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Introduction

A17 Message from the Editor

Timothy J Eberlein, MD, FACS

A17 2018 Owen Wangensteen Scientific Forum of the American College of Surgeons Dedicated to Michael W Mulholland, MD, PhD, FACS

Timothy M Pawlik, MD, MPH, PhD, FACS, Sandra L Wong, MD, MS, FACS, FASCO

Original Scientific Articles from the ACS Scientific Forum 2018

1 State Level Firearm Concealed-Carry Legislation and Rates of Homicide and Other Violent Crime

Mark E Hamill, MD, FACS, FCCM, Matthew C Hernandez, MD, Kent R Bailey, PhD, Martin D Zielinski, MD, FACS, Miguel A Matos, DO, Henry J Schiller, MD, FACS

After rigorous statistical analysis of a 30-year period, changes in state legislation easing restriction on civilian concealed-carry of firearms were not associated with increase in homicide or other violent crime. Adjusting for poverty and unemployment did not significantly alter the findings.

9 Access Delayed Is Access Denied: Relationship Between Access to Trauma Center Care and Pre-Hospital Death

CME

Zain G Hashmi, MBBS, Molly P Jarman, PhD, Tarsicio Uribe-Leitz, MD, MPH, Eric Goralnick, MD, MS, Craig D Newgard, MD, MPH, Ali Salim, MD, FACS, Edward Cornwell III, MD, FACS, Adil H Haider, MD, MPH, FACS

This study analyzed 1.9 million US trauma deaths between 1999 and 2016 and found that states with poor trauma center access have more pre-hospital deaths than in-hospital deaths, which may contribute toward higher overall state-level injury mortality.

21 Acute Care Surgery Model and Outcomes in Emergency General Surgery

CME

Kathleen B To, MD, FACS, Neil S Kamdar, MA, Preethi Patil, MPH, Stacey D Collins, MA, Elizabeth Seese, MS, CCRC, Greta L Krapohl, PhD, RN, Darrell (Skip) Campbell Jr, MD, FACS, Michael J Englesbe, MD, FACS, Mark R Hemmila, MD, FACS, Lena M Napolitano, MD, FACS, for the Michigan Surgical Quality Collaborative (MSQC) Emergency General Surgery Study Group and the MSQC Research Advisory Group

This is the first multi-institutional study to identify that an acute care surgery model is associated with a significant 31% mortality reduction in emergency general surgery cases using prospectively collected, research-quality collaborative data. We further identified that new risk adjustment models are necessary for emergency general surgery outcome evaluations.

29 Impact of Affordable Care Act Insurance Expansion on Pre-Hospital Access to Care: Changes in Adult Perforated Appendix Admission Rates after Medicaid Expansion and the Dependent Coverage Provision

Cheryl K Zogg, MSPH, MHS, John W Scott, MD, MPH, Nizar Bhulani, MD, MPH, Abbe R Gluck, JD, Gregory D Curfman, MD, Kimberly A Davis, MD, MBA, FACS, Justin B Dimick, MD, MPH, FACS, Adil H Haider, MD, MPH, FACS

Reductions in the uninsured population after Medicaid expansion and the Dependent Coverage Provision were associated with significant reductions in adult perforated appendix admission rates. Despite targeting different segments of the uninsured population, both resulted in the largest increases in access to care for historically uninsured and underserved groups.

44 Evidence-Based Bundled Quality Improvement Intervention for Reducing Surgical Site Infection in Lower Extremity Vascular Bypass Procedures

Katherine E Hekman, MD, PhD, Eriberto Michel, MD, Eddie Blay Jr, MD, Irene B Helenowski, PhD, Andrew W Hoel, MD, FACS

Institution-level Vascular Quality Initiative data yielded a paucity of modifiable risk factors for surgical site infection. An evidence-based bundled intervention including chlorhexidine shower and transverse groin incision was systematically implemented and effectively reduced surgical site infection in lower extremity vascular bypass patients.

54 Deciding on Optimal Approach for Ventral Hernia Repair: Laparoscopic or Open

Kathryn A Schlosser, MD, Michael R Arnold, MD, Javier Otero, MD, Tanushree Prasad, MA, Amy Lincourt, PhD, Paul D Colavita, MD, Kent W Kercher, MD, FACS, B Todd Heniford, MD, FACS, Vedra A Augenstein, MD, FACS

Laparoscopic ventral hernia repair is associated with significantly lower postoperative infection, worse quality of life, and higher seroma rate when compared to the open approach. Recurrent hernias are associated with infection, reoperation, and subsequent recurrence.

66 Cost-Utility Analysis of Biologic and Biosynthetic Mesh in Ventral Hernia Repair: When Are They Worth It?

Steven Schneeberger, BS, Sharon Phillips, MSPH, Li-Ching Huang, PhD, Richard A Pierce, MD, PhD, FACS, Shervin A Etemad, BS, Benjamin K Poulouse, MD, MPH, FACS

Using modeling techniques, synthetic mesh is the best option for retromuscular ventral hernia repair (VHR). We established long-term complication thresholds, possibly justifying the higher up-front costs for biologic or biosynthetic mesh. This emphasizes the critical need to obtain long-term complication surveillance data to help individualize mesh choice in VHR.

72 **Taking Control of Your Surgery: Impact of a Prehabilitation Program on Major Abdominal Surgery**

Ryan Howard, MD, Yue S Yin, BS, Lane McCandless, BS, Stewart Wang, MD, FACS,
Michael Englesbe, MD, FACS, David Machado-Aranda, MD, FACS

For frail patients undergoing major abdominal surgery, participation in a formal prehabilitation program improves their physiologic response to surgery, reduces postoperative complications, and prevents significant increases in cost compared with nonfrail patients who do not participate in prehabilitation.

81 **Standardization of Outpatient Procedure (STOP) Narcotics: A Prospective Non-Inferiority Study to Reduce Opioid Use in Outpatient General Surgical Procedures****CME**

Luke B Hartford, DVM, MD, Julie Ann M Van Koughnett, MD, MEd, FRCSC, FACS,
Patrick B Murphy, MD, MSc, MPH, Kelly N Vogt, MD, MSc, FRCSC,
Richard J Hilsden, MD, MBA, FRCSC, Collin FM Clarke, MD, FRCPC, Laura J Allen, MSc,
Samuel D Gray, BSc, Neil G Parry, MD, FRCSC, FACS, Daryl K Gray, MD, FRCSC, FACS,
Ken A Leslie, MD, MHPE, FRCSC

For outpatient hernia repair and cholecystectomy, a standardized pain care bundle significantly decreased opioid prescribing, often eliminating opioid use, and adequately treating postoperative pain. This is achieved through patient education, multimodal non-opioid analgesia, and system change by nurses, anesthetists, and surgeons.

89 **Direct Oral Anticoagulants vs Low-Molecular–Weight Heparin for Thromboprophylaxis in Nonoperative Pelvic Fractures****CME**

Mohammad Hamidi, MD, Muhammad Zeeshan, MD, Joseph V Sakran, MD, FACS,
Narong Kulvatunyou, MD, FACS, Terence O’Keeffe, MD, Ashley Northcutt, MD,
El Rasheid Zakaria, MD, PhD, Andrew Tang, MD, FACS, Bellal Joseph, MD, FACS

A 2-year propensity-matched analysis of patients with nonoperative pelvic fractures reports that thromboprophylaxis with direct oral anticoagulants is associated with a lower rate of deep venous thrombosis compared with low-molecular–weight heparin. However, there is no association between the type of thromboprophylactic agent with pulmonary embolism or in-hospital mortality.

98 **Operating Room Attire Policy and Healthcare Cost: Favoring Evidence over Action for Prevention of Surgical Site Infections****CME**

Adham Elmously, MD, Katherine D Gray, MD, Fabrizio Michelassi, MD, FACS,
Cheguevara Afaneh, MD, FACS, Michael D Kluger, MD, FACS, Arash Salemi, MD, FACS,
Anthony C Watkins, MD, Alfons Pomp, MD, FACS

In this large, propensity score matched analysis of a variety of surgical procedures, mandatory use of bouffant caps covering the ears and all facial hair, and use of disposable long-sleeved jackets by non-scrubbed personnel substantially increased healthcare costs with no tangible benefit in decreasing surgical site infection.

107 Use of Cerium Oxide Nanoparticles Conjugated with MicroRNA-146a to Correct the Diabetic Wound Healing Impairment

Carlos Zgheib, PhD, Sarah A Hilton, MD, Lindel C Dewberry, MD, Maggie M Hodges, MD, Subhadip Ghatak, PhD, Junwang Xu, PhD, Sushant Singh, PhD, Sashwati Roy, PhD, Chandan K Sen, PhD, Sudipta Seal, PhD, Kenneth W Liechty, MD, FACS, FAAP

Cerium oxide nanoparticles conjugated with microRNA-146a improve wound healing in a murine and porcine diabetic wound model without compromising wound strength or elasticity. This nanotechnology-based therapy is promising, and future studies are warranted to transfer this therapy to clinical application.

116 Exploring Trajectories of Health Care Utilization Before and After Surgery

Laura A Graham, PhD, MPH, Todd H Wagner, PhD, Joshua S Richman, MD, PhD, Melanie S Morris, MD, Laurel A Copeland, PhD, Alex HS Harris, PhD, MS, Kamal MF Itani, MD, FACS, Mary T Hawn, MD, MPH, FACS

Mental health and social/behavioral factors are independently associated with high health care utilization in surgical patients. Incorporating interventions that are successful in a medical population and connecting patients to care coordinators around the time of operation may mitigate the risk of postoperative readmissions related to these factors.

Letters**129 Requirements of Minimum Statistical Knowledge for Academic Surgeons**

Tetsuji Fujita, MD

130 Damage Control Partnerships: Trauma Care Capacity-Building Abroad

James A Chambers, MD, MPH&TM, FACS, FCS(ECSA), Col, USAF, MC, SFS, Susan M Briggs, MD, MPH, FACS, John Tarpley, MD, FACS, FWACS

131 Use of Total Pancreatectomy and Preoperative Radiotherapy in Patients Undergoing Pancreatectomy with Artery Resection

Marco Del Chiaro, MD, PhD, FACS, Richard D Schulick, MD, MBA, FACS

131 Arterial Resections During Pancreatectomy: In Reply to Del Chiaro and Schulick

Mark J Truty, MD, MSc, FACS

Continuing Medical Education Program

134 Operating room attire policy and healthcare cost: favoring evidence over action for prevention of surgical site infections. Elmously A, Gray KD, Michelassi F, et al

Standardization of outpatient procedure (STOP) narcotics: a prospective non-inferiority study to reduce opioid use in outpatient general surgical procedures. Hartford LB, Van Koughnett JAM, Murphy PB, et al

Additional Articles for January 2019 Online at <http://jacscme.facs.org>

Direct oral anticoagulants vs low-molecular-weight heparin for thromboprophylaxis in nonoperative pelvic fractures. Hamidi M, Zeeshan M, Sakran JV, et al

Acute care surgery model and outcomes in emergency general surgery. To KB, Kamdar NS, Patil P, et al

Access delayed is access denied: relationship between access to trauma center care and pre-hospital death. Hashmi ZG, Jarman MP, Uribe-Leitz T, et al

Correction

139 Correction

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