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Performance Improvement in the Critical First Six Hours of Severe Sepsis

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The Surviving Sepsis Campaign (SSC), an initiative of the European Society of Intensive Care Medicine, the International Sepsis Forum, and the Society of Critical Care Medicine, was developed to improve the treatment of sepsis. The Campaign was begun in 2002 with a pledge to demonstrate a measurable reduction in severe sepsis mortality by 2008. International guidelines for the management of severe sepsis were developed and published jointly in Critical Care Medicine and Intensive Care Medicine in 2004 with the first revision occurring in 2008. The guidelines are currently sponsored by 16 organisations with interest and involvement in sepsis.

In 2005 the SSC partnered with the US-based Institute for Healthcare Improvement to create the SSC performance improvement program consisting of two severe sepsis bundles, one for the first six hours and one for the first 24 hours of management. The bundle element goals were chosen by the steering committee of the SSC. Each bundle includes goals of therapy based on key recommendations from the guidelines, which are converted to measurable indicators ascertainable from concurrent or retrospective chart review. The metrics toassess these indicators, data collection tool and the associated software program were developed by Cooper University Hospital (Camden, USA), Rhode Island Hospital (Providence, USA), and the Institute of Healthcare Improvement (Cambridge, USA). Current thinking is that the most crucial time for influencing outcome in the patient with severe sepsis is the first six hours. The first bundle of quality indicators (also called the resuscitation bundle) targets the first six hours of severe sepsis management and has 3 to 6 goals (quality indicators) to achieve, the number depends on whether or not the patient has hypotension and/or shock (Figure 1).

Each patient who qualifies for severe sepsis according to a standardised screening tool is scored for performance as to compliance with achieving the indicators. A software program facilitates data entry for each severe sepsis patient and allows local and central creation of monthly, quarterly and yearly tabular and graphic reports of performance. De-identified data can also be transmitted to a central repository for analysis and benchmarking. Beginning in late 2005, hospitals in the U.S. and around the world began signing on to participate in the performance improvement program with data collection, education programs and performance feedback to healthcare practitioners. De-identified data is transmitted on a voluntary basis to a central database located at the Society of Critical Care Medicine. To date over 17,000 patients have been entered into the database from 120 hospitals in over 20 countries from around the world. The first formal data analysis is scheduled for June 2008.

The plan is for an ordinal month analysis with first month data from all hospitals regardless of startup time compared to later months of collection, i.e. summed historical controls month by month for all hospitals. Figure 2 contrasts baseline data from Cooper collected during alpha testing and prior to initiation of education and performance feedback with the first year of data after initiation of the program.

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