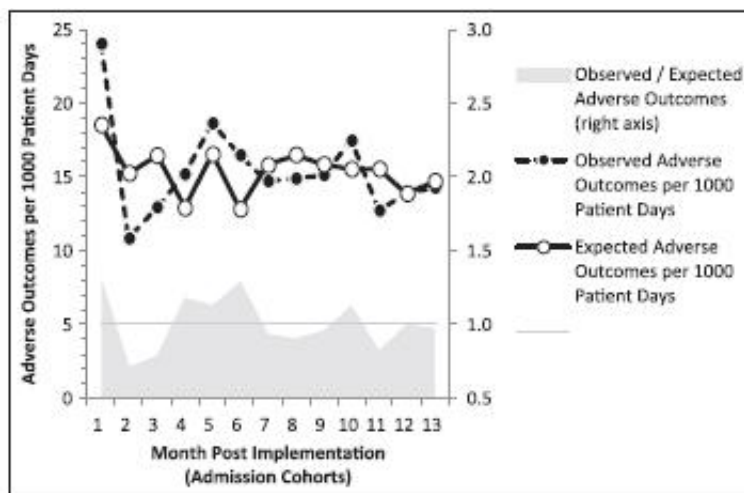


Advances made against the deadly infection complication, sepsis

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Observed and expected outcomes by admission cohort are shown. Credit: Robert C. Amland, Ph.D., James M. Haley, M.D., and Jason J. Lyons, M.D.

Sepsis is an inflammatory response to infection that's known to develop in hospital settings and can turn deadly when it's not discovered early on. In a new study, a hospital surveillance program focusing on reducing the risks of sepsis, known as the two-stage Clinical Decision Support (CDS) system, was found to reduce the risk of adverse outcomes, such as death and hospice discharge for sepsis patients, by 30% over the course of one year. This study is published today in the *American Journal of Medical Quality*.

Study authors Dr. Robert C. Amland, Dr. James M. Haley, and Dr. Jason J. Lyons studied data from a hospital that uses the two-stage [sepsis](#) CDS system to encourage early detection of sepsis. This alert system utilizes cloud-based technology and is run continuously. If it detects that a patient has indications of sepsis, such as signs of infection, it issues an electronic alert to the patient's nurse. Following hospital protocol, the nurse is responsible for contacting a health care provider within five minutes of receiving the alert. The provider conducts a further examination, which is linked to the [patients'](#) electronic health record for further assessment. The provider then determines if the alert indicates sepsis and if so, documents the severity and makes an appropriate plan of care.

Of the 16,527 hospitalizations that occurred at the hospital within a year, 1,541 non-intensive care patients activated a CDS alert and were suspected of infection. Examining these cases and the effectiveness of the hospital's new sepsis protocol, the researchers found the following:

- One in six of these patients had recently been discharged from the hospital and was now returning.
- 61% of patients who first activated the alert were found to have SIRS syndrome, an early physiologic response to [infection](#).
- First alerts were predominantly triggered by abnormal heart and respiratory rates. This physiologic pattern was predictive of death or discharge to hospice.
- Patients whose first alert activated while in the medicine or critical care units were more likely to be discharged to hospice or die than patients who received their first alert in other locations, such as the emergency department or surgical units.
- 97% of patients who activated an alert were attended to by 177 providers, with three of four sepsis assessments completed within one hour of the initial alert.
- The hospital's early recognition and treatment of sepsis resulted

in a 30% reduced risk of [adverse outcomes](#) for sepsis and severe sepsis patients, such as death or discharge to hospice.

The researchers attributed the hospital's advances against sepsis to health providers' acceptance of the sepsis program, the integration into clinical workflow, and the hospital's requirements that providers immediately examine patients who activated alerts.

Still, the researchers cautioned, "The program's sustained impact began seven months after its launch, indicating the need for patience for program effects to materialize and stabilize."

More information: A Multidisciplinary Sepsis Program Enabled by a Two-Stage Clinical Decision Support System: Factors That Influence Patient Outcomes, *American Journal of Medical Quality*, 2015.

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