

Konrad Reinhart¹, Ron Daniels¹, Flavia Ribeiro Machado¹ "on behalf of the World Sepsis Day Steering Committee and the Global Sepsis Alliance Executive Board"

The burden of sepsis: a call to action in support of World Sepsis Day 2013

O ônus da sepse: uma chamada em apoio ao Dia Mundial da Sepse 2013

1. World Sepsis Day Steering Committee, Global Sepsis Alliance Executive Board.

Worldwide, sepsis is one of the most common deadly diseases. It is one of the few conditions to strike with equal ferocity in resource-poor areas and in the developed world. Globally, 20 to 30 million patients are estimated to be afflicted every year. Every hour, about 1,000 people and each day around 24,000 people die from sepsis worldwide. Despite accounting for over 8 million lives lost annually, sepsis it is one of the least well known diseases. In the developing world, sepsis accounts for 60-80% of lost lives in childhood, with more than 6 million neonates and children affected by sepsis annually. Sepsis is responsible for >100,000 cases of maternal sepsis each year, and in some countries is now a greater threat in pregnancy than bleeding or thromboembolism.⁽¹⁾

In high income countries sepsis is increasing at an alarming annual rate of 8-13%.⁽²⁾ Reasons are diverse, and include the aging population, increasing use of high-risk interventions in all age groups, and the development of drug-resistant and more virulent varieties of pathogens. In the developing world, malnutrition, poverty, and lack of access to vaccines and timely treatment all contribute to death. A considerable percentage of sepsis cases could be prevented through the widespread adoption of practices in good general hygiene and hand washing, cleaner obstetric deliveries, and through improvements in sanitation and nutrition (especially among children under 5 years of age), provision of clean water in resource poor areas⁽³⁾ and vaccination programs for at risk patient populations.^(4,5)

Sepsis mortality can be reduced considerably through the adoption of early recognition systems and standardized emergency treatment.⁽⁶⁻⁸⁾ However, these interventions are currently delivered to fewer than 1 in 7 patients in a timely fashion.^(7,9,10)

Sepsis is often diagnosed too late. Patients and health care professionals do not suspect sepsis, and the clinical symptoms and laboratory signs that are currently used for the diagnosis, such as raised temperature, increased pulse, breathing rate, or white blood cell count, are not specific for sepsis. Low awareness of sepsis as a discrete clinical entity among health professionals is compounded by a lack of reliable systems to aid identification and speed delivery of care. Recognition in neonates and children is even more problematic because the signs and symptoms may be non-specific and subtle but deterioration is usually rapid. The variation in normal physiological parameters with age is a further contributor to difficulties in identifying acute illness early.⁽¹¹⁾

Despite the fact that a patient with sepsis is around five times more likely to die than a patient who has suffered a heart attack or stroke, the

Conflicts of interest: None.

Submitted on March 23, 2013
Accepted on March 25, 2013

Corresponding author:

Konrad Reinhart
Department of Anesthesiology and Intensive
Care Medicine
Erlanger Allee 101
07747 Jena, Germany
E-mail: konrad.reinhart@med.uni-jena.de

disease is still not recognized or afforded the same sense of urgency as these other critical conditions. An international survey suggests that 80% - 90% of people in North America and Europe are not familiar with the term “sepsis” and of those who are, most are not aware that sepsis is a leading cause of death.⁽¹²⁾

A further difficulty lies in rehabilitation. The outcome from sepsis is too often seen as binary- the patient dies (failure) or survives (success), with studies focusing on mortality and length of stay as outcome measures. Too little is known and understood about the long-term effects of sepsis, and access to rehabilitation for survivors is poor, despite there being evidence that at least one in 5 survivors suffers long-term physical, cognitive or mental health problems.⁽¹³⁾

To address these gaps in insight and to decrease the burden of sepsis worldwide, the Global Sepsis Alliance (GSA) and its founding members - the World Federation of Societies of Intensive and Critical Care Medicine (WFSICCM), the World Federation of Intensive and Critical Care Societies (WFPICCS), the World Federation of Critical Care Nurses (WFCCN), the International Sepsis Forum (ISF) and the Sepsis Alliance (SA) - took the initiative to create the first World Sepsis Day (WSD) as a launch platform for the World Sepsis Declaration. The intent of WSD was two-fold: first, to raise awareness of sepsis among all stakeholders including members of the public and policy makers and second, to encourage quality improvement initiatives for sepsis recognition and management by hospitals and health care providers toward delivering the goals set out in the World Sepsis Declaration (www.world-sepsis-day.org).

These goals are: (1) reducing sepsis incidence through prevention by at least 20 percent; (2) improving survival for children and adults in all countries; (3) raising public and professional awareness and understanding of sepsis; (4) ensuring improved access to adequate rehabilitation services and (5) creating and maintaining sepsis incidence and outcomes databases.

We are well aware that the realization of these targets can only be driven by the health care professional bodies and by policy makers themselves. However, to succeed will require the engagement of health care professionals at all levels of care from physicians to community health care workers, and close interdisciplinary collaboration between all stakeholders including public health, community medicine, hygiene, microbiology, infectious diseases, emergency medicine,

critical care medicine, and rehabilitation. Therefore, we implore health professionals to facilitate the creation of interdisciplinary and multiprofessional coalitions both on the national and local level.

On September 13th, 2012, World Sepsis Day took place. Its supporters organized more than 200 events on all continents in over 40 countries to educate the public and health care workers and to increase awareness of this hidden health care disaster. Major events intended as a “call to arms” against this devastating disease took place in major cities (Beijing, Berlin, Bangalore, Belgrade, Delhi, Florence, Houston, London, Lima, Mumbai, New York, Rome, Sao Paulo, San Diego de Chile, and others) all over the world. Influential policy makers as well as Members of Parliament, Ministers and senior representatives of health care authorities were involved in press meetings and other events, and WSD was widely covered by national television and print media. We know of over 550 articles with an estimated readership of 80 million people. Countries like Brazil, Germany, Great Britain and India had a media reach of between 8-20% of local population. The outreach via social media (Facebook & Twitter) was in the range of 1.4 million. With 321 radio features, 24 TV features, 10 national newspaper reports and 60 online reports the public awareness that was reached in Brazil was outstanding.

To date, 178 professional organisations, 1217 hospitals and hospital groups and over 120 physicians and health care workers have declared their support for World Sepsis Day and the World Sepsis Declaration by registering on the WSD website. Currently we receive between 30 and 70 new registrations per month. Furthermore, WSD is supported by over 60 of the world most renowned sepsis experts and a number of ambassadors, among whom are Ministers, Members of Parliament, sports heroes and the WHO Envoy for Patient Safety.

Most importantly, the idea for WSD came from patient advocates, was implemented by our own national and international professional societies, and found widespread support in the health care community. It is difficult to argue against the message of WSD - to raise awareness, improve reliability of and access to care, and to measure and improve outcomes. It is very encouraging that at this time more than 20 new organisations became members of the GSA, which has now close to 50 member organisations. The mission of the GSA and its leadership, which, together with the WSD International Steering Committee is the

backbone for the global organization of WSD, is that of an enabler and facilitator of national and local activities. This is delivered via the WSD website through the provision of toolkits and educational and promotional materials. Clearly, the experiences of WSD 2012 were that the outreach and success depends on the strength of commitments on the national, local and individual level. We are very thankful for the engagement and the pro bono work undertaken by many individuals, sepsis survivors, and professionals from outside the medical community and the fact that we received considerable public funding to support the WSD Head office via the Jena/Germany based Center for Sepsis Control and Care. Furthermore, we very grateful to our corporate sponsors for their financial support. The guiding principles for the interaction with industry are available on the WSD Web site.

World Sepsis Day 2012 was an encouraging start that in many ways exceeded expectations. The movement triggered a number of innovative and creative ideas from our worldwide supporters, however we still can learn from other medical fields like oncology, cardiology, and AIDS/HIV which have proven the importance of concerted public and political awareness campaigns to achieve improvements. In the case of cancer, "... it needed icons, mascots, images, slogans, the strategies of advertising as much as the tools of science. For any illness

to rise to political prominence, it needed marketing.... A disease needed to be transformed politically before it could be transformed scientifically".⁽¹⁴⁾

Meanwhile, we have learned from examples in the State of New York, Wales, Scotland, Wales and Brazil that by tireless campaigning and lobbying it is possible to establish statutory regulations for sepsis management via national and regional governments. The most recent example, from the state of New York, resulted in statutory regulations that require the adoption of proven practices for the early identification and treatment of sepsis in all hospitals in New York State.

The next World Sepsis Day will take place on 13th September 2013. We strongly encourage international, national, and regional professional and lay organisations, as well as individual physicians and health care workers, to become supporters of WSD and the World Sepsis Declaration and to become involved in raising awareness. Likewise, we would ask the reader to get your hospital or department to add to the number of more than 1200 hospitals that so far have committed to the targets of the WSD. Please find more information on WSD at www.world-sepsis-day.org and feel free to contact us. Join us to stop sepsis and save lives, and please support World Sepsis Day on September 13th.

REFERENCES

- Garrod D, Beale V, Rogers J, Miller A. Midwifery. *BJOG*. 2011;118 Suppl 1:149-57.
- Hall MJ, Williams SN, DeFrances CJ, Golosinskiy A. Inpatient care for septicemia or sepsis: a challenge for patients and hospitals. *NCHS Data Brief*. 2011;(62):1-8.
- Kissoon N, Carcillo JA, Espinosa V, Argent A, Devictor D, Madden M, Singhi S, van der Voort E, Latour J; Global Sepsis Initiative Vanguard Center Contributors. World Federation of Pediatric Intensive Care and Critical Care Societies: Global Sepsis Initiative. *Pediatr Crit Care Med*. 2011;12(5):494-503.
- Mangia CM, Kissoon N, Branchini OA, Andrade MC, Kopelman BI, Carcillo J. Bacterial sepsis in Brazilian children: a trend analysis from 1992 to 2006. *PLoS One*. 2011;6(6):e14817.
- Public Health Agency of Canada. Canadian National Report on Immunization, 2006. *CCDR*. 2006;32S3:1-44. [cited 2012 June 3]. Available in http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06pdf/32s3_e.pdf
- Ferrer R, Artigas A, Levy MM, Blanco J, González-Díaz G, Garnacho-Montero J, Ibáñez J, Palencia E, Quintana M, de la Torre-Prados MV; Edusepsis Study Group. Improvement in process of care and outcome after a multicenter severe sepsis educational program in Spain. *JAMA*. 2008;299(19):2294-303.
- Levy MM, Dellinger RP, Townsend SR, Linde-Zwirble WT, Marshall JC, Bion J, Schorr C, Artigas A, Ramsay G, Beale R, Parker MM, Gerlach H, Reinhart K, Silva E, Harvey M, Regan S, Angus DC; Surviving Sepsis Campaign. The Surviving Sepsis Campaign: results of an international guideline-based performance improvement program targeting severe sepsis. *Crit Care Med*. 2010;38(2):367-74.
- Barochia AV, Cui X, Vitberg D, Suffredini AF, O'Grady NP, Banks SM, et al. Bundled care for septic shock: an analysis of clinical trials. *Crit Care Med*. 2010;38(2):668-78.
- Kumar A, Roberts D, Wood KE, Light B, Parrillo JE, Sharma S, et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. *Crit Care Med*. 2006;34(6):1589-96.
- Phua J, Koh Y, Du B, Tang YQ, Divatia JV, Tan CC, Gomersall CD, Faruq MO, Shrestha BR, Gia Binh N, Arabi YM, Salahuddin N, Wahyuprajitno B, Tu ML, Wahab AY, Hameed AA, Nishimura M, Procyshyn M, Chan YH; MOSAICS Study Group. Management of severe sepsis in patients admitted to Asian intensive care units: prospective cohort study. *BMJ*. 2011;342:d3245.
- Roland D. Paediatric early warning scores: Holy Grail and Achilles' heel. *Arch Dis Child Educ Pract Ed*. 2012;97(6):208-15.
- Rubulotta FM, Ramsay G, Parker MM, Dellinger RP, Levy MM, Poeze M; Surviving Sepsis Campaign Steering Committee; European Society of Intensive Care Medicine; Society of Critical Care Medicine. An international survey: Public awareness and perception of sepsis. *Crit Care Med*. 2009;37(1):167-70.
- Iwashyna TJ, Ely EW, Smith DM, Langa KM. Long-term cognitive impairment and functional disability among survivors of severe sepsis. *JAMA*. 2010;304(16):1787-94.
- Mukherjee S. The emperor of all maladies: a biography of cancer. New York: Simon and Schuster; 2010.