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Perioperative Surgical Home successful in improving care for both elderly and children

SAN FRANCISCO – A patient-centered, team-based model of care that navigates patients through the entire surgical experience is successful in improving quality of care and outcomes in elderly patients being treated for fractures and children undergoing heart surgery, suggest two new studies being presented at the [ANESTHESIOLOGY® 2018 annual meeting](#).

Created by the American Society of Anesthesiologists, the Perioperative Surgical Home (PSH) is a patient-centered, physician-led, interdisciplinary team-based system of coordinated care that spans the entire surgical episode from the decision to have surgery to discharge from the hospital and beyond. The model is designed to achieve the quadruple aim of improving health, increasing provider and patient satisfaction while reducing the cost of care. The goals of the model are to improve operational efficiencies, decrease use of resources, reduce hospital length of stay and readmission, and decrease complications and death, resulting in a better patient experience and satisfaction.

PSH reduces time from ED to OR in elderly fracture patients

In one study, researchers at Beaumont Hospital, Royal Oak, Michigan studied the hospital's fragility fracture service line, formed by the departments of orthopedic surgery and anesthesiology in 2012. Fragility fracture is a fracture sustained by a patient older than 50 years old due to a fall from standing.

The hospital began including physician anesthesiologists in treating fragility fracture patients early in their care to expedite surgery and improve outcomes. Physician anesthesiologists were consulted for surgical clearance following orthopedic evaluation in the emergency department (ED). The goal was to decrease ED to operating room (OR) time, hospital length of stay, readmission rates and costs.

The study included all patients admitted with a fragility hip fracture who had an operation to repair it from April 2011 through December 2017. Researchers compared 308 patients treated before the fracture service line was created to 1,170 patients treated after the service line was implemented.

The time patients spent waiting to go from the ED to the OR dropped from 48 hours to 34 hours after the service line was implemented, with an associated decrease in hospital length of stay from 8.12 to 6.12 days. Readmissions decreased from 12.36 percent to 9.9 percent. The researchers are continuing to analyze the difference in hospitalization costs between the two groups.

"This is another example of the importance of the physician anesthesiologist within the Perioperative Surgical Home," said lead researcher Patrick Stafford, M.D., an anesthesiology

resident at Beaumont Hospital. “Before the program, physician anesthesiologists at the hospital often would not see a patient until they were ready for surgery. In some cases, the physician anesthesiologist would see a patient and realize they needed to have testing for heart or lung issues, or hemoglobin levels. Surgery would be delayed if the tests showed the patient was not ready or suitable for surgery.”

Decreasing delays in surgery benefits patients’ outcomes, Dr. Stafford said. “If a patient with a fragility fracture gets to the OR within 48 hours of coming into the hospital, they have a decreased risk of death and complications,” he said.

Reducing patients’ length of stay has cost benefits as well. “The hospital receives a lump sum payment for each patient, regardless of how long they stay. When patients go home sooner, the hospital spends less on each patient,” said Dr. Stafford.

Recently, Beaumont Health began involving physician anesthesiologists earlier in adult cardiac surgery cases and expanded the program to colorectal surgery. “We’re seeing patients days or even weeks before their procedure, working hand in hand with surgeons,” Dr. Stafford said.

PSH reduces length of stay in pediatric cardiac patients

In the second study, researchers analyzed the PSH model in 135 children with congenital heart disease undergoing cardiac surgery with cardiopulmonary bypass (CPB). This is the first reported PSH for children undergoing congenital cardiac surgery, according to researchers at the Children’s Hospital of Wisconsin, Milwaukee. The study found the PSH was associated with reduced variation in care and shortened intensive care unit (ICU) and hospital length of stay. The children, ranging in age from 1 month to 18 years, who were undergoing biventricular cardiac surgery with CPB were included. They were compared to 150 children who had undergone similar surgery over a two-year period before the PSH was introduced.

In developing the PSH, the researchers developed goals and measures known to help patients get out of the hospital sooner, such as early removal of the breathing tube; discontinuation of vasoactive medications that support the heart and blood pressure, such as milrinone and epinephrine; and prompt removal of central venous lines used to administer medications and fluids and bladder catheters.

After implementing the PSH, researchers found a reduction in hospital and ICU length of stay, as well as reduced variation in care, especially in the youngest patients. Overall, hospital length of stay decreased from 174 to 127 hours and ICU length of stay was reduced from 75 to 73 hours. Among children ages 1 month to 7 years, hospital length of stay decreased from 192 to 152 hours and ICU length of stay decreased from 95 to 73 hours. The researchers found 92 percent of children had their breathing tube removed within 18 hours once the PSH model was instituted, compared to 86 percent before the PSH. Duration of vasoactive medication was reduced in all ages (33 hours vs. 18 hours).

“The framework we developed could be used in any form of complex surgery associated with prolonged hospitalization,” said lead researcher John P. Scott, M.D., associate professor of anesthesiology and pediatrics at the Medical College of Wisconsin and Children’s Hospital of Wisconsin. “We’ve shown that even with a diverse group of congenital cardiac procedures, it is possible to institute a process that standardizes postoperative care and improves outcomes.”

THE AMERICAN SOCIETY OF ANESTHESIOLOGISTS

Founded in 1905, the American Society of Anesthesiologists (ASA) is an educational, research and scientific society with more than 52,000 members organized to raise and maintain the standards of the medical practice of anesthesiology. ASA is committed to ensuring physician anesthesiologists evaluate and supervise the medical care of patients before, during and after surgery to provide the highest quality and safest care every patient deserves.

For more information on the field of anesthesiology, visit the American Society of Anesthesiologists online at asahq.org. To learn more about the role physician anesthesiologists play in ensuring patient safety, visit asahq.org/WhenSecondsCount. Join the ANESTHESIOLOGY® 2018 social conversation today. Like ASA on [Facebook](#), follow [ASALifeline](#) on Twitter and use the hashtag #ANES18.

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