

## Guest editorial

### The Global Sepsis Alliance – fighting a global disease

Only in the past thirty years has sepsis been recognized as a very common disease of global proportions and impact. Initially underdiagnosed and unrecognized, it is now accepted that sepsis, a clinical syndrome defined by the presence of both infection and a systemic inflammatory response,<sup>1</sup> is most probably one of the leading causes of death in the world.<sup>2</sup> 727,000 patients were hospitalized with a primary diagnosis of septicaemia or sepsis in the United States in 2008, more than double the number of patients documented in 2000.<sup>3</sup> In-hospital deaths were more than eight times more likely in patients with a diagnosis of septicaemia or sepsis compared to other diagnoses.<sup>3</sup> These estimates concern an environment of a developed, modern intensive care setting. There is very little data available for the developing world, where the majority of worldwide deaths related to sepsis are to be expected due to the prevalence of HIV/AIDS, malaria and maternal sepsis. It has been proven that the introduction of evidence-based guidelines focussing on early recognition, emergent antibiotic treatment and application of fluids and vasopressors can reduce sepsis-related mortality.<sup>4</sup> It is unclear to what extent these interventions can be translated to a developing world setting.<sup>5</sup>

A multitude of local, national and international organisations and societies dedicated to sepsis have developed over the past years. The Global Sepsis Alliance (GSA) was launched in September 2010 as part of a Merinoff Symposium of the Feinstein Institute for Medical Research on Long Island, to take on sepsis as a global problem. The GSA was founded by the World Federation of Societies of Intensive and Critical Care Medicine (WFSICCM), the World Federation of Pediatric Intensive and Critical Care Societies (WFPICCS), the International Sepsis Forum (ISF), the Sepsis Alliance USA (SA) and the World Federation of Critical Care Nurses (WFCCM) to coordinate global efforts against sepsis and to speak with one voice. In the meantime, the member organisations of the GSA represent over 600,000 health care professionals from more than 70 countries (Table 1). The GSA has set out to “Speak in One Voice” offering consistent, easily understood messaging to governments, philanthropies and the public.

The GSA has set goals to provide opportunities supportive of global interaction and defined output. As a first step, the GSA has developed a definition of sepsis that facilitates communication with the lay public:

Sepsis is a life threatening condition that arises when the body's response to an infection injures its own tissues and organs. Sepsis may lead to shock, multiple organ failure, and death, especially if not recognized early and treated promptly. Sepsis remains the primary cause of death from infection despite advances in modern medicine, including vaccines, antibiotics, and acute care. Millions of people die of sepsis every year worldwide.

Large scale studies are necessary to find out more about possible interventions to reduce sepsis-related morbidity and mortality. A major goal of the GSA is to assist societies and initiatives in the process of developing proposals for experiments, trials, projects and programs in support of researchers, caregivers and the public, especially in securing funding to implement such efforts. The GSA is to be empowered to easily identify and access resources and people of common purpose and intent within and without the scientific community.

The 2005 World Health Organisation Health global report on global child death considers that 80% of global child deaths are related to severe infections associated with pneumonia, malaria, measles, neonatal sepsis, and diarrhoea.<sup>6</sup> One exemplary project supported by the GSA is the development and implementation of sepsis demonstration projects in the poor districts of Ugandan, both urban and rural, in collaboration with the Ministry of Health, Makerere University College of Health Sciences, Mbarara University of Science and Technology and the Centre for International Child Health, University of British Columbia. The GSA will employ its contacts to regionally and globally disseminate the initiative's experiences, findings and lessons learned. The GSA will focus on addressing with equal commitment and vigour the needs of both adults and children in the developed and developing world.

The GSA urges the medical community to recognize sepsis as a medical emergency, requiring the administration of fluids, antibiotics and other appropriate treatments of infection within one hour of first suspecting a case of sepsis. This is also possible in regions without modern intensive care units, using a less sophisticated approach.<sup>7</sup>

In conclusion, the global burden of sepsis is high and is increasing, especially in the developing world. The

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**Table 1.** Membership of the Global Sepsis Alliance.

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## Membership of the Global Sepsis Alliance

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### Founding organizations

International Sepsis Forum (ISF)  
Sepsis Alliance (SA)  
World Federation of Pediatric Intensive and Critical Care Societies (WFPICCS)  
World Federation of Societies of Intensive and Critical Care Medicine (WFSICCM)  
World Federation of Critical Care Nurses (WFCCN)

### Committed organizations

American Thoracic Society (ATS)  
Australia and New Zealand Intensive Care Society (ANZICS)  
Belize Medical and Dental Association  
Centre for International Child Health  
Chilean Society of Critical Care  
Chinese Society of Critical Care Medicine  
Dutch Meningitis Initiative  
Emirates Intensive Care Society  
German Sepsis Society and German Sepsis Aid  
Gruppo italiano per la Valutazione degli interventi in Terapia Intensiva (GiViTi)  
Hellenic Sepsis Study Group  
International Forum for Acute Care Trialists (InFACT)  
International Pan Arab Critical Care Medicine Society  
Latin American Sepsis Institute  
Maventy Health International  
Society of Critical Care Medicine  
Spanish Edusepsis Network  
Surgical Infection Society (SIS)  
Survive Sepsis  
United Kingdom Sepsis Trust

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use of current evidence-based knowledge must be applied to reduce the worldwide high sepsis mortality rate. Healthcare professionals and laypersons must be taught that sepsis is an emergency requiring urgent treatment. The GSA will focus on programs to better understand that sepsis is an emergency and to foster a greater understanding of the medical burden of sepsis among the public and is planning a World Sepsis Day for 2012. The GSA encourages all concerned groups and societies to learn from each other and to join forces in the fight against sepsis at a global level and to become a member of the GSA. More information is available on the GSA website at [www.globalsepsisalliance.com](http://www.globalsepsisalliance.com).

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## Editor's notes

Dear Readers,

Welcome to this Special Edition of *Update in Anaesthesia*, which focuses on Intensive Care Medicine. This specialty has developed greatly over the last 30 years, however development of dedicated intensive care units (ICUs) in more poorly resourced countries has only come about in the last few years. We think of an ICU as a location in the hospital where the sickest patients are admitted for more invasive monitoring and more aggressive organ support and therapy. Inherently these monitors and treatments incur far higher costs than standard ward care, making them unachievable in many settings.

However, equipment is not the major factor that sets the ICU or high dependency unit (HDU) apart from the other wards of a hospital; it is the expertise and numbers of the ICU staff that confers the most dramatic advantage in providing effective care for the critically ill. Nursing staff numbers, and therefore the nurse to patient ratio, vary starkly between the general wards (around one to sixty in the description of a Ugandan ICU by Towey and Anyai, on page 16 of this edition of *Update*) and the ICU (ideally 1:1, but commonly 1:4 or 1:6). In addition it is the quality of training and experience of these nursing staff that has a major impact on patient care, particularly where staff morale allows good retention of staff and longevity of careers in the ICU.

In addition to good nursing care, close attention to the detail of basic good medical care by trained and experienced clinical officers and doctors, probably has a far greater impact on patient outcome than use of expensive, invasive equipment. In fact there are few interventions in ICU for which the evidence remains relatively unequivocal, examples being nursing patients in the semi-recumbent position (30 degrees head up) to decrease the incidence of ventilator associated pneumonia and administration of antibiotics to patients with sepsis within one hour of presentation. Therapies such as steroids and activated protein C for septic shock, despite encouraging early randomised control studies, have now been proven to be ineffective or harmful. Many of the more technical strategies for providing advanced respiratory support to patients with intractable hypoxia, such as extra-corporeal membrane oxygenation and high frequency oscillation ventilation, have very little supporting evidence.

So we are left in a situation where timely basic interventions are likely to bring about the greatest improvements in mortality and morbidity of critically ill patients, manoeuvres such as effective airway management and haemodynamic resuscitation in trauma, early antibiotics and surgical source control in sepsis. These strategies are available in most healthcare settings around the world.

This edition of *Update in Anaesthesia* attempts to provide an overview of the essential aspects of care of the critically ill and critically injured, with particular focus on practices that are most relevant and achievable in poor resource settings. For most topics in our speciality we have tried to achieve a balance between making the text relevant to workers where 'high-tech' equipment is not available and achieving

appropriate coverage of the topic for areas where some level of more advanced equipment may be available. In many parts of the world, health centres that are geographically close to each other may vary greatly in their resources, due largely to the influence of alternative funding streams from non-government organisations.

I hope that this edition is useful. I would appreciate your feedback at [bruce.mccormick@nhs.net](mailto:bruce.mccormick@nhs.net). The articles do not cover this subject fully and suggestions for further ICM topics would be welcomed. This edition is available, along with the full back catalogue of *Update in Anaesthesia* at <http://update.anaesthesiologists.org>

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