AMERICAN SURGICAL ASSOCIATION

Program of the 134th Annual Meeting

Marriott Copley Place
Boston, Massachusetts

Thursday, April 10th               Friday, April 11th
Saturday, April 12th
2014
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* These sections available on-site to professional attendees, or by logging into americansurgical.info/membersOnly.cgi.
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2013–2014

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FUTURE MEETINGS OF THE
AMERICAN SURGICAL ASSOCIATION

April 23–25, 2015
San Diego Marriott Marquis & Marina
San Diego, California

April 14–16, 2016
Swissôtel Chicago
Chicago, Illinois

April 20–22, 2017
Philadelphia Marriott Downtown
Philadelphia, Pennsylvania
GENERAL INFORMATION

The Marriot Copley Place, Boston, Massachusetts, is the headquarters of the American Surgical Association for the 134th Annual Meeting, April 10-12, 2014.

REGISTRATION: The Registration Desk for the 134th Annual Meeting is located outside the Grand Ballroom during the following hours:

- Wednesday, April 9th: 2:00 p.m.–6:00 p.m.
- Thursday, April 10th: 7:00 a.m.–5:15 p.m.
- Friday, April 11th: 7:30 a.m.–5:00 p.m.
- Saturday, April 12th: 7:30 a.m.–11:00 a.m.

Fellows and guests who have pre-registered are required to sign the registration book and pick up registration materials at the ASA Registration Desk. Registration is also available on-site.

SPEAKERS AND DISCUSSANTS: All manuscripts presented at the Scientific Sessions of the Annual Meeting must be submitted electronically to The Annals of Surgery at www.editorialmanager.com/annsurg prior to the presentation of the paper. The time allowed for each presentation is ten minutes. Following the presentation, the Primary Discussant will be allotted three minutes for discussion. All additional discussants will be allotted two minutes. The total amount of time provided for discussion is fifteen minutes. Please note the use of slides will NOT be permitted for discussants.

SPEAKER READY ROOM: The Speaker Ready Room is located in Salon A. Authors are requested to submit their PowerPoint presentations on USB memory drive or CD-ROM the day prior to their session to the technician in the Speaker Ready Room. Speaker Ready Room hours are:

- Wednesday, April 9th: 2:00 p.m.–6:00 p.m.
- Thursday, April 10th: 7:00 a.m.–5:15 p.m.
- Friday, April 11th: 7:30 a.m.–5:00 p.m.
- Saturday, April 12th: 7:30 a.m.–11:00 a.m.

BANQUET: The Annual Reception and Banquet is open to Fellows of the Association and their registered spouses/partners, as well as Invited Guest Physicians and their registered spouses/partners. The Reception and Banquet is scheduled for Friday, April 11th, with the reception taking place in the Grand Ballroom Foyer and dinner in the Grand Ballroom G-K (black tie preferred, but dark suits are acceptable).

SPECIAL EVENTS:
- Address by the President: Thursday, April 10th, 10:50 a.m.
- Forum Discussion: Friday, April 11th, 10:30 a.m.
- “Quality: The Key to Surgery’s Future” Executive Session (Fellows Only): Friday, April 11th, 4:00 p.m.
- Reception & Banquet: Friday, April 11th, 7:00 p.m.

SPOUSE/GUEST HOSPITALITY: The Spouse/Guest Hospitality Suite is located in the Provincetown Room from 7:00 a.m. to 10:30 a.m., Thursday, April 10th, through Saturday, April 12th. The Local Arrangements Committee will have information on activities of interest and maps available in the room.

REGISTRANT BADGES: Badges are required for admittance to the ASA Scientific Sessions. Badge colors represent the following designations:

- Blue — Member/Fellow
- Cream — Honorary Fellow
- Green — Guest Physician
- White — Spouse/Guest
ACCREDITATION INFORMATION

CME MISSION/PURPOSE AND CONTENT
The Continuing Medical Education Mission of the American Surgical Association is to provide a national forum for presenting the developing state-of-the-art and science of general and sub-specialty surgery and the elevation of the standards of the medical/surgical profession. This mission is accomplished primarily by conducting an annual scientific meeting consisting of selected presentations containing the most current information available on clinical and research topics related to surgery or surgical specialties, including studies on outcomes, practice and science of surgery and ethical and other issues that affect its practice. In addition, the meeting features special invited speakers who address a variety of topics directly or indirectly related to the practice of surgery. The meeting is presented for the benefit of those physicians, surgeons and researchers involved in the study, treatment and cure of diseases associated with the entire spectrum of human disease. The meeting provides for a free exchange of information and serves the professional needs of the membership and invited guests. The Association’s mission is augmented by the publication of the scientific papers presented at the annual meeting in the Annals of Surgery, a monthly scientific publication distributed to subscribers throughout the world and by the publication of the Proceedings of the Annual Meeting and the scientific papers in the Transactions of the American Surgical Association, an annual publication distributed to the membership.

LEARNING OBJECTIVES
The Annual Meeting of the American Surgical Association is designed to provide two and one half days of comprehensive educational experiences in the fields of clinical surgery, experimental surgery and related sciences, surgical education and the socioeconomic aspects of surgical care. It is the Association’s intent to bring together at this meeting the leading surgeons and scientists from North America and other continents to freely and openly discuss their latest clinical and research findings.

LEARNING OUTCOMES
At the conclusion of the Annual Meeting, participants should have an enhanced understanding of the latest techniques and current research specifically related to the fields of clinical surgery, experimental surgery and related sciences, surgical education and the socioeconomic aspects of surgical care. Through the open discussion periods and the Forum Discussion, participants will have the opportunity to hear the pros and cons of each paper presented to gain an overall perspective of their current practices and to utilize results presented in order to select appropriate surgical procedures and interventions for their own patients and to integrate state-of-the-art knowledge into their current practice and/or research.

EDUCATIONAL METHODS
Authored papers supported by audio/visual presentations, panel discussion and open group discussion.

ACCREDITATION STATEMENT
This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the American College of Surgeons and the American Surgical Association. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA CATEGORY 1 CREDITS™
The American College of Surgeons designates this live activity for a maximum of 15.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.
FACULTY DISCLOSURE INFORMATION

In accordance with the ACCME Accreditation Criteria, the American College of Surgeons, as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. Therefore, it is mandatory that both the program planning committee and speakers complete disclosure forms. Members of the program committee were required to disclose all financial relationships and speakers were required to disclose any financial relationship as it pertains to the content of the presentations. The ACCME defines a ‘commercial interest’ as “any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients”. It does not consider providers of clinical service directly to patients to be commercial interests. The ACCME considers “relevant” financial relationships as financial transactions (in any amount) that may create a conflict of interest and occur within the 12 months preceding the time that the individual is being asked to assume a role controlling content of the educational activity.

ACS is also required, through our joint sponsorship partners, to manage any reported conflict and eliminate the potential for bias during the activity. All program committee members and speakers were contacted and the conflicts listed below have been managed to our satisfaction. However, if you perceive a bias during a session, please report the circumstances on the session evaluation form.

Please note we have advised the speakers that it is their responsibility to disclose at the start of their presentation if they will be describing the use of a device, product, or drug that is not FDA approved or the off-label use of an approved device, product, or drug or unapproved usage.

The requirement for disclosure is not intended to imply any impropriety of such relationships, but simply to identify such relationships through full disclosure and to allow the audience to form its own judgments regarding the presentation.
New Honorary Fellows Introductions

Claudio Bassi

With the exception of his undergraduate training in medicine at the University of Padua and a fellowship in transplantation surgery at the University of Munich, Professor Bassi has spent his entire surgical career at the University of Verona. He completed the general and thoracic surgery residencies in 1986, joined the surgical staff, and rose through the ranks to become professor and chairman of the Department of Surgery and Oncology and head of the pancreatic biliary unit in 2006. He has devoted his clinical efforts largely to developing strategies to improve the outcome and reduce the morbidity of pancreatic surgery. He has a passion for research and embraces the view that a surgeon must be a physiologist first before applying his knowledge to the treatment of surgical problems. His publications report not only on randomized prospective clinical trials of new therapies but also on molecular mechanisms of carcinogenesis and disease progression in the pancreas. He has been extraordinarily productive. In addition to his productivity, what is impressive is the number of excellent surgical and non-surgical journals that his papers have been published in. His program of investigation has been supported by grants from the Italian Ministry of Health and the European Community.

He is considered by his European and American peers to be a leading figure in pancreato-biliary surgery. Dr. Bassi is a member or honorary member of a number of surgical societies including the Royal College of Surgeons and the American College of Surgeons. He has been president of the European Digestive Surgery Society and the Associazione Italiano Studio Pancreas, and currently he is the president of the European Hepato-Pancreatic-Biliary Association. He is a member of the editorial board of the British Journal of Surgery as well as eight other journals.

Hoon Sang Chi

Dr. Chi was born during a turbulent time in Korea. He entered pre-medical courses at Yonsei University College of Science and Engineering at age 19. After two years of pre-medical studies, he attended the College of Medicine at Yonsei University. In 1970, he did a one year rotating internship at Yonsei Medical Center. In 1971, he became a resident in General Surgery at Yonsei Medical Center. From 1975 to February 1980, he attended postgraduate courses as a Doctor of Medical Science and obtained his PhD. From 1978 to 1981, he was appointed as Instructor of Surgery in the College of Medicine, Yonsei University. In 1981, he was promoted to Assistant Professor of Surgery at the same university. During the same time, he came to the United States and did a trauma fellowship at St. Paul Ramsey Medical Center, University of Minnesota. In February 1982, he was accepted into another trauma research fellowship at San Francisco General Hospital, University of California under the tutelage of George Sheldon then returned to Yonsei University and was appointed an Associate Professor of Surgery in the College of Medicine. From 1992–1996, he served as Chairman of the Department of Planning and Management, Yongdong Severance Hospital, Yonsei University College of Medicine. In 1993, he was appointed Chairman, Department of Surgery, Yongdong Severance Hospital Yonsei University College of Medicine. In 1999–2003, he served as Superintendent of the Yongdong Severance Hospital and in November of 2007, he became the acting president of Yonsei University, and in 2004–2008 was President and CEO of Yonsei University Health System. He was appointed Honorary Professor at University of Yonsei, Vice President of CHA University and CEO of CHA University Health Systems. He also was then honored as President of the CHA Bundang Medical Center.

He has a number of honors to his credit, including Honorary President of The Korean Hospital Association, President of the Korean Surgical Society, a member of the Asian Pacific Regional Advisory Council and Honorary President of the Korean Association of Traumatology and the Korean Association of Emergency Medicine. He is an active member of the International Surgery
Society and a member of the European Shock Society. He is an Honorary Fellow of the American Association for the Surgery of Trauma, a Fellow of the American College of Surgeons and is a Trustee of the Korean Surgical Society.

Dr. Chi has numerous other awards and has made major contributions to surgery in Asia, and is very worthy of being an Honorary Member of the American Surgical Association.

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Ara Darzi

Professor the Lord Ara Darzi of Denham is the Paul Hamlyn Chair of Surgery and Director of the Institute of Global Health Innovation at Imperial College London.

Professor Darzi was born in Iraq to Armenian parents. He studied medicine in Ireland and qualified from the Royal College of Surgeons of Ireland to practice and train in medicine and surgery. At 31 years of age he became one of the youngest consultant general surgeons to take up a post at Central Middlesex in London before moving to St Mary’s Hospital in 1994, three years later.

Professor Darzi established his early career championing laparoscopic and minimal access surgery and revolutionized an academic approach to refining surgical technique, training and best practice through rigorous research principles. A key determinant of his success was bringing together engineers, scientists and clinicians within the same research environment to create a collaborative multidisciplinary team focused on the advancement of clinically relevant technological innovation and its rapid translation for impactful patient benefit. For his service to medicine and research Professor Darzi was knighted by Her Majesty the Queen in 2002 as a Knight Commander of the Most Excellent Order of the British Empire (KBE).

Driven by the aim to see best-practice spread and adopted, Professor Darzi widened his attention to the enablers and dynamics that influence clinical practice on a system and national scale. This led to his highly acclaimed policy reviews on the United Kingdom National Health Service and on London’s own unique healthcare challenges.

Subsequently identified by UK Prime Minister Gordon Brown for these efforts, Professor Darzi was ennobled to the United Kingdom Peerage in 2007 and introduced to the House of Lords as Professor the Lord Ara Darzi of Denham and Parliamentary Under-Secretary of State for the Department of Health. He was subsequently elevated to Her Majesty the Queen’s Most Honourable Privy Council in 2009 in accordance with his duty as a Minister for Health.
Professor Darzi stepped down from his parliamentary role in 2009 and became Director of the Institute of Global Health Innovation at Imperial College London. The Institute has become a world-renowned academic think tank which champions innovation in policy research, healthcare design, technology and engineering across the healthcare sector and promotes transformational adoption and diffusion on an international platform. His clinical research, wider academic achievements and ongoing commitment to the field of healthcare innovation were recognized in 2013 when he was invited to become a Fellow of the Royal Society. He is also a Fellow of the Academy of Medical Sciences, and Honorary Fellow of the Royal Academy of Engineering. More recently he was appointed as a foreign member of the Institute of Medicine.

Through the Institute of Global Health Innovation and as Executive Chair of the World Innovation Summit for Health, Professor Darzi organized and led a highly acclaimed international summit in Doha, Qatar hosted by Her Highness Sheikha Mozabint Nasser and Qatar Foundation, in 2013. The summit brought together over one thousand delegates, including Royals and over fifteen health and finance Ministers, to debate and showcase new ideas in healthcare policy to tackle the key healthcare challenges faced today.

In recognition of his ongoing support for the Qatari healthcare system and this summit he was awarded the Sash of Independence in 2014 by the Emir of Qatar, one of only a handful of non-Qatari recipients of their prestigious national honour.

Professor Darzi continues to balance his esteemed academic pursuits with a rich and rewarding clinical practice.

Professor Darzi lives in London with his wife, Wendy. They have two children.

As a surgeon, an academic and a politician, Professor Darzi has led an international and assorted career focused on the translation of evidence-based practice and policies which drive quality and tackle the injustices of healthcare inequalities.

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Alberto R. Ferreres

Professor Alberto Ferreres attended medical school at the University of Buenos Aires graduating Summa cum laude. He trained in General Surgery and Surgical Oncology at the University of Buenos Aires Hospital and Clinics from 1980–1987. He received a Doctor of Jurisprudence from The School of Law in 1987 and obtained a Master of Public Health from Salvador University in 1988–89. Dr. Ferreres spent time as a research fellow in the Department of Gastroenterology at the University of Aarhus in Denmark and was an International Guest Scholar of the American College of Surgeons in 1991.

In 2002, Dr. Ferreres was appointed Professor and Chairman of the Department of Surgery at the University of Buenos Aires. He serves as the Director of the General Surgery Residency Training program at the Carlos Bocadorlando Hospital and Director of the Training Center for minimally invasive and Endoscopic Surgery at the University of Buenos Aires. He is a leader in surgical gastroenterology and minimally invasive surgery in Latin America. In addition to his surgical activities, Dr Ferreres has maintained an avid interest in public health policy and management and patient safety and has been the recipient of numerous scholarships and awards in these areas from the National Ministry of Health and National Academy of Medicine in Argentina.

Alberto has published more than 100 scientific articles in peer reviewed journals, 22 book chapters and three textbooks of Surgery. He was elected to membership in the Argentine Surgical Association, Argentine Surgical Academy, SSAT, SAGES, International Society of Surgery (ISS-SIC), International Society of Digestive Surgery (ISDS), Fellow, American College of Surgeons, Latin American Surgical Federation, and Latin American Association of Endoscopic Surgeons. He has received the SAGES recognition of excellence award and is currently President–elect of the ISDS and the Argentine chapter of the ACS. He is a member of the Executive committee of the ISS-SIC and International Relations Committee of the ACS. Dr. Ferreres is also an Honorary member of surgical societies in Chile and Ecuador. He has served as Visiting Professor of Surgery in the US, Canada and throughout Europe.
Richard John Heald

Professor Richard John (Bill) Heald was born in the city of St. Albans in Southern Herefordshire, England. He received his education and medical degree from Cambridge University and Guy’s Hospital. He did his surgical training in London, primarily at Guy’s Hospital, receiving his FRCS of both Edinburgh and London. He has spent his entire career as a consultant surgeon at the Basingstoke and North Hampshire Hospital of the NHS in Basingstoke, Hampshire, England. He is also currently the Surgical Director of the Pelican Cancer Foundation in the same city. Dr. Heald and his team pioneered the surgical technique of Total Mesorectal Excision for colorectal cancer and have done much to promote the worldwide acceptance of this important cancer surgical technique. This procedure not only improves the survival of patients with colorectal cancer but also dramatically improves quality of life and significantly reduces the rate of local recurrence. The Pelican Cancer Foundation has promoted the technique with Professor Heald having personally performed over 500 live operations in over 50 countries worldwide.

Professor Heald has received substantial recognition throughout his career with dozens of international honorary degrees, fellowships and professorships. Most noted of these awards is the Chesselden Medal from the Royal College of Surgeons and the Gold Medal and an Honorary Professorship of Surgery at the University of Leiden, in The Netherlands. He has been recognized as an Honorary Fellow of the American College of Surgeons in 2013. He has given major Keynote lectures, conducted international master classes or workshops on the TME technique throughout the world. He has published 145 major publications.

Professor Heald has been married to his wife Denise for 45 years and has three daughters.

Dr. Heald, despite his career filled with surgical innovation describes himself as a “practical surgeon who thought about the embryology of rectal cancer and has been extraordinarily fortunate for his thoughts to have borne much more fruit than he had ever dreamed when he started at a small district hospital in Basingstoke.”

Ari Leppäniemi

Ari Leppäniemi (MD, PhD, DMCC), born in Kokkola Finland, is the Chief of Emergency Surgery and Surgical Critical Care at the Meilahti Hospital, University of Helsinki Central Hospital in Helsinki Finland. He is an Associate Professor of Surgery at the Helsinki University and Adjunct Professor of Surgery at the Uniformed Services University of the Health Sciences in Bethesda, USA.

He is an internationally recognized expert in trauma surgery and critical care who has served with the International Red Cross in armed conflicts and civilian mass casualty disasters in many countries.

He was awarded the Finnish Lion Knight Medal 1st Class by the President of Finland and the Commendable Service Medal of the USUHS in Bethesda Maryland.

Ari is the Past-President of the Finnish Society of Surgery, the International Association for Trauma Surgery and Intensive Care (IATSIC), President-elect of the European Society for Trauma and Emergency Surgery (ESTES), and Past-President of the Finnish Association of General Surgery.

He is the Editor-in-Chief of the Scandinavian Journal of Surgery, Editor of the European Journal of Trauma and Emergency Surgery, Associate Editor of the World Journal of Surgery, the World Journal of Emergency Surgery, the Scandinavian Journal of Trauma, Resuscitation & Emergency Medicine, and member of the Editorial Board of more than 10 other journals.

Ari is a surgeon, scientist and scholar who has published over 130 peer-reviewed papers, 175 review articles, book chapters and dissertations. His research efforts have provided major contributions to our understanding of the management of abdominal trauma, peritonitis, pancreatitis and hemorrhagic shock.

His hobbies include fishing, badminton, political and historical literature, movies and jazz. He is married and has two teenaged sons. We are pleased to welcome him to Honorary Fellowship.
Pascual Parrilla

Professor Pascual Parrilla was born and raised in Valencia on the east coast of Spain. He received his medical degree from the University of Valencia and stayed on to complete his training in general and digestive surgery and to start his academic career at the Valencia Clinic University Hospital. He subsequently obtained additional experience in liver and pancreatic transplantation under the guidance of Professors Calne, Starzl, and Sutherland. In 1975, he was recruited to the University of Murcia as professor and chairman of the Department of Surgery. His principal interest is foregut and hepatic diseases. He is recognized particularly for his esophageal motility studies and the only randomized controlled trial comparing medical to surgical intervention for Barrett’s esophagus.

Professor Parrilla is known and admired in Europe and the United States. As one American colleague put it: “a kinder and humbler surgeon would be hard to find on planet earth!” He is a respected leader in Spanish surgery, past president of the Spanish Association of Surgeons, the current Editor-in-Chief of the Association’s journal Cirugía Española, a wise administrator of his department, a charismatic and insightful educator, and a productive clinical investigator in esophageal and hepatobiliary surgery including liver transplantation.”

His remarkable career has resulted in 686 publications in peer-reviewed journals, 159 book chapters, and 6 books. He was elected Honorary Member of the Chilean Society of Surgery, Peruvian Society of Surgery, Valencian Society of Surgery, Catalanian Society of Surgery, Uruguayan Society of Surgery and the Spanish Chapter of the International College of Surgeons. He is the president of the National Committee for Training in General and Digestive Surgery and has been a member of the National Assessment Committee for the Accreditation Institutes in Biomedical Research.
FRIDAY, APRIL 11th

7:00 a.m.  ASA Women in Surgery Breakfast  Grand Ballroom B-C
8:00 a.m.  Scientific Session III  Grand Ballroom E-F
           Moderator: Layton F. Rikkers, M.D.
10:30 a.m. Forum Discussion:  Grand Ballroom E-F
           “Quality: The Key to Surgery’s Future”
           Moderator: Layton F. Rikkers, M.D.
1:30 p.m.  Scientific Session IV  Grand Ballroom E-F
           Moderator: Ronald J. Weigel, M.D.
4:00 p.m.  Executive Session (Fellows Only)  Grand Ballroom E-F
           Presentation of the Flance-Karl Award
7:00 p.m.  Annual Reception  Grand Ballroom Foyer
8:00 p.m.  Annual Banquet  Grand Ballroom G-K
           (Black tie preferred, but dark suits are acceptable.)

SATURDAY, APRIL 12th

8:00 a.m.  Scientific Session V  Grand Ballroom E-F
           Moderator: New President-Elect
11:00 a.m. Adjourn
9:10 AM – 11:00 AM
SCIENTIFIC SESSION I
Grand Ballroom E-F
Moderator: Layton F. Rikkers, M.D.

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<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>9:10 AM – 9:35 AM</td>
<td>Lessons Learned from the Management of 10,000 Patients with Soft Tissue Sarcoma</td>
<td>Murray F. Brennan, Cristina Antonescu*, Nicole Moraco*, Sam Singer</td>
<td>Memorial Sloan-Kettering Cancer Center, New York, NY</td>
</tr>
<tr>
<td>9:35 AM – 10:00 AM</td>
<td>Risks of Recurrence and Emergency Surgery Following Non-Operative Treatment of Colonic Diverticulitis: A Population-Based Competing Risk Analysis</td>
<td>Debbie Li*, Charles de Mestral*, Nancy N. Baxter, Robin S. McLeod, Rahim Moineddin*, Avery B. Nathens</td>
<td>University of Toronto, Toronto, ON, Canada</td>
</tr>
</tbody>
</table>
1:30 PM – 5:15 PM
SCIENTIFIC SESSION II
Grand Ballroom E-F
Moderator: Anna M. Ledgerwood, M.D.

1:30 PM – 1:55 PM
5 Increased Trauma Center Volume Is Associated with Improved Survival After Severe Injury: Results from a Resuscitation Outcomes Consortium (ROC) Study
Joseph P. Minei†, Timothy C. Fabian‡, Danielle M. Guffey§*, Craig Newgard†*, Eileen M. Bulger∥, Karen J. Brasel¶, Jason Sperry†*, Russell D. MacDonald∥*
†University of Texas Southwestern Medical Center, Dallas, TX; ‡University of Tennessee Health Science Center, Memphis, TN; ¶University of Washington, Seattle, WA; §Oregon Health and Science University, Portland, OR; ¶Medical College of Wisconsin, Milwaukee, WI; ∥University of Pittsburgh, Pittsburgh, PA; ¶University of Toronto, Toronto, ON, Canada

1:55 PM – 2:20 PM
6 Disease Severity Not Operative Approach Drives Organ Space Infection Following Pediatric Appendectomy
*University of Rochester Medical Center, Surgical Health Outcomes and Research Enterprise, Rochester, NY; †University of Rochester Medical Center, Department of Pediatric Surgery, Rochester, NY

2:20 PM – 2:45 PM
7 Primary Hyperparathyroidism with Negative Imaging: A Significant Clinical Problem
Hospital of the University of Pennsylvania, Philadelphia, PA

2:45 PM – 3:10 PM
8 Trainee Participation Affects Outcomes In Emergency General Surgery Procedures: An Analysis of the NSQIP Database
Boston University, Boston, MA

3:10 PM – 3:35 PM
9 Value of Intraoperative Neck Margin Analysis During Whipple for Pancreatic Adenocarcinoma: A Multicenter Analysis of 1399 Patients
†Division of Surgical Oncology, Winship Cancer Institute, Emory University, Atlanta, GA; ‡Department of Surgery, University of Wisconsin School of Medicine and Public Health, Madison, WI; §Department of Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL; ¶Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, OH; ∥Department of Surgery, University of North Carolina School of Medicine, Chapel Hill, NC; ¶Department of Surgical Oncology, Department of Surgery, University of Louisville School of Medicine, Louisville, KY; *Department of Surgery, Vanderbilt University School of Medicine, Nashville, TN; †Department of Surgery, Washington University School of Medicine, St. Louis, MO

*By invitation

*By invitation
3:35 PM – 4:00 PM

10
Does Hospital Accreditation Matter for Bariatric Surgery?
John M. Morton*, Trit Garg*, Ninh Nguyen*
1Stanford University, Stanford, CA; 2University of California, Irvine, Irvine, CA

4:00 PM – 4:25 PM

11
Repair of Extensive Aortic Aneurysm: A Single-Center Experience with the Elephant Trunk Technique Over Two Decades
University of Texas Health Science Center at Houston, Houston, TX

4:25 PM – 4:50 PM

12
Extrapleural Pneumonectomy in the Treatment of Epithelial Malignant Pleural Mesothelioma: Experience in 529 Patients
David Sugarbaker, William Richards*, Raphael Bueno
Brigham and Women’s Hospital, Boston, MA

4:50 PM – 5:15 PM

13
Laser Resurfacing and Remodeling of Hypertrophic Burn Scars: The Results of a Large, Prospective, Before–After Cohort Study, with Long Term Follow-Up
Charles S. Hultman, Jon S. Friedstat*, Renee E. Edkins*, Bruce A. Cairns, Anthony A. Meyer
University of North Carolina, Chapel Hill, NC

*By invitation
8:50 AM – 9:15 AM
16  Market Competition Influences Renal Transplantation Risk and Outcomes
Joel T. Adler*, Rosh K.V. Sethi*, Heidi Yeh*,
James F. Markmann*, Louis L. Nguyen*
1Massachusetts General Hospital, Boston, MA; 2Harvard Medical School, Boston, MA; 3Brigham and Women’s Hospital, Boston, MA

9:15 AM – 9:40 AM
17  Are Higher Hospital Venous Thromboembolism (VTE) Rates an Indicator of Better Quality? Evaluating the Validity of the Hospital VTE Quality Measure Using Clinical Data
Mila H. Ju*, Jeanette W. Chung*, Christina V. Kinnier*,
David W. Baker*, David J. Bentrem*, David M. Mahvi,
Clifford Y. Ko*, Karl Y. Bilimoria*
1Northwestern University, Chicago, IL; 2University of California, Los Angeles (UCLA), Los Angeles, CA

9:40 AM – 10:05 AM
18  Hospital Readmissions: Necessary Evil or Preventable Target for Quality Improvement
Erin G. Brown*, Debra Burgess*, Richard J. Bold
UC Davis, Sacramento, CA

10:05 AM – 10:30 AM
19  Is There a Relationship Between Patient Satisfaction and Favorable Surgical Outcomes?
Gregory Kennedy*, Sarah Tevis*, K. Craig Kent
University of Wisconsin, Madison, WI

10:30 AM – 12:00 PM
FORUM DISCUSSION
Quality: The Key to Surgery’s Future
Moderator: Layton F. Rikkers, M.D.
“Measuring Quality”
David B. Hoyt, M.D.
Executive Director
American College of Surgeons
Chicago, IL
“Creating Quality Within Systems”
David R. Flum, M.D.
University of Washington Medical Center
Seattle, WA
“Ensuring Quality at the Individual Level”
Mark A. Malangoni, M.D.
Associate Executive Director
American Board of Surgery
Philadelphia, PA
1:30 PM – 1:55 PM
20 Extent of Surgery for Papillary Thyroid Cancer Is Not Associated with Survival: An Analysis of 69,136 Patients
Mohamed Abdelgadir Adam*, Lin Gu*, John Pura*, Michaela A. Dinan*, Douglas Tyler, Shelby D. Reed*, Sanziana Roman*, Julie A. Sosa*
Duke University School of Medicine, Durham, NC

1:55 PM – 2:20 PM
21 Tumor Subtype Impacts Surgical Approach and Pathological Response to Neoadjuvant Chemotherapy in Node-Positive Breast Cancer Patients – Findings from a Prospective Multicenter Clinical Trial (ACOSOG Z1071 [Alliance])
Judy C. Boughey*1, Linda McCall*2, Karla Ballman*1, Elizabeth A. Mittendorf*1, Gretchen Ahrendt*1, Lee Wilke*1, Bret Taback*1, A. Marilyn Leitch*1, Teresa Flippo-Morton*1, Kelly K. Hunt1
1Mayo Clinic, Rochester, MN; 2Duke University, Durham, NC; 3University of Wisconsin Hospital and Clinics, Madison, WI; 4University of Rochester Medical Center, Rochester, NY; 5University of Texas MD Anderson Cancer Center, Houston, TX

2:20 PM – 2:45 PM
22 Randomized Pilot Trial of Bariatric Surgery Versus Intensive Weight Management on Diabetes Remission in Patients with Type 2 Diabetes Who Do NOT Meet NIH Criteria for Surgery and the Role of sRAGE Diabetes Biomarker as a Predictor of Success
1NYU Medical Center/Bellevue Hospital, New York, NY; 2Lincoln Health Center, New York, NY; 3MetroPlus Health Plan, New York, NY

2:45 PM – 3:10 PM
23 Failure of Evidence-Based Cancer Care in the US – Rectal Cancer Treatment, Geography and Hospital Type
John R.T. Monson1, Christian P. Probst*1, Steven D. Wexner2, Feza H. Remzi*3, Julio Garcia-Aguilar4, George J. Chang*4, David W. Dietz, On behalf of The OSTRiCh Consortium*4
1University of Rochester Medical Center, Rochester, NY; 2Cleveland Clinic, Weston, FL; 3Cleveland Clinic, Cleveland, OH; 4Baylor University Medical Center, Houston, TX; 5Memorial Sloan-Kettering Cancer Center, New York, NY; 6University of Texas MD Anderson Cancer Center, Houston, TX

3:10 PM – 3:35 PM
24 Total Laparoscopic Pancreatoduodenectomy for Pancreatic Ductal Adenocarcinoma: Oncologic Advantages Over Open Approaches
Kristopher P. Croome*, Michael Farnell, Florencia G. Que*, Kaye Reid-Lombardo*, Mark Truty*, David Nagorney, Michael L. Kendrick*
Mayo Clinic, Rochester, MN

*By invitation
3:35 PM – 4:00 PM
25 Early Use of Low Residue Diet Is Superior to Clear Liquid Diet After Elective Colorectal Surgery
Cheryl C.L. Lau*, Edward Phillips, Catherine Bressee*, Philip R. Fleshner*
Cedars Sinai Medical Center, Los Angeles, California, CA

4:00 PM – 5:00 PM
EXECUTIVE SESSION
ASA Fellows Only
Presentation of the Flance-Karl Award

7:00 PM ANNUAL RECESSION
Grand Ballroom Foyer

8:00 PM ANNUAL BANQUET
Grand Ballroom G-K

SATURDAY, APRIL 12, 2014
8:00 AM – 11:00 AM
Grand Ballroom E-F
SCIENTIFIC SESSION V
Moderator: New President-Elect

8:00 AM – 8:25 AM
26 Differences in Surgical Outcomes Between Hepatitis B (HBV) and Hepatitis C (HCV) Related Hepatocellular Carcinoma (HCC)
Icahn School of Medicine at Mount Sinai, New York, NY

8:25 AM – 8:50 AM
27 Long-Term Outcomes After Total Pancreatectomy and Islet Cell Autotransplantation: Is It a Durable Operation?
University of Cincinnati, Cincinnati, OH

8:50 AM – 9:15 AM
28 Measuring Risk-Adjusted Value Using Medicare and ACS-NSQIP: Is High Quality, Low Cost Surgical Care Achievable Everywhere?
Elise H. Lawson*, David S. Zingmond*, Anne Stey*, Bruce Lee Hall, Clifford Y. Ko
UCLA School of Medicine, Los Angeles, CA

*By invitation
9:15 AM – 9:40 AM
29
The Natural History of Main Duct Involved, Mixed-Type Intraductal Papillary Mucinous Neoplasm: Parameters Predictive of Progression
Indiana School of Medicine, Indianapolis, IN

9:40 AM – 10:05 AM
30
A Twenty Year Experience with Thoracic Endovascular Aortic Repair
University of Michigan Cardiovascular Center, Ann Arbor, MI

10:05 AM – 10:30 AM
31
X-Chromosome Linked IRAK1 Polymorphism Is Strong Predictor of Multiple Organ Failure and Mortality Post-Injury
University of Pittsburgh, Pittsburgh, PA

10:30 AM – 10:55 AM
32
A Novel Approach to Maintaining Gut Mucosal Integrity Using an Oral Enzyme Supplement
1Massachusetts General Hospital, Harvard Medical School, Boston, MA; 2Sanford Children’s Health Research Center, Sanford-Burnham Medical Research Institute, La Jolla, CA

11:00 AM ADJOURN
THURSDAY MORNING, APRIL 10th

8:15 AM
Grand Ballroom E-F

President’s Opening Remarks

Secretary’s Welcome & Introduction of New Fellows Elected In 2013

President’s Introduction of Honorary Fellows

Presentation of the Medallion for Scientific Achievement

Presentation of the Medallion for the Advancement of Surgical Care

Past President Eulogy

Report of the Committee on Arrangements

9:10 AM – 10:50 AM
Grand Ballroom E-F

SCIENTIFIC SESSION I
Moderator: Layton F. Rikkers, M.D.

1
Lessons Learned from the Management of 10,000 Patients with Soft Tissue Sarcoma
Murray F. Brennan, Cristina Antonescu*, Nicole Moraco*, Sam Singer
Memorial Sloan-Kettering Cancer Center, New York, NY

OBJECTIVE: Soft tissue sarcomas are uncommon, heterogeneous malignancies that can occur throughout the body. Because of their rarity, their natural history has been difficult to characterize accurately.

METHODS: Beginning in July, 1982, we prospectively collected data on all inpatients receiving surgery for soft tissue sarcoma at our institution. By June, 2013, we had 10,000 cases. Data were reviewed weekly or bi-weekly.

RESULTS: Analysis of this dataset provides demographics, natural history, treatment factors and outcomes. Clinical-pathologic factors include site, size, histopathology and grade, all of which are associated with outcome. Outcomes can be predicted by nomograms that are site-, recurrence- and histology-specific. Natural history evaluation defines site-specific local recurrence and disease-specific survival (see Figures 1 and 2) over 30 years. Deaths from disease continue to occur >5 years from diagnosis. Among those alive at 5 years, 25% of extremity, 49% of visceral, and 59% of retroperitoneal patients eventually die from disease. This demonstrates the importance of long-term follow-up for rare malignancies.

*By invitation
CONCLUSIONS: Well-maintained prospective databases developed and followed for decades are a rich source for knowledge-based, histology-specific cancer care in patients with rare tumors. Mathematical models for individual patient outcome prediction require such large long-term data sets.
Risks of Recurrence and Emergency Surgery Following Non-Operative Treatment of Colonic Diverticulitis: A Population-Based Competing Risk Analysis

Debbie Li*, Charles de Mestral*, Nancy N. Baxter, Robin S. McLeod, Rahim Moineddin*, Avery B. Nathens
University of Toronto, Toronto, ON, Canada

OBJECTIVE: This study aimed to characterize the clinical course of patients with diverticulitis following initial non-operative management.

METHODS: Administrative discharge data were used to identify all patients treated non-operatively at first hospitalization for diverticulitis in Ontario, Canada (2002–2012). Time-to-event analysis and Fine and Gray competing risk regression were used to characterize the risks of readmission and emergency surgery, while accounting for death and elective colectomy as competing events.

RESULTS: Of 18,543 patients hospitalized, 14,404 (78%) were managed nonoperatively. Median age was 59 years (IQR: 48–74), median follow-up was 3.9 years (maximum 10, IQR: 1.8–6.5). Five-year cumulative incidence for readmission was 8.6% (95% CI: 8.1–9.1%) and 1.9% for emergency surgery (95% CI: 1.7–2.2%), whereas the cumulative incidence for death was 15.7% (95% CI: 15.0–16.5%). Patients age <50 years had higher risk of readmission (10.2% vs. 8.0%, p < 0.001) but not emergency surgery (1.8% vs. 2.0%, p = 0.565). Compared to uncomplicated diverticulitis, patients with complicated index disease (abscess, fistula, perforation) were at increased risk (readmission 11.3% vs. 7.9%, emergency surgery 4.3% vs. 1.3%, all p < 0.001). In multivariable regression, complicated disease and number of readmissions were associated with increased risk of subsequent emergency surgery, age <50 was not (see Table).

CONCLUSIONS: Risks of readmission and emergency surgery are low following non-operative management of diverticulitis. This offers support for the practice of deferring colectomy for patients without persistent symptoms or multiple recurrences.

<table>
<thead>
<tr>
<th>Covariate</th>
<th>Adjusted Hazard Ratio for Readmission (95% CI)</th>
<th>Adjusted Hazard Ratio for Emergency Surgery (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young Age (&lt;50 years)</td>
<td>1.26 (1.11–1.44)</td>
<td>0.85 (0.68–1.07)</td>
</tr>
<tr>
<td>Female Sex</td>
<td>1.15 (1.02–1.30)</td>
<td>1.22 (0.99–1.50)</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (per 1 point increase)</td>
<td>0.90 (0.84–0.97)</td>
<td>0.91 (0.82–1.02)</td>
</tr>
<tr>
<td>Income (per each increase in quintile)</td>
<td>0.93 (0.89–0.97)</td>
<td>0.87 (0.81–0.93)</td>
</tr>
<tr>
<td>Number of Previous Admissions (time-dependent covariate)</td>
<td>n/a</td>
<td>1.82 (1.56–2.11)</td>
</tr>
<tr>
<td>Complicated Index Disease (abscess, fistula, perforation)</td>
<td>1.48 (1.27–1.72)</td>
<td>3.15 (2.52–3.92)</td>
</tr>
<tr>
<td>Percutaneous Abscess Drainage at Index Admission</td>
<td>1.31 (0.96–1.81)</td>
<td>1.37 (0.94–1.99)</td>
</tr>
<tr>
<td>Calendar Year of Index Admission</td>
<td>0.99 (0.96–1.01)</td>
<td>0.98 (0.94–1.01)</td>
</tr>
</tbody>
</table>
The Enteric Nervous System (ENS) Neuropeptide, Bombesin (BBS), Reverses Innate Immune Impairments During Parenteral Nutrition (PN)

Kenneth A. Kudsk, Rebecca A. Busch*, Aaron F. Heneghan*, Joseph F. Pierre*, Xinying Wang*
University of Wisconsin-Madison, Madison, WI

OBJECTIVE(S): Lack of enteral stimulation during PN impairs acquired (e.g., IgA) and innate mucosal immunity providing a cogent explanation for increased infections in PN fed patients compared to enteral feeding. Experimentally, BBS, a gastrin-releasing neuropeptide analogue, reverses PN-induced defects in gut and respiratory acquired immunity. Paneth cells produce and store the key bactericidal peptides of innate immunity for release into the lumen after cholinergic stimulation. We hypothesized that BBS during PN restores antimicrobial peptides and the bactericidal function of innate immunity.

METHODS: IV cannulated male ICR mice were randomized to Chow, PN, or PN + 15 ug TID BBS (n = 7/group) for 5 days. Ileal tissue was analyzed for antimicrobial peptides (sPLA2 fluorescent activity, lysozyme protein by Western, and RegIII-γ by RT-PCR and all by IHC). Ileal tissue stimulated with a cholinergic agonist (100 μM bethanechol) assessed Pseudomonas bactericidal activity. Additional mice (Chow: n = 7; PN: n = 9; PN+BBS: n = 8) were assessed for E. coli intestinal invasion in ex-vivo culture.

<table>
<thead>
<tr>
<th>Chow</th>
<th>PN</th>
<th>PN+BBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>sPLA2 fluorescent activity (Fl/min/μL/total protein)</td>
<td>1,070 ± 140</td>
<td>450 ± 72*</td>
</tr>
<tr>
<td>Lysozyme protein (lysozyme/total protein)</td>
<td>6,390 ± 1,200</td>
<td>2,680 ± 620*</td>
</tr>
<tr>
<td>RegIII-γ by RT-PCR (RegIII-γ/b-actin expression)</td>
<td>2.4 ± 0.1</td>
<td>1.3 ± 0.1*</td>
</tr>
<tr>
<td>Bactericidal activity (%)</td>
<td>25.3 ± 3.6</td>
<td>13.0 ± 3.2*</td>
</tr>
<tr>
<td>Enteroinvasion (x10³ CFU)</td>
<td>3.3 ± 1.1</td>
<td>63.9 ± 20.0*</td>
</tr>
</tbody>
</table>

(mean ± SEM)

*P < 0.05 vs. Chow and BBS,
†P < 0.05 vs. Chow

RESULTS: Compared to Chow, PN significantly decreased cellular levels of all antimicrobial peptides, whereas BBS maintained them at Chow levels. Functionally, BBS prevented PN loss of bactericidal activity after cholinergic stimulation but failed to improve bacterial enteroinvasion in unstimulated tissue.

CONCLUSIONS: The ENS controls antimicrobial peptide levels in Paneth cells during PN but both ENS and parasympathetic stimulation are required for mucosal protection by innate immunity.
The HYSLAR Trial: A Prospective Randomized Trial on the Use of a Restrictive Fluid Regimen with 3% Hypertonic Saline (HS) Versus Lactated Ringers (LR) in Patients Undergoing Pancreaticoduodenectomy (PD)


*By invitation

Thomas Jefferson University, Philadelphia, PA

OBJECTIVE(S): Restrictive fluid regimens have been shown to reduce perioperative complications in patients undergoing surgery. The objective of this study was to determine if the volume and type of fluid administered during and after PD impacts postoperative outcomes.

METHODS: Between May, 2011 and November, 2013, patients undergoing PD were consented and enrolled in an IRB approved, prospective, randomized trial (NCT 01428050). At laparotomy, patients were stratified by gland texture (soft vs. hard) and randomized to LR (15 ml/kg/hr LR intraop, and 2 ml/kg/hr LR postop until the morning of POD #1) or HS (9 ml/kg/hr LR and 1 ml/kg/hr HS intraop, and 1 ml/kg/hr HS postop until the morning of POD #1). The trial was powered to detect a 30% reduction in the overall rate of complications (80% power, alpha = 0.05, chi-squared test).

RESULTS: There were 245 patients, with 122 and 123 in the LR and HS groups, respectively. Demographic variables between groups were similar (see table). The LR patients had a significantly greater net fluid balance (91 vs. 65 ml/kg, p = 0.02) for the entire admission. The overall complication rate (54% vs. 41%, p < 0.05) and the cumulative number of complications (120 vs. 80, p = 0.01), were significantly greater in the LR group. Reoperation rate, length of stay, readmission rate, and 30-day mortality were similar between groups.

<table>
<thead>
<tr>
<th>Patient Characteristics and Results</th>
<th>Lactated Ringers (n = 122)</th>
<th>Hypertonic Saline (n = 123)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>68.6</td>
<td>66.6</td>
<td>NS</td>
</tr>
<tr>
<td>BMI</td>
<td>25.3</td>
<td>26.8</td>
<td>NS</td>
</tr>
<tr>
<td>Preop albumin</td>
<td>4.2</td>
<td>4.1</td>
<td>NS</td>
</tr>
<tr>
<td>Estimated blood loss (ml)</td>
<td>400</td>
<td>350</td>
<td>NS</td>
</tr>
<tr>
<td>Fluid intake intraop (ml/kg/hr)</td>
<td>14.8</td>
<td>10.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intake for entire admission (ml/kg)</td>
<td>316</td>
<td>274</td>
<td>0.006</td>
</tr>
<tr>
<td>Output for entire admission (ml/kg)</td>
<td>213</td>
<td>212</td>
<td>NS</td>
</tr>
<tr>
<td>Total admission balance (ml/kg)</td>
<td>91</td>
<td>65</td>
<td>0.02</td>
</tr>
<tr>
<td>Pathology: pancreatic and periampullary cancer</td>
<td>88 (72%)</td>
<td>84 (68%)</td>
<td>NS</td>
</tr>
<tr>
<td>Subjects with complications</td>
<td>66 (54%)</td>
<td>50 (41%)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Cumulative complications</td>
<td>120</td>
<td>80</td>
<td>0.01</td>
</tr>
<tr>
<td>Pancreatic fistula</td>
<td>20 (16%)</td>
<td>18 (15%)</td>
<td>NS</td>
</tr>
<tr>
<td>Delayed gastric emptying</td>
<td>21 (17%)</td>
<td>13 (11%)</td>
<td>NS</td>
</tr>
<tr>
<td>Intra-abdominal abscess</td>
<td>20 (16%)</td>
<td>9 (7%)</td>
<td>&lt;0.03</td>
</tr>
<tr>
<td>Re-operative rate</td>
<td>1 (1%)</td>
<td>4 (3%)</td>
<td>NS</td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td>7</td>
<td>7</td>
<td>NS</td>
</tr>
<tr>
<td>Readmission rate</td>
<td>13 (11%)</td>
<td>15 (12%)</td>
<td>NS</td>
</tr>
<tr>
<td>30-day mortality</td>
<td>1 (1%)</td>
<td>0 (0%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

CONCLUSIONS: A restrictive fluid regimen with 3% HS significantly reduces complications in patients undergoing PD.
10:50 AM – 12:00 PM
Grand Ballroom E-F

PRESIDENTIAL ADDRESS

Introduction of the President
Ronald J. Weigel, M.D.

Address by the President
Layton F. Rikkers, M.D.

1:30 PM – 5:15 PM
Grand Ballroom E-F

SCIENTIFIC SESSION II

Moderator: Anna M. Ledgerwood, M.D.

Increased Trauma Center Volume Is Associated with Improved Survival After Severe Injury: Results from a Resuscitation Outcomes Consortium (ROC) Study

Joseph P. Minei1, Timothy C. Fabian2, Danielle M. Guffey*,3, Craig Newgard*,4, Eileen M. Bulger5, Karen J. Brasel1, Jason Sperry*,6, Russell D. MacDonald*6

1University of Texas Southwestern Medical Center, Dallas, TX; 2University of Tennessee Health Science Center, Memphis, TN; 3University of Washington, Seattle, WA; 4Oregan Health and Science University, Portland, OR; 5Medical College of Wisconsin, Milwaukee, WI; 6University of Pittsburgh, Pittsburgh, PA; 7University of Toronto, Toronto, ON, Canada

OBJECTIVE: ROC is an NHLBI sponsored network of 11 centers and 60 hospitals for conducting emergency care research. For several procedures high volume centers demonstrate superior outcomes versus low volume centers. This remains controversial for trauma center outcomes.

METHODS: This study was a secondary analysis of prospectively collected data from the ROC multicenter prehospital Hypertonic Saline Trial in patients with GCS ≤8 (traumatic brain injury [TBI]) or SBP ≤90 and pulse ≥110 (shock). Regression analyses evaluated associations between trauma volume and the following outcomes: 24-hour mortality, 28-day mortality, ventilator-free days (VFD), worst MODS score, and poor 6-month Glasgow outcome scale extended (6M-GOSE ≤4).

*By invitation
RESULTS: 2,070 patients were enrolled; 1,251 in the TBI cohort and 819 in the shock cohort. Overall 24-hour and 28-day mortality were 16% and 25%, respectively. For every 1,000 patient admission increase, there were 13% and 14% relative decreases in 24-hour and 28-day mortalities, respectively for all patients. VFD increased and worst MODS decreased as volume increased (see Table). Findings were similar for TBI, including better neurologic outcomes (6M-GoSe ≤4 in TBI cohort OR 0.85 (0.96, 0.75; P = 0.011) but not for the shock cohort.

<table>
<thead>
<tr>
<th>Per 1,000 Increase</th>
<th>24-Hour Mortality OR (95% C.I.)</th>
<th>28-Day Mortality VFD Coefficient OR (95% C.I.)</th>
<th>Worst MODS Coefficient (95% C.I.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>0.87 (.77, .99) P = 0.03</td>
<td>0.62 (.30, .93) P = 0.004</td>
<td>–0.32 (−.57, -.07) P = 0.014</td>
</tr>
<tr>
<td>Shock cohort</td>
<td>0.96 (.85, 1.09) P = 0.310</td>
<td>–0.05 (−.43, .32) P = 0.77</td>
<td>0.1 (−18, .38) P = 0.46</td>
</tr>
<tr>
<td>TBI-only cohort</td>
<td>0.84 (.75, .93) P = 0.013</td>
<td>1.00 (.57, 1.42) P = 0.001</td>
<td>–0.55 (−.87, −.23) P = 0.002</td>
</tr>
</tbody>
</table>

CONCLUSIONS: Increased volume of trauma admissions is associated with improved trauma center survival and decreased post injury morbidity. Trauma system planning and implementation should avoid unnecessary duplication of services.

6 Disease Severity Not Operative Approach Drives Organ Space Infection Following Pediatric Appendectomy
1University of Rochester Medical Center, Surgical Health Outcomes and Research Enterprise, Rochester, NY; 2University of Rochester Medical Center, Department of Pediatric Surgery, Rochester, NY

OBJECTIVE(S): Although controversy exists regarding the risk of increased postoperative intra-abdominal infections following laparoscopic appendectomy, this approach has been largely adopted in the treatment of pediatric acute appendicitis. This study examines patient and operative factors associated with organ space infection (OSI) in children following appendectomy.

METHODS: Children ages 2–18 years undergoing open or laparoscopic appendectomy for acute appendicitis were selected from the 2012 ACS Pediatric NSQIP database. Univariate analysis compared patient and operative characteristics with 30-day OSI rates. Factors with a p < 0.1 and clinical importance were included in the multivariable logistic regression. A p-value <0.05 was considered significant.

RESULTS: For 5,097 children undergoing appendectomy, 4,481 (87.9%) cases were performed laparoscopically. OSI occurred in 155 (3%) children with half of these infections developing post-discharge. Significant predictors for OSI included complicated appendicitis, wound class III/IV, preoperative sepsis, and longer operative time (see table). Although 5.2% of patients undergoing open surgery developed OSI (OR = 1.94; CI: 1.30,1.89, p = 0.001), after adjustment for other risk factors operative approach was not associated with increased relative odds of OSI (OR = 0.99; CI: 0.64,1.53, p = 0.948). Overall, the model had excellent predictive ability (c-statistic = 0.836).

*By invitation
Multivariate Analysis of Factors Associated with Organ Space Infection

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted OR</th>
<th>95% CI</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complicated appendicitis (peritonitis or perforation/abscess during operation)</td>
<td>5.39</td>
<td>3.42, 8.50</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Wound class III/IV (vs. I/II)</td>
<td>4.35</td>
<td>1.97, 9.62</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Preoperative sepsis/septic shock</td>
<td>2.52</td>
<td>1.73, 3.65</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Operative time (per 10-minute increase)</td>
<td>1.06</td>
<td>1.04, 1.10</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Age (per one year increase)</td>
<td>1.05</td>
<td>1.00, 1.09</td>
<td>0.047</td>
</tr>
<tr>
<td>Open surgery*</td>
<td>0.99</td>
<td>0.64, 1.53</td>
<td>0.948</td>
</tr>
</tbody>
</table>

Model also controlled for sex, pulmonary comorbidity, obesity, and emergency operations.

* Patients were classified by the intent to treat; cases that were converted from laparoscopic to open were considered in the laparoscopic group.

CONCLUSIONS: This model demonstrates that disease severity, not operative approach as previously suggested, drives OSI development in children. Although 88% of appendectomies in this population were performed laparoscopically, these findings support utilization of the surgeon’s preferred surgical technique and may help guide postoperative counsel in high-risk children.

Primary Hyperparathyroidism with Negative Imaging: A Significant Clinical Problem


Hospital of the University of Pennsylvania, Philadelphia, PA

OBJECTIVES: Preoperative imaging plays an increasingly important role in the evaluation of primary hyperparathyroidism (PHPT), and surgical referral may be predicated upon successful imaging. We sought to compare the outcomes for patients undergoing parathyroidectomy for PHPT by imaging results.

METHODS: We performed a retrospective study of patients undergoing initial parathyroidectomy for PHPT using a prospectively maintained database (1997–2012). Patients were classified as nonlocalized (NL) when preoperative imaging failed to identify affected gland(s) and localized (L) if successful. Primary outcome was biochemical cure. Cohort comparison was performed. Propensity score was developed to match NL to L (1:1). Conditional logistic regression determined factors associated with cure in the matched cohort.

RESULTS: Of 1,999 patients analyzed, 40% (n = 798) were NL. Compared to L, NL had smaller glands (269 vs. 542 mg, p < 0.001), lower rates of single adenoma (77.3 vs. 86.3%, p < 0.001) and higher proportions of hyperplasia (12.0 vs. 5.4%, p < 0.001). The cure rates were clinically similar between the NL and L groups (97.6 vs. 99.0%, p = 0.014). Eighty-two percent of NL patients (n = 657) were successfully matched to L controls. In the matched cohort, localization remained significantly associated with cure (OR = 2.5, 95% CI = 1.0–6.0), but the attributable risk to NL was just 1.5% (95% CI = 0.7–2.8%). On multivariate subgroup analysis of NL, the presence of single adenoma was predictive of cure.

CONCLUSIONS: Smaller parathyroids and a higher incidence of multiglandular disease are associated with NL. However, NL minimally impacts the rate of surgical cure. Referral for surgical evaluation should be based on biochemical diagnosis rather than localization by imaging.

*By invitation
Trainee Participation Affects Outcomes in Emergency General Surgery Procedures: An Analysis of the NSQIP Database

Boston University, Boston, MA

**OBJECTIVE:** Previous research has demonstrated a significant impact of trainee participation on outcomes in a broad surgical patient population. We aim to identify if a similar effect exists in emergency general surgery.

**METHODS:** We identified 141,010 patients who underwent emergency general surgery procedures in the 2005–2010 NSQIP database. Due to the nonrandom assignment of complex cases to resident participation, patients were matched (1:1) on known risk factors (age, gender, inpatient status, preexisting comorbidities [obesity, diabetes, smoking, alcohol, steroid use, coronary artery disease, chronic renal failure, pulmonary disease]) and preoperatively calculated probability for morbidity and mortality. Clinically relevant outcomes were compared with a t- or chi-squared test. The impact of resident participation on outcomes was assessed with multivariable regression modeling, adjusting for risk factors and operative time.

**RESULTS:** The most common procedures in the matched cohort (n = 83,790) were appendectomy (39.9%), exploratory laparotomy (8.8%) and adhesiolysis (6.6%). Outcomes of the two groups are summarized in Table 1. Resident participation was an independent predictor for adverse outcomes (Table 2).

**CONCLUSIONS:** Trainee participation is associated with adverse outcomes in emergency general surgery procedures. Remediation strategies could include increased use of simulation in training, and increased faculty supervision of residents.

---

**Table 1**

<table>
<thead>
<tr>
<th>Matched Cohort (n = 83,790)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO RES</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Mortality</strong></td>
</tr>
<tr>
<td>Overall morbidity</td>
</tr>
<tr>
<td>Length of stay</td>
</tr>
</tbody>
</table>

**Wound complications**

<table>
<thead>
<tr>
<th></th>
<th>NO RES</th>
<th>RES</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superficial wound infection</td>
<td>2.78</td>
<td>3.50</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Deep wound infection</td>
<td>0.89</td>
<td>0.73</td>
<td>0.011</td>
</tr>
<tr>
<td>Organ space infection</td>
<td>1.77</td>
<td>2.27</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Wound dehiscence</td>
<td>0.69</td>
<td>0.63</td>
<td>0.266</td>
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</table>

**Operative technique**

<table>
<thead>
<tr>
<th></th>
<th>NO RES</th>
<th>RES</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time</td>
<td>59.17 ± 44.78</td>
<td>75.10 ± 54.77</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Anesthesia time</td>
<td>99.92 ± 55.45</td>
<td>122.42 ± 66.22</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intraoperative transfusions</td>
<td>2.55</td>
<td>3.43</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Postoperative bleeding requiring transfusion</td>
<td>1.28</td>
<td>1.12</td>
<td>0.031</td>
</tr>
<tr>
<td>Unplanned return to the OR</td>
<td>3.80</td>
<td>4.22</td>
<td>0.002</td>
</tr>
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</table>

**Pulmonary complications**

<table>
<thead>
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<th>RES</th>
<th>p-Value</th>
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<tbody>
<tr>
<td>Postoperative pneumonia</td>
<td>1.67</td>
<td>1.85</td>
<td>0.043</td>
</tr>
<tr>
<td>Unplanned reintubation</td>
<td>1.15</td>
<td>1.64</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Failure to wean from ventilation</td>
<td>2.06</td>
<td>2.87</td>
<td>&lt;0.001</td>
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</table>

**Cardiovascular complications**

<table>
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<th>RES</th>
<th>p-Value</th>
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</thead>
<tbody>
<tr>
<td>Myocardial infarction</td>
<td>0.26</td>
<td>0.27</td>
<td>0.637</td>
</tr>
<tr>
<td>Cardiopulmonary arrest</td>
<td>0.32</td>
<td>0.39</td>
<td>0.071</td>
</tr>
<tr>
<td>Cerebrovascular accident</td>
<td>0.13</td>
<td>0.16</td>
<td>0.205</td>
</tr>
<tr>
<td>Deep venous thrombosis</td>
<td>0.62</td>
<td>0.80</td>
<td>0.002</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>0.28</td>
<td>0.43</td>
<td>&lt;0.001</td>
</tr>
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</table>

**Renal complications**

<table>
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<th>RES</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute renal failure</td>
<td>0.31</td>
<td>0.34</td>
<td>0.427</td>
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<tr>
<td>Renal failure requiring dialysis</td>
<td>0.43</td>
<td>0.37</td>
<td>0.209</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>1.14</td>
<td>1.45</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

**Life-threatening infectious complications**

<table>
<thead>
<tr>
<th></th>
<th>NO RES</th>
<th>RES</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis</td>
<td>2.13</td>
<td>2.42</td>
<td>0.005</td>
</tr>
<tr>
<td>Septic shock</td>
<td>1.41</td>
<td>1.51</td>
<td>0.205</td>
</tr>
</tbody>
</table>
Table 2

Effect of Resident Participation on Outcomes (Controlling for Risk Factors and Operative Time)

<table>
<thead>
<tr>
<th></th>
<th>Beta Coefficient/ Odds Ratio (95% CI)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay</td>
<td>0.43 (0.30–0.56)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Superficial wound infection</td>
<td>1.23 (1.13–1.34)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Organ space infection</td>
<td>1.21 (1.09–1.34)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intraoperative transfusion</td>
<td>1.20 (1.07–1.34)</td>
<td>0.001</td>
</tr>
<tr>
<td>Postoperative bleeding requiring transfusion</td>
<td>0.78 (0.69–0.90)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Unplanned return to the OR</td>
<td>1.08 (1.00–1.16)</td>
<td>0.041</td>
</tr>
<tr>
<td>Postoperative pneumonia</td>
<td>1.06 (0.94–1.18)</td>
<td>0.348</td>
</tr>
<tr>
<td>Unplanned reintubation</td>
<td>1.38 (1.21–1.57)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Failure to wean from ventilation</td>
<td>1.43 (1.29–1.59)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Deep venous thrombosis</td>
<td>1.25 (1.05–1.49)</td>
<td>0.011</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>1.42 (1.11–1.81)</td>
<td>0.005</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>1.23 (1.08–1.40)</td>
<td>0.001</td>
</tr>
<tr>
<td>Sepsis</td>
<td>1.07 (0.97–1.18)</td>
<td>0.155</td>
</tr>
</tbody>
</table>

9 Value of Intraoperative Neck Margin Analysis During Whipple for Pancreatic Adenocarcinoma: A Multicenter Analysis of 1399 Patients

David A. Kooby*1, Neha L. Lad*1, Malcolm H. Squiers, III*1, Shishir K. Maithel*1, Sharon M. Weber2, Emily R. Winslow*2, David J. Bentrem*1, Syed A. Ahmad*1, Daniel E. Abbott*1, Hong Jin Kim*1, Charles R. Scoggins*1, Robert C. Martin*1, Alexander A. Parikh*1, Yassar M. Hashim*1, Nipun B. Merchant1

1 Division of Surgical Oncology, Winship Cancer Institute, Emory University, Atlanta, GA; 2Department of Surgery, University of Wisconsin School of Medicine and Public Health, Madison, WI; 3Department of Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL; 4Department of Surgery, University of Cincinnati College of Medicine, Cincinnati, OH; 5Department of Surgery, University of North Carolina School of Medicine, Chapel Hill, NC; 6Division of Surgical Oncology, Department of Surgery, University of Louisville School of Medicine, Louisville, KY; 7Department of Surgery, Vanderbilt University School of Medicine, Nashville, TN; 8Department of Surgery, Washington University School of Medicine, St. Louis, MO

OBJECTIVE(S): During pancreaticoduodenectomy (PD) for ductal adenocarcinoma (PDAC) a frozen section (FS) neck margin is typically assessed, and if positive, additional pancreas is removed to achieve an R0 margin. We analyzed the overall survival (OS) benefit of this practice.

METHODS: Patients who underwent PD for PDAC from January, 2000 to August, 2012 at eight academic centers were classified by neck margin status as negative (R0) or positive (R1) based on FS and permanent section (PS). Impact on OS of converting a FS-R1 neck margin to a PS-R0 by additional resection was assessed.

RESULTS: 1,399 patients had FS neck margins analyzed. Median OS was 19.7 months. On FS, 152 patients (10.9%) were R1, and 48 patients (3.8%) had false-negative FS-R0 margins. PS-R0 was achieved in 1,201 patients (85.9%), 121 patients (8.6%) remained PS-R1, and 77 patients (5.5%) were converted from FS-R1 to PS-R0. Median OS for PS-R0 patients was 21.1 months versus 13.6 months for PS-R1 patients (p < 0.001) and 13.0 months for FS-R1 to PS-R0 patients (p < 0.001 [see figure]). Both FS-R1 to PS-R0 and PS-R1 patients had larger tumors (p = 0.001), more perineural invasion (p = 0.02), and more node positivity (p = 0.04) than

*By invitation
PS-R0 patients. On multivariate analysis controlling for adverse pathologic factors, FS-R1-to-PS-R0 conversion lacked association with improved OS (HR 0.97; p = 0.90).

CONCLUSIONS: For patients who undergo pancreaticoduodenectomy for PDAC, additional resection to achieve a negative neck margin after positive frozen section fails to improve OS, questioning the utility of this practice.

Does Hospital Accreditation Matter for Bariatric Surgery?
John M. Morton*, Trit Garg*, Ninh Nguyen
1Stanford University, Stanford, CA; 2University of California, Irvine, Irvine, CA

OBJECTIVE(S): To evaluate the impact of hospital accreditation on bariatric surgery outcomes.

METHODS: Morbidly obese patients undergoing LRYGB, LAGB, or LSG from the 2010 Nationwide Inpatient Sample (NIS) database were analyzed. Hospital names and American Hospital Association (AHA) codes were used to identify accredited bariatric centers. Data analysis included length of stay (LOS), total hospital charges, complications, mortality, and failure to rescue (FTR). Additional patient demographics, including age, race, sex, and insurance were analyzed.

RESULTS: There were 117,478 bariatric patient discharges corresponding to 235 unique hospitals in the 2010 NIS dataset. A total of 72,615 (61.8%) discharges, corresponding to 145 (61.7%) named or AHA identifiable hospitals were included in the analysis. Compared to accredited centers, unaccredited centers had a significantly higher mean LOS (2.25 days vs. 1.99 days, p < 0.0001), as well as total charges ($51,189 vs. $42,212, p < 0.0001). Incidence of any complication was higher at unaccredited centers than accredited (12.3% vs. 11.3%, p = 0.001), as was mortality (0.13% vs. 0.07%, p = 0.019), and FTR (0.97% vs. 0.55%, p = 0.046). Multivariable logistic regression analysis controlling for hospital teaching status, high volume hospital status, patient age, sex, race, insurance, and Charlson co-morbidity score identified unaccredited status as a positive predictor of incidence of complication (OR = 1.08, p < 0.0001), as well as mortality (OR = 2.13, p = 0.013).

CONCLUSIONS: Hospital accreditation status is associated with safer outcomes, shorter LOS, and lower total charges after bariatric surgery.

*By invitation
Repair of Extensive Aortic Aneurysm: A Single-Center Experience with the Elephant Trunk Technique Over Two Decades


University of Texas Health Science Center at Houston, Houston, TX

OBJECTIVES: Management of aneurysm involving the entire aorta is a significant challenge. Given the anatomical complexity, a single-stage surgical procedure is associated with high morbidity. We report our experience with two-stage repair using the elephant trunk technique.

METHODS: Between 1991 and 2013, we repaired 3,012 aneurysms of the ascending or thoracoabdominal aorta. Of these, we performed 474 operations in 352 patients using the traditional (or in 61 cases, distal segment first) elephant trunk technique. Mean age was 62.5 ± 13.9, and 218/474 (45.9%) operations were in women. 291 patients underwent ascending/arch repair first, with 122 receiving a completion second stage repair.

RESULTS: Stage 1 mortality was 25/352 (7.1%). Stage 2 mortality was 15/122 = 12.3%. Of the 327 patients surviving the initial stage, 7/327 (2.1%) died within the 30 to 45–day optimal repair interval, suggesting that 6-week wait is safe. Mortality was associated with glomerular filtration rate (GFR), with 4.6% mortality in patients with GFR above 75. Stroke after ascending/arch repair was 10/294 (3.4%) and neurologic deficit was 1/181 (0.5%). In the 230 patients who did not receive second stage repair after 6 weeks, 26 (11.3%) died.

CONCLUSION: Extensive aortic aneurysm is a complex problem, but should be managed with good results with a two stage open procedure. The symptomatic segment can be approached first. In asymptomatic cases we approach the ascending/arch portion first due to the shorter recovery time. The use of elephant trunk technique remains a valuable approach for repair of extensive aortic aneurysm.

*By invitation

Extrapleural Pneumonectomy in the Treatment of Epithelial Malignant Pleural Mesothelioma: Experience in 529 Patients

David Sugarbaker, William Richards*, Raphael Bueno

Brigham and Women’s Hospital, Boston, MA

OBJECTIVE(S): We reviewed our experience over a 24-year period with extrapleural pneumonectomy (EPP) in the treatment of epithelial malignant pleural mesothelioma (MPM).


RESULTS: From 1988 to 2011, 529 patients with epithelial MPM underwent complete resection by EPP as part of a multimodality strategy. Among these, 131 (25%) were women, and the median age was 59 (range: 17–79) years. Median postoperative hospital stay was 10 (1–101) days. Twenty-nine patients (5.4%) experienced 30-day or in-hospital mortality. Median overall survival was 18 months, with 1, 3, 5 and 10-year survival rates of 67%, 28%, 14% and 4%, respectively. Outcome by pathologic lymph node status (N, median OS) was N0: 224, 26 months; N1: 118, 17 months; N2: 181, 13 months; N3: 5, 7 months; Nx: 1, N/A.

CONCLUSIONS: 1) EPP has evolved as an effective method of achieving macroscopic complete resection; 2) These data further establish node status as a significant predictor of OS in epithelial MPM; 3) The routine use of mediastinoscopy and/or EBUS will allow for more effective selection of patients who will benefit from cytoreduction by EPP; and 4) Future studies should focus on further refining preoperative patient selection and enhancing local control.

*By invitation
Laser Resurfacing and Remodeling of Hypertrophic Burn Scars: The Results of a Large, Prospective, Before-After Cohort Study, with Long-Term Follow-Up

Charles S. Hultman, Jon S. Friedstat*, Renee E. Edkins*, Bruce A. Cairns, Anthony A. Meyer
University of North Carolina, Chapel Hill, NC

OBJECTIVES: Hypertrophic burn scars produce significant morbidity (itching, pain, stiffness, contracture), but best practices for management remain unclear, with unknown long-term benefit. We present the largest study to date that examines long-term impact of laser therapies, a potentially transformative technology, on hypertrophic burn scars.

METHODS: We conducted a prospective, before-after cohort study in burn patients with hypertrophic scars. Pulsed-dye laser was used for pruritis, erythema; fractional CO₂ laser was used for stiffness, abnormal texture. Outcomes included: 1) Vancouver Scar Scale (VSS), which documents pigmentation, erythema, pliability, height; 2) 4P Scar Scale (4PSS), which rates pain, pruritis, paresthesias, pliability.

RESULTS: 147 burn patients (mean age, 26.9 years; TBSA, 16.1%) received 415 laser sessions (2.8 sessions/patient), 16 months (median) after injury, including PDL (n = 327) and CO₂ (n = 139), over a mean area of 83 cm². Laser treatments produced rapid, significant, lasting improvements in hypertrophic scar (Table/Figure).

Impact of Laser Treatment on Hypertrophic Burn Scars

<table>
<thead>
<tr>
<th>SCALE</th>
<th>Preop Baseline</th>
<th>1 Session</th>
<th>All Sessions (2-Year F/U)</th>
<th>Final Result</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSS, range 0–15</td>
<td>10.43, sd 2.37</td>
<td>6.67, sd 2.11</td>
<td>5.16, sd 1.92</td>
<td>3.29, sd 1.24</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>4PSS, range 0–12</td>
<td>5.40, sd 2.54</td>
<td>2.89, sd 1.91</td>
<td>2.05, sd 1.74</td>
<td>1.74, sd 1.72</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

CONCLUSIONS: For the first time ever, in a large prospective study, laser therapies have been shown to dramatically improve both the signs and symptoms of hypertrophic burn scars, as measured by objective/subjective instruments. Laser treatment of burn scars represents a disruptive innovation that can yield results not previously possible and may displace traditional methods of operative intervention.

*By invitation
FRIDAY MORNING, APRIL 11th

7:00 AM – 8:00 AM
Grand Ballroom B-C
ASA WOMEN IN SURGERY BREAKFAST

8:00 AM – 10:30 AM
Grand Ballroom E-F

SCIENTIFIC SESSION III
Moderator: Layton F. Rikkers, M.D.

14
Indications for Elective Colon Resection After Diverticulitis:
A Report from the SCOAP Collaborative
Alessandro Fichera*, Daniel O. Herzig*, Eric Johnson*, Scott R. Steele*,
Richard C. Thirlby*, David R. Flum*
1University of Washington, Seattle, WA; 2Swedish Medical Center, Seattle, WA; 3Surgical Care and Outcomes Assessment Program (SCOAP), Seattle, WA; 4Oregon Health & Science University, Portland, OR; 5Madigan Army Medical Center, Tacoma, WA; 6Virginia Mason Medical Center, Seattle, WA

OBJECTIVE(S): After successful, non-operative initial management of diverticulitis, patients and clinicians must balance the risk of another event and potential emergency colostomy against the risks of elective resection. Delaying resection until after multiple episodes or clinical complications is recommended. To improve adherence to this recommendation, Washington State’s Surgical Care and Outcomes Assessment Program (SCOAP) began surveillance, benchmarking, and education related to the indications for colon resection.

METHODS: Prospective cohort study evaluating clinical indications (fistula, stricture, bleeding) or number of previously treated diverticulitis episodes for elective colectomy from 49 hospitals (2010–2012).

RESULTS: Among 2,032 patients (58.8 ±12 years, 46% male) having elective resection for diverticulitis, the proportion with a clinical indication was 23.3% (10.5% fistula, 5.4% stricture, 2.4% bleeding, 4.9% other). For those with an episode-based indication, 50.7% had 2 or fewer episodes, 45.9% had 3–10 episodes, and 3.4% had >10 episodes. The proportion with 3+ episodes increased from 41.8% to 58.0% (p = .007), while those that failed to meet either clinical or episode-based indications decreased from 41.3% to 29.6%, (p = 0.02). Data was incomplete or missing in 30.4%. At hospitals performing 10 or more colectomies yearly, the rate of emergency resections per year did not increase significantly (p = .31).

CONCLUSIONS: The proportion of elective resections for diverticulitis not meeting indications decreased by 28.4% while resection for 3+ episodes increased by 38.5%. A learning health care system based on surveillance, benchmarking and peer-to-peer messaging about current clinician-generated standards shows promise in adherence to professional guidelines related to appropriate care.

*By invitation
15
Preoperative Methylprednisolone Enhances Recovery After Endovascular Aortic Repair
Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark

OBJECTIVE: The post-implantation inflammatory syndrome following endovascular aortic repair (EVAR) may hinder early recovery. Therefore, we evaluated the effect of a preoperative high-dose glucocorticoid on the inflammatory response and recovery after EVAR.

METHODS: A single-center, randomized, double-blinded, placebo-controlled trial of 153 patients undergoing EVAR for abdominal aortic aneurysm between November, 2009 and January, 2013. Patients received a single preoperative dose of 30 mg/kg methylprednisolone (n = 77) or placebo (n = 76). A modified version of the systemic inflammatory response syndrome (SIRS) was assessed during the first 4 postoperative days. Secondary outcome measures were plasma interleukin-6 levels and time to fulfillment of discharge criteria.

RESULTS: Of the 153 patients randomized, 150 (98%) could be evaluated for the primary outcome. Methylprednisolone led to a reduction in the modified SIRS from 92% to 27% (p < 0.0001) (NNT = 1.5), a reduction in maximal plasma IL-6 from 186 pg/ml (IQR 113;261 pg/ml) to 20 pg/ml (IQR 11;28 pg/ml) (p < 0.001) as well as time to fulfillment of discharge criteria was shorter 2 days (IQR 2;4 days) vs. 3 days (IQR 3;4 days) (p < 0.001). No differences in 30-day medical 23% vs. 36% (p = 0.1) or surgical 20% versus 21% morbidity were found in the active versus placebo treatment group.

CONCLUSION: Preoperative methylprednisolone attenuates the postoperative inflammatory response resulting in a faster recovery after EVAR for abdominal aortic aneurysms. Further safety studies are called for to allow recommendations for general practice.

Trial registration: clinicaltrials.gov Identifier: NCT00989729.

*By invitation

16
Market Competition Influences Renal Transplantation Risk and Outcomes
Joel T. Adler*, Rosh K.V. Sethi*, Heidi Yeh*, James F. Markmann1, Louis L. Nguyen*
1Massachusetts General Hospital, Boston, MA; 2Harvard Medical School, Boston, MA; 3Brigham and Women’s Hospital, Boston, MA

OBJECTIVE: Market competition is generally considered beneficial. Kidney transplantation (KT) occurs within 58 donation service areas (DSA) with varying number of centers and levels of competition. We sought to evaluate the impact of market competition on mortality and graft failure after KT.

METHODS: The Scientific Registry of Transplant Recipients was queried. The Herfindahl-Hirschman index (HHI), a widely used market competition measure, was calculated for each DSA from 2003 to 2012. Transplantation of lower quality/higher risk kidneys (Kidney Donor Profile Index ≥85) was modeled with multivariable logistic regression, and Cox proportional hazards models were created for graft failure and patient mortality.

RESULTS: 127,355 adult renal transplants were performed. There were 7 no (HHI 1), 17 low (HHI 0.52–0.97), 17 medium (HHI 0.33–0.51), and 17 high (HHI 0.09–0.32) competition DSAs (see figure). For deceased donor KT, increasing market competition was significantly associated with higher mortality (HR 1.11, P = 0.01), higher graft failure (HR 1.18, P = 0.0001), and greater use of riskier kidneys (OR 1.39, P < 0.0001). This was not true for living donor KT (mortality HR 0.94, P = 0.48; graft failure HR 0.99, P = 0.89). In a DSA, competition was associated with longer waitlists (P = 0.04) but not per capita kidney transplants (P = 0.21).

*By invitation
CONCLUSIONS: Increasing market competition is associated with increased patient mortality and graft failure concurrent with the use of riskier donor kidneys. Competition can be valuable in healthcare, but its effects must be better studied to ensure optimal outcomes.
Hospital Readmissions: Necessary Evil or Preventable Target for Quality Improvement
Erin G. Brown*, Debra Burgess*, Richard J. Bold
UC Davis, Sacramento, CA

OBJECTIVE(S): The decision to penalize hospitals for readmissions is compelling healthcare systems to develop processes to minimize readmissions. Research focused on identifying preventable readmissions is critical to achieve these goals.

METHODS: We performed a retrospective review of the University HealthSystem Consortium (UHC; 237 hospitals) database for all cancer patients hospitalized from January, 2010 to September, 2013. Main outcome measures were 7, 14, and 30-day readmission rates, and readmission diagnoses. Hospital and disease characteristics were evaluated to determine potential relationships with readmission.

RESULTS: 2,517,886 patients were hospitalized for cancer treatment. Readmission rates at 7, 14, and 30 days post-discharge were 2.4%, 4.0%, and 6.1%. Despite concern that premature hospital discharge may be associated with higher readmission rates, initial length of stay did not correlate with readmission rates (Figure 1a). Furthermore, high volume centers did not have a lower readmission rate (Figure 1b). Factors associated with higher readmission rates include: discharge from a surgical service, site of malignancy, emergency vs. elective primary admission. Evaluating institutional data (N = 1,639 patients) demonstrated the most common readmission diagnoses were infectious causes (53.4%), thromboembolic events (9.7%), nausea/vomiting/dehydration (7.4%), and pain (7.4%).

CONCLUSIONS: A significant number of patients, following hospitalization for cancer-related therapy, are re-admitted with potentially preventable conditions such as nausea, vomiting, dehydration and pain. While some post-discharge readmissions are unavoidable, reducing preventable readmissions will be critical in the face of reimbursement policy changes.
Is There a Relationship Between Patient Satisfaction and Favorable Surgical Outcomes?

Gregory Kennedy*, Sarah Tevis*, K. Craig Kent
University of Wisconsin, Madison, WI

OBJECTIVE(S): Patient satisfaction with the health care experience has become a top priority for Centers for Medicare and Medicaid Services. With resources and efforts directed at patient satisfaction, we wished to evaluate whether high patient satisfaction on HCAHPS surveys correlates with favorable outcomes.

METHODS: Medical centers were identified from the University Health System Consortium database from 2011 to 2012. Variables included hospital characteristics, process measure compliance and surgical outcomes. Chi squared analysis was used to evaluate for variables associated with high patient satisfaction, defined as hospitals that scored above the 50th percentile.

RESULTS: We identified 171 hospitals with complete data. The following variables were significantly associated with high overall patient satisfaction: larger hospitals, higher surgical volume and lower mortality (Table 1, p < 0.001). Overall, compliance with process measures and patient safety indicators, as well as length of stay, did not correlate with satisfaction. Numerically, complication (p = 0.491) and readmission rates (p = 0.056) were found to have an inverse relationship with patient satisfaction.

CONCLUSIONS: We found that hospital size and surgical volume were associated with high patient satisfaction. However, with the exception of low mortality, we were surprised to find that all other favorable outcomes were not associated with high HCAHPS scores. With existing satisfaction surveys, we conclude that factors outside of surgical outcomes appear to influence patients’ perception of care.

*By invitation
10:30 AM – 12:00 PM  
Grand Ballroom E-F

FORUM DISCUSSION

Quality: The Key to Surgery’s Future  
Moderator: Layton F. Rikkers, M.D.

“Measuring Quality”  
David B. Hoyt, M.D.  
Executive Director  
American College of Surgeons  
Chicago, IL

“Creating Quality Within Systems”  
David R. Flum, M.D.  
University of Washington Medical Center  
Seattle, WA

“Ensuring Quality at the Individual Level”  
Mark A. Malangoni, M.D.  
Associate Executive Director  
American Board of Surgery  
Philadelphia, PA

1:30 PM – 4:00 PM  
Grand Ballroom E-F

SCIENTIFIC SESSION IV

Moderator: Ronald J. Weigel, M.D.

20  
Extent of Surgery for Papillary Thyroid Cancer Is Not Associated with Survival: An Analysis of 69,136 Patients  
Mohamed Abdelgadir Adam*, Lin Gu*, John Pura*, Michaela A. Dinan*, Douglas Tyler, Shelby D. Reed*, Sanziana Roman*, Julie A. Sosa*  
Duke University School of Medicine, Durham, NC

OBJECTIVE: Guidelines recommend total thyroidectomy (TT) for papillary thyroid cancers (PTC) >1 cm based on older data demonstrating an overall survival (OS) advantage for TT over lobectomy (PT). We examine the association of extent of surgery with OS based on tumor size in a large contemporary cohort.

METHODS: Adult PTC patients with tumors ≥1 cm undergoing thyroidectomy in the ACS National Cancer Database from 1998 to 2006 were included. Cox proportional hazards models were applied to measure the impact of extent of surgery on OS in relation to tumor size while adjusting for patient factors, including comorbidities, extrathyroidal extension, multifocality, nodal status, and radioiodine treatment.

RESULTS: Among 69,136 PTC patients, 7,674 underwent PT and 61,462 TT; 53% had tumors 1–2 cm and 36% were 2.1–4 cm. Compared to PT, TT patients were younger (mean 45 TT vs. 46 years PT), and had more nodal (28% vs. 7%), extrathyroidal (17% vs. 6%), and multifocal disease (44% vs. 28%), all p < 0.0001. Patient age, male gender, black race, tumor size >2 cm, lower income, and presence of nodal or distant metastases were associated with higher mortality rates (p < 0.0001). After multivariable

*By invitation
adjustment, OS was similar for PT versus TT in all patients with tumors ≥1 cm (HR 0.99; 0.89–1.10; p = 0.85); 1–2 cm (HR 0.98; 0.83–1.16; p = 0.83), and 2.1–4 cm (HR 1.07; 0.90–1.27; p = 0.47).

**CONCLUSIONS:** Despite guidelines advocating TT for PTC tumors >1 cm, our analysis revealed no survival advantage associated with total thyroidectomy compared to lobectomy. These findings call into question whether tumor size should be an absolute indication for total thyroidectomy, given its potentially increased morbidity.

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**OBJECTIVES:** Pathological complete response (pCR) to neoadjuvant chemotherapy (NAC) correlates with improved outcomes. We sought to evaluate pCR rates and breast conservation rates after NAC according to tumor subtype.

**METHODS:** ACOSOG Z1071 was a prospective, multicenter study assessing sentinel node surgery after NAC in patients presenting with node-positive breast cancer from 2009 to 2011. We evaluated surgical procedure and pathologic response after NAC in relation to approximated tumor subtype based on estrogen and progesterone receptor and HER2 status.

**RESULTS:** Of 701 eligible patients, surgical pathology was available in 694. Tumor subtype was triple negative (TN) in 170 (24%), HER2-positive in 207 (30%) and hormone receptor-positive, HER2-negative in 317 (46%). Patient age, clinical tumor and nodal stage at presentation did not differ across subtypes. pCR rates in both the breast and axilla were 38% in TN, 45% in HER2-positive and 11% in hormone receptor-positive, HER2-negative disease (p < 0.00001). Similarly, axillary pCR rates and breast pCR varied across subtypes, being highest in HER2-positive and TN subtypes (see table). Breast conserving surgery rates were significantly higher in TN and HER2-positive patients (p = 0.024).

*By invitation*
patients (%)

<table>
<thead>
<tr>
<th>Patient age</th>
<th>&lt;50</th>
<th>50–59</th>
<th>61–69</th>
<th>70+</th>
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<td>118</td>
<td>23</td>
</tr>
<tr>
<td>patients</td>
<td>(50.1%)</td>
<td>(29.5%)</td>
<td>(17.0%)</td>
<td>(3.3%)</td>
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</tbody>
</table>

**Patient age**

- **<50:** 348 (50.1%)
- **50–59:** 205 (29.5%)
- **61–69:** 118 (17.0%)
- **70+:** 23 (3.3%)

**Number of patients**

- **<50:** 348 (50.1%)
- **50–59:** 205 (29.5%)
- **61–69:** 118 (17.0%)
- **70+:** 23 (3.3%)

**T stage at presentation**

- **T0:** 7 (1.0%)
- **Tis:** 1 (0.1%)
- **T1:** 89 (12.8%)
- **T2:** 384 (55.3%)
- **T3:** 181 (26.1%)
- **T4:** 32 (4.6%)

**Nodal stage at presentation**

- **N1:** 658 (94.8%)
- **N2:** 36 (5.2%)

**Surgery**

- **Breast Conserving Surgery:** 278 (40.2%)
- **Breast Mastectomy:** 414 (59.8%)

**pCR (breast and axilla)**

- **pCR in breast:** 233 (33.6%)
- **pCR in axilla:** 283 (40.8%)

**CONCLUSIONS:** Patients with triple negative or HER2-positive breast cancer have the highest pCR rates in the breast and the axilla and highest rates of breast conservation. Patients with these subtypes are most likely to be candidates for less invasive surgical approaches following NAC.
Failure of Evidence-Based Cancer Care in the US – Rectal Cancer Treatment, Geography and Hospital Type

John R.T. Monson¹, Christian P. Probst*¹, Steven D. Wexner², Feza H. Remzi*³, James Fleshman⁴, Julio Garcia-Aguilar⁵, George J. Chang*⁶, David W. Dietz, On behalf of The OSTRiCh Consortium*¹

¹University of Rochester Medical Center, Rochester, NY; ²Cleveland Clinic, Weston, FL; ³Cleveland Clinic, Cleveland, OH; ⁴Baylor University Medical Center, Houston, TX; ⁵Memorial Sloan-Kettering Cancer Center, New York, NY; ⁶University of Texas MD Anderson Cancer Center, Houston, TX

OBJECTIVE(S): A recent report by the Institute of Medicine described US cancer care as chaotic. Cited deficiencies included wide variation in adherence to evidence-based guidelines, even where clear consensus exists with formally published guidelines. This study examines adherence to recommended neoadjuvant chemoradiation for patients with rectal cancer across geographic regions, institution types and over time.

METHODS: Patients who underwent operation for clinical stage 2 and 3 rectal cancer were selected from the 2006 to 2011 National Cancer Data Base (NCDB) (n = 32,171), 4–9 years after guideline release. Multivariable logistic regressions were used to assess variation in chemoradiation use by center type and geographical location, controlling for differences in patient age, sex, race, primary payor, comorbidity, and year of diagnosis.

RESULTS: Use of neoadjuvant chemoradiation varied significantly between center types. The highest rates were observed in academic centers (radiation 79%, chemotherapy 78%) and the lowest rates were provided in community programs (radiation 71% and chemotherapy 70%, p < 0.001). This variation is mirrored by geographic location. Primary payor and year of diagnosis were not predictive of rates of treatment.

CONCLUSIONS: Adherence to evidence-based treatment guidelines in rectal cancer is suboptimal in the US, with differences across facility types and geographic regions. Little improvement has occurred in the last five years. These results support the implementation of standardized care pathways and a Centers of Excellence program for US rectal cancer patients.
Total Laparoscopic Pancreaticoduodenectomy for Pancreatic Ductal Adenocarcinoma: Oncologic Advantages Over Open Approaches?
Kristopher P. Croome*, Michael Farnell, Florencia G. Que*, Kaye Reid-Lombardo*, Mark Truty*, David Nagorney, Michael L. Kendrick*
Mayo Clinic, Rochester, MN

OBJECTIVE(S): Advantages of total laparoscopic pancreaticoduodenectomy (TLPD) include less blood loss and shorter hospital stay compared to open pancreaticoduodenectomy (OPD). Published oncologic outcomes of TLPD are limited by sample size and grouping of various cancer types. Our aim was to evaluate the oncologic outcomes of TLPD and OPD in patients with pancreatic ductal adenocarcinoma (PDAC).

METHODS: Single institution, retrospective review of all patients undergoing TLPD (n = 108) and OPD (n = 214) for PDAC from July, 2007 to July, 2013.

RESULTS: Neoadjuvant therapy, tumor size, node positivity and margin positive resection were not different between the two groups. Median hospital stay was greater in the OPD group (9 vs. 6 days, p < 0.001). A greater proportion of patients in the OPD group had a delay of greater than 8 weeks from surgery to adjuvant chemotherapy, 41% and 27%, respectively (p = 0.01). The proportion of patients with a delay of more than 90 days or did not receive adjuvant treatment was also greater in the OPD (12%) compared to the TLPD (5%) group (p = 0.04). Median follow-up was 1.5 years. Overall survival was not different between the two groups (p = 0.22), however, progression free survival was greater in the TLPD group (p = 0.03).

CONCLUSIONS: TLPD not only provides the typical benefits of MIS approaches, but in patients with PDAC it may also prevent delayed initiation or cancellation of adjuvant therapy. In comparable patients, this study also demonstrated improved progression free survival for patients undergoing TLPD.
Early Use of Low Residue Diet Is Superior to Clear Liquid Diet After Elective Colorectal Surgery

Cheryl C.L. Lau*, Edward Phillips, Catherine Bresee*, Philip R. Fleshner*
Cedars Sinai Medical Center, Los Angeles, California, CA

BACKGROUND: Diet advancement after surgery traditionally starts gradually with liquids, based on a fear that early solid intake may increase nausea, vomiting, overall complications and hospital stay (LOS). A randomized controlled trial comparing LRD and CLD on postoperative day (POD) 1 was performed.

METHODS: From December, 2012 to May, 2013, 111 elective colorectal surgery patients were randomized to CLD (n = 57) or LRD (n = 54). Primary end points were nausea (Likert scale score) and vomiting on POD 2. Secondary endpoints included days to flatus (DTF), postoperative morbidity and length of hospital stay (LOS).

RESULTS: Patient characteristics, operative time, postoperative opioid and anti-emetic use were similar between study arms. CLD versus LRD results were: vomiting (28% vs. 14%; p = 0.09), and significant decrease in mean nausea score (4.70 vs. 3.52; p = 0.01), DTF (4.8 vs. 3.7; p = 0.04), and LOS (7.0 vs. 5.0 days; p = 0.01). LOS remained significantly shorter even after adjusting for significant covariates (laparoscopic technique, surgical site, postop comorbidity, stoma, and nasogastric tube) with LRD patients having an adjusted 1.3 day decrease in LOS (p < 0.01). There was no significant difference in morbidity between study arms. Multivariate analysis of all secondary endpoints confirmed an overall significant improvement in outcomes for LRD versus CLD (p < 0.01).

CONCLUSION: LRD, rather than CLD, on POD1 after colorectal surgery is associated with less nausea and vomiting, faster return of bowel function and a shorter hospital stay without increasing postoperative morbidity.

*By invitation
FRIDAY EVENING, APRIL 11th

7:00 PM – 8:00 PM
Grand Ballroom Foyer

ANNUAL RECEPTION

8:00 PM – 10:00 PM
Grand Ballroom G-K

ANNUAL BANQUET

SATURDAY MORNING, APRIL 12th

8:00 AM – 11:00 AM
Grand Ballroom E-F

SCIENTIFIC SESSION V

Moderator: New President-Elect

26
Differences in Surgical Outcomes Between Hepatitis B (HBV) and Hepatitis C (HCV) Related Hepatocellular Carcinoma (HCC)


Icahn School of Medicine at Mount Sinai, New York, NY

OBJECTIVE(S): Compare HBV versus HCV-HCC surgical outcomes.

METHODS: Between 1997 and 2011, 1,008 patients with HBV (n = 431) or HCV (n = 577) underwent resection (n = 567) or transplantation (n = 441). Resection was indicated for Child’s A patients without portal hypertension and with single HCC. Based on uniform application of these criteria, resection:transplant ratio was 3.6 for HBV and .67 for HCV.

RESULTS: Resection—HBV had larger tumors and higher AFP, but less satellites and macroVI; 68% of HBV versus 89% of HCV were cirrhotic. Survival was better (p < .001) and recurrence lower (p = .009) for HBV. Independent predictors of death included HCV (p = 0.024), transfusion (p = 0.013), and HCC >5 cm (p = 0.013). Limiting analysis to cirrhotics, survival with HBV remained superior (p = .02). Transplant—Tumors were similar in HBV and HCV. Survival was better (p = .002) for HBV; recurrence was similar. Independent predictors of death were HCV (p = .01), poor differentiation (p = 0.013), vascular invasion (p = 0.013), and outside Milan (p = 0.013). Limiting analysis to patients within Milan, HBV survival remained better for both resection (p = .03) and transplant (p = .002).

*By invitation
CONCLUSIONS: In a single US center and with identical selection criteria, results of both resection and transplantation are better with HBV than HCV. This reflects the ease of antiviral treatment for HBV, and likely differences in tumor biology.

<table>
<thead>
<tr>
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<td>44(43.8%)</td>
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<th>P Value</th>
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<td>Gender</td>
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<td>M: 45  F: 24</td>
<td>&gt;0.001</td>
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<td>APF &gt; 200</td>
<td>59(57.9%)</td>
<td>38(37.4%)</td>
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<td>Bilirubin</td>
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<td>3.4(0.5)</td>
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<td>B=93(92.9%)</td>
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<tr>
<td></td>
<td>A=14(13.9%)</td>
<td>B=92(91.9%)</td>
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<table>
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<td>Vascular Invasion</td>
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<td>(v) Margin</td>
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<td>Child’s Score</td>
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<td>B=93(92.9%)</td>
<td>0.14</td>
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<tr>
<td></td>
<td>A=14(13.9%)</td>
<td>B=92(91.9%)</td>
<td>0.14</td>
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**Long-Term Outcomes After Total Pancreatectomy and Islet Cell Autotransplantation: Is It a Durable Operation?**


University of Cincinnati, Cincinnati, OH

**OBJECTIVE(S):** Total pancreatectomy and islet cell autotransplantation (TP/IAT) has been increasingly utilized for the management of chronic pancreatitis (CP) with early success. However, the long-term durability of this operation remains unclear.

**METHODS:** All patients undergoing TP/IAT for the treatment of CP with five year or greater follow-up were identified for inclusion in this single-center observational study. End points included narcotic requirements, glycemic control, islet function, and quality of life.

**RESULTS:** From 2002 through 2012, 156 patients underwent TP/IAT. Complete 5-year follow-up (median 6.2 years, IQR = 5.4–7.2) was available on 54 patients that underwent total (n = 41, 75.9%) or completion (n = 13, 24.1%) pancreatectomy with IAT. All patients underwent successful IAT with 6,090 ± 616 islet equivalents per body weight. There was no perioperative mortality and actuarial survival at 5 years was 89%. One-year narcotic independence rates were 55% which continued to improve to over 77% at 5-year follow-up (p < 0.05). Insulin independence rates declined over time (38% at 1 year vs. 28% at 5 years) but insulin requirements (U/d) were similar (21.4 vs. 24.3, p = 0.6). All patients achieved stable glycemic control with a median hemoglobin A1c of 6.9% (5.85–8.3%). The SF-36 QOL assessment demonstrated continued improvements in all tested modules at 5-year follow-up. Two patients developed diabetic complications requiring whole organ pancreas transplant for salvage.

**CONCLUSIONS:** This represents the largest series examining long-term outcomes after TP/IAT. TP/IAT produces durable pain relief and improvement in QOL parameters. Insulin independence rates decline over time, however patients maintain glycemic control.

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*By invitation*
CONCLUSIONS: Using national ACS-NSQIP and Medicare data, this study reports an association between high-quality and low-cost surgical care. These results suggest that high “value” surgical care is being delivered in a wide spectrum of hospitals and hospital types.

OBJECTIVE(S): The high-risk of malignancy associated with main pancreatic duct (MPD) involved intraductal papillary mucinous neoplasm (IPMN) has been established by surgical series. The International Consensus Guidelines recommend surgical resection of MPD-involved IPMN in fit patients. As such, the natural history of MPD-involved IPMN is poorly understood.

METHODS: Review of a prospectively collected database (1992–2012) of patients with IPMN undergoing primary surveillance was performed. Malignant progression was defined as malignancy on pathology/cytology. Analyses included univariate, logistic regression and receiver operating characteristics (ROC) curves.

RESULTS: Five hundred three patients with IPMN underwent primary surveillance, 70 for MPD-involved, mixed-type (MT) IPMN. Indications for intensive surveillance of these 70 high-risk patients were comorbidities, patient choice and early/borderline MPD dilation (42%, 51%, 7%). Mean follow-up was 4.7 years. 9 patients (13%) progressed at a mean of 3.5 years (range: 1–9) during follow-up. Univariate analyses yielded weight loss, interval (from isolated BD-IPMN) to MPD involvement, diffuse MPD dilation, increase of MPD diameter, elevated serum CA19-9 and elevated serum alkaline phosphatase as significant. Maximum MPD and/or branch-duct diameter were not significant. In logistic regression, diffuse MPD dilation, serum CA19-9 and serum alkaline phosphatase were predictors of malignancy. Extrapancreatic cysts predicted benign behavior. ROC curve indicated the combination of these 4 factors achieved an accuracy of 98% in predicting progression.

CONCLUSIONS: Primary surveillance of MT-IPMN may be a reasonable strategy in select patients. Diffuse MPD dilation, serum CA19-9 and serum alkaline phosphatase predict patients likely to progress during primary surveillance, whereas the presence of extrapancreatic cysts appears protective.

*By invitation
A Twenty Year Experience with Thoracic Endovascular Aortic Repair
University of Michigan Cardiovascular Center, Ann Arbor, MI

OBJECTIVE(S): Endovascular approaches (TEVAR) have revolutionized treatment for thoracic aortic disease. We report our 20-year experience with this therapy.

METHODS: 383 patients (mean age 68.9 years, 54% male) underwent TEVAR (1993–2013), predominantly for fusiform aneurysm (125), saccular aneurysm/ulcer (128), acute (59) or chronic (34) dissection, or traumatic injury (35). Rupture was present in 79 (20.6%). 80.3% were high risk for open repair. Mean aortic diameter was 5.5 cm. Extent of repair included arch in 205, total descending aorta in 180, and thoracoabdominal aorta (TAAA) in 20.

RESULTS: Thirty-day mortality occurred in 18 (4.7%). Neurologic events included stroke (5.5%) and spinal cord ischemia (permanent 1.1%, temporary 8.1%). Though dialysis was only required in 1.6%, 19% had renal failure by RIFLE criteria, which independently predicted early mortality (p = 0.004, OR 4.2). Fifteen-year survival was 34.3%. Advancing age, presence of CAD, COPD, TAAA, larger aortic diameter, rupture, or postoperative RIFLE class I or F all independently predicted late mortality (p < 0.05). Endoleak occurred in 26.1%. Fifteen-year freedom from dissection, rupture or reintervention in treated or adjacent aortic segments (i.e., treatment failure) was 69.0%. Independent predictors included presentation with rupture, larger aortic diameter, or intervention on the arch aorta (all p < 0.03). Aortic pathology also independently predicted treatment failure (p = 0.054, Figure).

CONCLUSIONS: TEVAR can be performed with acceptable results in a high risk population. Modification of devices specifically to treat the arch aorta or high risk pathology such as acute or chronic dissection may improve late treatment efficacy.

*By invitation
**31**

X-Chromosome Linked IRAK1 Polymorphism Is Strong Predictor of Multiple Organ Failure and Mortality

Post-Injury


*University of Pittsburgh, Pittsburgh, PA

**OBJECTIVE(S):** Clinical research characterizing the mechanisms responsible for gender based outcome differences post-injury remain conflicting. We sought characterize an x-chromosome linked IRAK1 polymorphism as an alternative mechanism responsible for gender differences post-injury. IRAK1 is key intermediate in the Toll Like Receptor (TLR) pathway thought to drive inflammation post-injury.

**METHODS:** A prospective cohort study was performed over an 18-month period. Blunt injured patients requiring ICU admission were enrolled while patients with isolated brain and spinal cord injuries were excluded. Outcomes of interest included Multiple Organ Failure (MOF, Marshall MODScore >5) and mortality. Logistic regression was utilized to determine the independent risk of poor outcome associated with the IRAK1 variant after controlling for differences in injury and shock severity.

**RESULTS:** In an cohort of 272 patients, the prevalence of the IRAK1 variant was 12.5%. Patients with and without the variant were similar in age, injury severity, and 24-hour blood transfusion. After controlling for important confounders, the IRAK1 variant was independently associated with over a 6-fold (OR 6.4; 95% CI 1.8–23) and 5-fold (OR 5.8; 95% CI 1.4–24) greater risk of MOF and mortality, respectively. These differences were most prominent in males, while females heterozygous for the variant demonstrated worse outcome in a dose-dependent fashion.

**CONCLUSIONS:** The IRAK1 polymorphism is a strong independent predictor of MOF and mortality post-injury and represents a common variant with prognostic potential. These data demonstrate the importance of TLR signaling post-injury and supports that a genetic mechanism may drive gender outcome differences post-injury.

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A Novel Approach to Maintaining Gut Mucosal Integrity Using an Oral Enzyme Supplement


*Massachusetts General Hospital, Harvard Medical School, Boston, MA; *Sanford Children’s Health Research Center, Sanford-Burnham Medical Research Institute, La Jolla, CA

**OBJECTIVE(S):** The lack of enteral nutrition in critically-ill patients is associated with gut barrier dysfunction. We have hypothesized that intestinal alkaline phosphatase (IAP) is the key missing factor and could be used as a supplement to prevent gut-derived sepsis.

**METHODS:** WT and IAP KO mice were used to examine gut barrier function and LPS absorption. Isolated intestinal loops were instilled with inflammatory mediators (LPS, CpG DNA, flagellin) for 2 hours and the fluid applied to target RAW264.7 cells to determine the TNF-α response.

**RESULTS:** Serum LPS levels and permeability to 70 kD FITC-dextran were ~10-fold higher and bacterial translocation to mesenteric nodes was >2-fold higher in the IAP KO vs WT mice (p < 0.01). qPCR revealed that the levels of the tight junction (TJ) genes (Claudin 1/3, Occludin, and Zonula Occludins (ZO) 1/2/3) were >10-fold higher in WT versus IAP KO mice (p < 0.01). With fasting (>48 hrs) IAP levels decreased dramatically in mice and human luminal samples. Inflammatory mediators instilled into mouse intestines induced a 2-fold greater amount of TNF-α from fasted versus fed animals. Oral IAP supplementation for 10 days improved intestinal permeability, i.e., >50 % reduction in FITC-dextran, up-regulation of the TJ gene products, and decreased serum LPS levels.

**CONCLUSIONS:** IAP is a major regulator of the gut mucosal barrier and is able to inhibit bacterial translocation, as well as the absorption and inflammatory impact of bacterially-derived mediators. Enteral IAP supplementation may represent a novel approach to maintaining bowel integrity in critically-ill patients.
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Program #  Author
21    Bret Taback
26    Parissa Tabrizian
32    Tyler J. Tantillo
32    Qingsong Tao
19    Sarah Tevis
14    Richard C. Thirlby
24    Mark Truty
20    Douglas Tyler
22    Aku Ude-Welcome
31    Yorum Vodovotz
15    Katja Vogt
7     Heather Wachtel
3     Xining Wang
9     Sharon M. Weber
23    Steven D. Wexner
21    Lee Wilke
30    David M. Williams
27    Gregory C. Wilson
9     Emily R. Winslow
4     Jordan Winter
16    Heidi Yeh
4     Charles Yeo
22    Tasneem Zahra
28    David S. Zingmond
31    Samuel Zolin
31    Brian Zuckerbraun
29    Nicholas J. Zyromski

THURSDAY, APRIL 10th
8:15 a.m.  Opening Session  Grand Ballroom E-F
President's Opening Remarks
Secretary's Welcome and Introduction of New Fellows
Conference in 2013
President’s Introduction of Honorary Fellows
Presentation of the Medallion for Scientific Achievement
Presentation of the Medallion for the Advancement of Surgical Care
Past President Eulogy
Report of the Committee on Arrangements

9:10 a.m.  Scientific Session I  Grand Ballroom E-F
Moderator: Layton F. Rikkers, M.D.

10:50 a.m. Presidential Address  Grand Ballroom E-F
Introduction: Ronald J. Weigel, M.D.
Address: Layton F. Rikkers, M.D.

1:30 p.m.  Scientific Session II  Grand Ballroom E-F
Moderator: Anna M. Ledgerwood, M.D.

FRIDAY, APRIL 11th
7:00 a.m.  ASA Women in Surgery Breakfast  Grand Ballroom B-C
8:00 a.m.  Scientific Session III  Grand Ballroom E-F
Moderator: Layton F. Rikkers, M.D.

10:30 a.m. Forum Discussion: “Quality: The Key to Surgery’s Future”  Grand Ballroom E-F
Moderator: Layton F. Rikkers, M.D.

1:30 p.m.  Scientific Session IV  Grand Ballroom E-F
Moderator: Ronald J. Weigel, M.D.

4:00 p.m.  Executive Session (Fellows Only)  Grand Ballroom E-F
Presentation of the Flance-Karl Award

7:00 p.m.  Annual Reception  Grand Ballroom Foyer
(Black tie preferred, but dark suits are acceptable.)
8:00 p.m.  Annual Banquet  Grand Ballroom G-K

SATURDAY, APRIL 12th
8:00 a.m.  Scientific Session V  Grand Ballroom E-F
Moderator: New President-Elect
11:00 a.m. Adjourn