



Barcelona Declaration

Problems and issues associated with sepsis treatment

Sepsis is a major cause of mortality and morbidity throughout the world. Additionally, the personal and economic costs are high.

Sepsis is a complex syndrome that is difficult to define, diagnose and treat. It may produce a range of clinical conditions caused by the body's systemic response to an infection, develop rapidly into severe sepsis which is, in turn, accompanied by single or multiple organ dysfunction or failure, and may lead to death. The stages of the condition can mimic other conditions and be interpreted differently by physicians; different terminology may be used resulting in misdiagnosis or delayed diagnosis and culminating in death.

Data indicate that the annual incidence of severe sepsis is approximately 3.0 cases per 1,000 of the population¹, over 18 million cases worldwide each year, which is equivalent to the entire population of Denmark, Finland, Ireland and Norway added together.

Moreover, the number of sepsis patients is projected to increase by 1.5% per annum¹, raising the burden on personal and healthcare resources. This means that there will be an additional 1 million cases per year by 2020 in the USA alone¹. This increase is mainly due to the growing use of interventional procedures and growing numbers of elderly and vulnerable people. Older people are more susceptible to infections due to ageing, co-morbidities, use of invasive surgical techniques and problems associated with institutionalisation.

Death is common among sepsis patients; sepsis ranks as the 10th leading cause of death in the US² and kills approximately 1,400 people worldwide every day³. The precise number of deaths is also difficult to estimate, as sepsis is a progressive syndrome, beginning with infection and leading to inflammation, organ failure and death. Death is often attributed on the death certificate to the co-morbidities rather than to sepsis, resulting in nearly half of the deaths remaining unattributed to sepsis⁴⁻⁶.

Critical Care Physicians consider sepsis to be among the most challenging and difficult conditions to manage as the course of sepsis varies widely from patient to patient as a result of a variety of circumstances. The variation in clinical manifestations results in a wide range of clinical specialties being involved in the diagnosis and treatment of sepsis. Many healthcare professionals do not have sufficient training or experience to identify the symptoms of sepsis and reach a timely diagnosis due to the complex nature of the condition.

Rapid and timely intervention is critical to successful treatment. The sepsis patient is typically critically ill and requires immediate attention to avoid rapid deterioration of his/her underlying condition. Therefore it is necessary to treat the patient at the same time as confirming the diagnosis. Moreover, patient responses to treatment are also highly unpredictable.

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Until recently, no single agent or treatment strategy has shown sufficient promise to be used for the routine management of patients with sepsis. The most important intervention is rapid diagnosis and then prompt and appropriate treatment. The usual treatment of sepsis includes fluids, antibiotics and control of the source of infection. After years of frustration, recent clinical trials suggest that specific strategies and new therapies may improve survival in severe sepsis.

The personal costs of sepsis include pain, suffering, multiple organ system dysfunction and failure, disability and the psychological affects on the person and the family while the patient is in hospital. In addition, the cost for survivors is high with long-term quality of life being significantly lower than that of the general population⁷.

From an economic perspective, sepsis places a significant burden on healthcare resources, accounting for 40% of total ICU expenditure and costing up to €7.6 billion annually in Europe⁸ and €16.7 billion in the US in 2000¹. The direct medical costs include physician, nursing and other staff costs, ICU beds and equipment, diagnostic equipment, various treatments and an increase in length of hospital stay. The indirect costs include lost income and reduced productivity.

Mortality rates and recovery can be improved by early accurate diagnosis and treatment of septic patients. Approximately 10% of sepsis patients do not receive prompt appropriate antibiotic therapy. Delay in antibiotic therapy increases mortality by 10–15%⁹⁻¹¹. The challenge lies with the difficulties of diagnosing and treating sepsis. Many physicians do not use the current definition of sepsis despite attempts to standardise terminology and diagnostic criteria. Indeed, only 17% of clinicians agree on a definition of sepsis¹², and this disparity results in missed diagnosis and delayed treatment. The challenges include:

- Lack of awareness of frequency and mortality rate of sepsis
- No universally accepted definition of sepsis
- No single or combination of tests or markers for a reliable diagnosis of sepsis
- Need for earlier diagnosis and treatment of septic patients
- Many healthcare professionals may be involved in diagnosis and treatment of sepsis
- Lack of adequate healthcare professional training in the diagnosis and treatment of sepsis

Statement of intent

In view of the urgent need for action to deal with the growing burden of sepsis we, as members of the Surviving Sepsis Campaign, with the support of others, call on healthcare professionals and their organisations, governments, health agencies and the public to support our initiative to reduce the incidence of sepsis mortality by 25% within 5 years. To meet this goal, the following actions must be performed:

- Recognise that sepsis is a major cause of mortality and morbidity, representing a huge social and economic burden to all communities
- Recognise that the current mortality rates of sepsis are unacceptably high

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- Immediately begin the process of developing comprehensive global strategies for action against sepsis. Individual country needs will be taken into account, existing initiatives will be utilised, and methods based on sound evidence of benefit will be used
- Commit, on an ongoing basis, to an educational programme for healthcare professionals to diagnose sepsis earlier and treat patients appropriately
- Increase funding for the development of early, accurate and specific diagnostic tests and effective treatments for sepsis
- Educate and increase awareness, amongst healthcare professionals and their organisations, governments, health agencies and the public, of all diagnostic, treatment and intervention options
- Ensure availability of counselling both for patients and for families of patients who are suffering from sepsis or who have had sepsis in the past
- Commit, on an ongoing basis, to developing worldwide standards of care to ensure that the management of sepsis patients meets these standards, through the development of global protocols that can be adapted and utilised locally

We also resolve to:

- Provide leadership, support and guidance to governments and agencies towards the development of coherent global and national strategies for the diagnosis and treatment of sepsis

Call to action

There is overwhelming evidence to support the urgent need for action to deal with the burden of sepsis. Members of the Surviving Sepsis Campaign call on healthcare professionals, governments, healthcare agencies and the public to recognise the need to provide continuous improvement in the quality management of sepsis by the adoption of a 6-point action plan to reduce the incidence of sepsis mortality by 25% within 5 years:

- **Awareness:** increase awareness of healthcare professionals, governments, health and funding agencies, and the public of the high frequency and mortality of sepsis
- **Diagnosis:** improve the early and accurate diagnosis of sepsis by developing a clear and clinically relevant definition of sepsis and disseminating it to our peers
- **Treatment:** increase the use of appropriate treatments and interventions by disseminating the range of care options and urging their timely use
- **Education:** encourage the education of all healthcare professionals who manage sepsis patients by providing leadership, support and information to them about all aspects of sepsis management, including diagnosis, treatments and interventions, and standards of care
- **Counselling:** provide a framework for improving and accelerating access to post-ICU care and counselling for sepsis patients
- **Referral:** recognise the need for clear referral guidelines that are accepted and adopted at a local level in all countries by initiating the development of global guidelines

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We commit to developing a timetable and working plan within six months to meet these objectives. We commit to a goal of a 25% relative reduction of mortality from sepsis in five years.

Given the existing and/or planned ICU and/or severe sepsis data collection research efforts around the world (e.g. ANZICS - Australia/New Zealand, CCRNet - Canada, Cub-Rea' - France, GSS - Germany, GiViTi - Italy, ICNARC - UK, NICE - Netherlands, PROGRESS - International, Project Impact - USA, SICSAG - Scotland, SOAP - ESICM, etc.), we further commit to explore the possibility of leveraging these studies as key measurement tools against some or all of the six points above.

Future gatherings of 'Surviving Sepsis' delegates will include opportunities to share data from these initiatives, in the spirit of collaboration and measuring progress to goals set. The next gathering will be used in part to educate everyone on the various data collection research efforts and to discuss in more detail how they can be leveraged as a main metrics tool for 'Surviving Sepsis'.

References:

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**Surviving
Sepsis**

SIGNATURE SHEET

This is to certify that:

(Please print your name)

of

(Please print your Address)

*attended and signed the official ratification of the Barcelona
Declaration on October 2nd 2002 at the ESICM.*

(Please sign here)