as identified by WHO) suddenly does not appear all that reassuring.[2,6]

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