

Kaiser Permanente Policy Story, v1, No. 4

Saving Lives Through Better Sepsis Care

- Every year, 750,000 people develop sepsis, and nearly one in four dies – making sepsis the number one cause of death in hospitals in the United States.
- Kaiser Permanente developed an innovative program that led to increased rates of sepsis detection, reduced mortality rates, and reduced average length of stay for patients with sepsis.
- If the U.S. achieved Kaiser Permanente’s level of results around sepsis care, each year there would be 72,000 fewer deaths, 5 million fewer hospital days, and reductions in hospital costs of over \$11 billion.
- Enablers of Kaiser Permanente’s success can be replicated in community hospitals.

Policy Context

The U.S. Department of Health and Human Services (HHS), along with representatives of hospitals, employers, health plans, physicians, nurses, and patient advocates, launched the Partnership for Patients in 2011. This public-private partnership was intended to make hospital care safer, more reliable, and less costly by reducing millions of preventable injuries and complications in patient care by the end of 2013.¹

The Challenge

Sepsis is the number one cause of death in U.S. hospitals, accounting for more deaths than cancer, heart disease, or stroke. Every year, 750,000 people develop sepsis, and nearly one in four of these patients dies. Sepsis is a severe infection that is spread through the bloodstream, and any kind of infection—bacterial, viral, parasitic, or fungal—can trigger it. The majority of sepsis cases are among elderly, immune-compromised, and critically ill patients. Because the infection can develop quickly, immediate detection and treatment are critical.

Kaiser Permanente Solution

In 2008, Kaiser Permanente developed a comprehensive approach to screen and provide effective treatments to hospital patients identified as at-risk for sepsis.

Increasing Screening and Detection

Beginning the moment a patient enters the hospital, staff identify patients with signs of infection or abnormalities in vital signs that could signify sepsis. In addition, Kaiser Permanente implemented a policy promoting specific blood testing for sepsis for every patient hospitalized for an infection.

Improving Treatment

“The key to reducing sepsis mortality is to find sepsis and find it early.”

Alan Whippy, MD, Medical Director of Quality and Safety, The Permanente Medical Group

Early detection is followed by aggressive treatment: eliminating the underlying infection with anti-infection agents or surgery, and placing a central venous catheter (“central line”) when appropriate. A central line is used to administer medication or fluids in a timely manner and allows doctors and nurses to measure oxygen saturation and central venous pressure. Depending on the patient’s condition, other treatments may include fluids, drugs to raise low blood pressure, mechanical ventilators to support breathing, or dialysis for kidney failure.

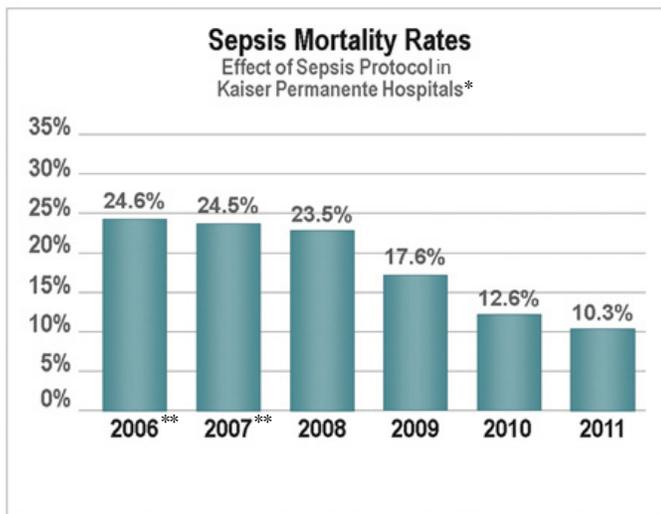
Innovative Training to Ensure Safety

Kaiser Permanente uses simulation mannequins to train emergency physicians in the placement of central venous catheters under ultrasound guidance to ensure that patients with sepsis have safe treatment. Further, Kaiser Permanente has embedded standardized orders, documentation tools, and alerts in its electronic medical record to prompt effective interventions for sepsis.

Outcomes

Since implementing its sepsis program, Kaiser Permanente has achieved:

- a threefold increase in the rate of sepsis detection;
- a 60 percent reduction in mortality for patients with sepsis; and,
- a 25 percent drop in the risk-adjusted average length of stay for patients with sepsis.



Source: Quality Operations Support, The Permanente Medical Group

* Data for Northern California hospitals.

** Data for 2006 and 2007 represent the organization's baseline before the sepsis program was implemented in 2008.

Practical Implications and Transferability

If the U.S. as a whole achieved Kaiser Permanente's results in sepsis care, each year there would be 72,000 fewer deaths, 5 million fewer hospital days, and reductions in hospital costs of over \$11 billion.² Kaiser Permanente's integrated system allows for rapid sepsis detection and treatment. However, many of the enablers of its sepsis care model can be replicated in hospitals outside of the Kaiser Permanente system.

Key enablers include:

- an integrated approach to performance improvement;
- mentors and improvement advisers within the medical centers to support cross-functional teams;
- fully engaged, committed leadership at all levels; and,
- timely, actionable data.

For more information, please contact:

Kaiser Permanente Institute for Health Policy at <http://www.kp.org/ihp>

¹ www.healthcare.gov/compare/partnership-for-patients/

² Kaiser Permanente projections based on: Elixhauser, Ann, Bernard Friedman, and Elizabeth Stranges. Septicemia in U.S. Hospitals, 2009. Issue brief. Agency for Healthcare Research and Quality, 2011. Print. Healthcare Cost and Utilization Project; Angus, DC et al Epidemiology of Severe Sepsis in the United States: Analysis of Incidence, Outcomes and Associated Costs of Care. Crit Care Med 29(7): 1303-10. 2001; Shorr, AF, Economic Implications on an Evidence-Based Sepsis Protocol: Can we Improve Outcomes and Lower Costs? Crit Care Med 35(5): 1257-1262.2007.