Europeana Open Repository
Pacific Coast Surgical Association
88th Annual Meeting
Scientific Program
February 17-20, 2017
Hyatt Regency Resort and Spa
Indian Wells, California

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2017 Arrangements Committee

President and Spouse  Jonathan and Jo Carol Hiatt
Vice-President  L. Andrew DiFronzo
Golf Tournament  Neel Joshi
Tennis Tournament  Jaime Reiter
Guest and Children’s Activities  Maheswari Senthil and Kevin Patel

2017 Program Committee

Program Chair and Recorder  Christian de Virgilio (2020)
Members:  Jonathan Hiatt (2017)
          Kristine Calhoun (2019)
          L. Andrew DiFronzo (2017)
          James Dolan (2018)
          Gregory Victorino (2017)
          Sherry Wren (2021)
Council Officers

Jonathan R. Hiatt, President (2017) Los Angeles, CA
L. Andrew DiFronzo, Vice-President (2017) Los Angeles, CA
John A. Ryan, Jr., Historian Seattle, WA
Sherry Wren, Secretary-Treasurer (2021) Palo Alto, CA
Christian de Virgilio, Recorder (2020) Los Angeles, CA
Quan-Yang Duh, President-Elect (2018) San Francisco, CA
Wen Shen, Vice President-Elect (2018) San Francisco, CA
Robert Sawin, President-Elect (2019) Seattle, WA
Karen Deveney, Immediate Past President (2017) Portland, OR

Caucus Councilors

Richard Bold, Councilor (2018) Northern California
John Vetto, Councilor (2019) Oregon/Hawaii
Edward Phillips, Councilor (2017) Southern California

Council Representatives

Armando Giuliano, Los Angeles, CA (10/2019) Board of Governors, ACS
John G. Hunter, Portland, OR (6/30/2017) American Board of Surgery
Overall Goal and Objectives of the Program
The goal of the program is to provide an educational opportunity for PCSA Members. Members are academic and community surgeons from four caucuses – Northern California, Southern California, Washington/British Columbia/Alaska, and Hawaii/Oregon. Membership is competitive. Attendees represent the leaders of their medical communities.

Learning Outcomes
The meeting will provide high-quality up-to-date information regarding major areas in general surgery. Attendees will learn the most recent developments in the field of surgery from scientific and clinical leaders. Time will be provided following each presentation for questions and discussion. Moderators will oversee sessions and facilitate discussions.

Disclosure
In compliance with the ACCME Accreditation Criteria, the American College of Surgeons 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. All reported conflicts are managed by a designated official to ensure a bias-free presentation. Please see the insert to this program for the complete disclosure list.

Disclaimer
Attendees voluntarily assume all risks involved in travel to and from the Annual Meeting, as well as attendance and participation in the program. PCSA and Association Management by the American College of Surgeons shall not be liable for any loss, injury, or damage to person or property resulting directly or indirectly from any acts of God, acts of government or other authorities, civil disturbances, acts of terrorism, riots, thefts, or from any other similar causes.
CONTINUING MEDICAL EDUCATION
CREDIT INFORMATION

Accreditation

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American College of Surgeons and Pacific Coast 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 15.25 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Of the AMA PRA Category 1 Credits™ listed above, a maximum of 10.75 credits meet the requirements for Self-Assessment.
PCSA RESIDENT’S COMPETITION
The top-scoring resident paper from each caucus will be presented during the scientific sessions. Presentations will be judged on clarity, focus and scientific relevance to surgical practice. This year’s resident contestants are:

**Rosemary Morgan | Oregon/Hawaii**
Saturday, February 18, 10:50AM – 12:25PM
Surgical Resection of Residual Breast Cancer Following Neoadjuvant Chemotherapy: Molecular Analysis of Refractory Disease

**Michael Lallemand | Washington/British Columbia/Alaska**
Saturday, February 18, 10:50AM – 12:25PM
No IV, No Problem: Intraosseous Administration of Tranexamic Acid is as Effective as Intravenous in a Porcine Hemorrhage Model

**Yvonne Kelly | Northern California**
Saturday, February 18, 10:50AM – 12:25PM
An Evidenced-Based Criteria for the Identification and Treatment of Severe Acute Cholecystitis - Beyond the Tokyo Guidelines

**Alexander Schwed | Southern California**
Saturday, February 18, 10:50AM – 12:25PM
Resident Remediation and Program Director Attitudes Towards Categorical Surgical Resident Attrition at High- and Low-Attrition Programs
PCSA NEW MEMBER PRIZE
All New Members are encouraged to submit their abstract for the PCSA New Member Prize Award.

Vatche Agopian  |  Southern California
Sunday, February 19, 7:30AM – 8:40AM
Liver Graft Assessment Following Transplantation (L-GrAFT):
A Novel Score Evaluating Early Allograft Function Accurately Predicts Graft-failure Free Survival

E-POSTER SESSIONS A,B,C
Saturday, February 18, 12:30PM – 2:10PM
E-Posters will be presented on Saturday, February 18 during the lunch hour. Each 3-minute oral presentation of the E-Poster will be followed by brief questions and discussion. A box lunch will be provided.

PCSA SPECIAL GUEST – Howard C. Bauchner, M.D.,
Editor-in-Chief of JAMA
Sunday, February 19, 8:40AM-9:25AM
Howard C. Bauchner, M.D., Editor-in-Chief of JAMA, will speak about the current state of medical journalism and future trends in the field in a presentation entitled, Changes in Medical Journalism: Use of Technology; Article Types; COI; Data Sharing; and Open Access. In addition to his role at JAMA, Dr. Bauchner is Professor of Pediatrics at Boston University School of Medicine.

HISTORIAN PRESENTATION – John Ryan, M.D.
Sunday, February 19, 9:50AM-10:30AM
PCSA Historian Dr. John A. Ryan will make a presentation, Andy Warhol: Disaster and Death, The Intersection of Art, Trauma Systems, and the Hospital Safety Movement - Part II. After attending this presentation, attendees will be able to discuss the life and art of Andy Warhol and explain how his death in the hospital after an operation just predated the hospital safety movement and its elements of root cause analysis, transparency, and system improvement.
PRESIDENTIAL KEYNOTE SPEAKER – Mark Peterson, Ph.D.
Sunday, February 19, 10:30AM– 12:15PM
What can we expect in health politics and policy after the 2016 Presidential election? PCSA President Hiatt’s invited Keynote Speaker is Mark Peterson, Ph.D., Chair of the Department of Public Policy at the Meyer and Renee Luskin School of Public Affairs and Professor of Public Policy, Political Science and Law at UCLA. Professor Peterson is a specialist on American national institutions and national health care policy, interactions among the Presidency, Congress, and interest groups and their implications for health policy making, and the policy, institutional, and political dynamics of health care reform.

PANEL ON HEALTH POLITICS AND POLICY
Sunday, February 19 10:30AM– 12:15PM
Following the Presidential Keynote Speaker, President Hiatt will lead a Presidential Forum where surgeons in leadership positions will join Professor Peterson in a lively discussion. Presidential Forum Panelists include Drs. David Hoyt, Executive Director of the American College of Surgeons; Melina Kibbe, Editor-in-Chief of JAMA Surgery; and Jo Carol Hiatt, Chair of the Kaiser Permanente National Product Council. PCSA Members will have ample opportunity to address the panel and provide their thoughts on these important matters.

INDUSTRY SUPPORT DISPLAYS
A commercial display of scientific interest will be available during the Annual Meeting, providing an opportunity for attendees to view products and services from various corporations. Continental breakfasts and refreshment breaks will be served in the exhibit area.

PCS A would like to thank the following exhibiting companies:

- Bard Davol
- BK Ultrasound
- Cook Medical
- Genomic Health
- Getinge Group
- Integra LifeSciences Corp.
- JAMA Network
- NeuWave Medical
- Olympus
- SBH
- Teleflex
- Torax Medical
- W.L. Gore & Associates

Educational Grant Supporter:

W.L. Gore & Associates
# Schedule of Events at a Glance

(Please note that this schedule is subject to change)

## THURSDAY, FEBRUARY 16

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council Reception*</td>
<td>6:00 pm – 7:00 pm</td>
<td>Serena Vista Lawn</td>
</tr>
<tr>
<td>Council Dinner*</td>
<td>7:00 pm – 9:00 pm</td>
<td>Serena Vista Lawn</td>
</tr>
</tbody>
</table>

## FRIDAY, FEBRUARY 17

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance Committee Meeting*</td>
<td>7:00 am – 8:00 am</td>
<td>Hibiscus</td>
</tr>
<tr>
<td>Finance &amp; Council Breakfast*</td>
<td>7:00 am – 8:30 am</td>
<td>Hibiscus</td>
</tr>
<tr>
<td>Council Meeting*</td>
<td>8:30 am – 3:00 pm</td>
<td>Hibiscus</td>
</tr>
<tr>
<td>Council Photo*</td>
<td>12:00 pm – 12:15 pm</td>
<td>Hibiscus Terrace</td>
</tr>
<tr>
<td>Council Lunch*</td>
<td>12:15 pm – 1:15 pm</td>
<td>Hibiscus Terrace</td>
</tr>
<tr>
<td>Registration</td>
<td>1:00 pm – 6:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Guest Hospitality Desk</td>
<td>1:00 pm – 6:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>1:00 pm – 6:00 pm</td>
<td>Indian Wells CC Office 2</td>
</tr>
<tr>
<td>New Members Private Reception*</td>
<td>5:00 pm – 6:00 pm</td>
<td>Celebrity Villa Lawn</td>
</tr>
<tr>
<td>Welcome Reception</td>
<td>6:00 pm – 7:45 pm</td>
<td>Celebrity Villa Lawn</td>
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## SATURDAY, FEBRUARY 18

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Speaker Ready Room</td>
<td>6:30 am – 5:00 pm</td>
<td>Indian Wells CC Office 2</td>
</tr>
<tr>
<td>Continental Breakfast</td>
<td>7:00 am – 8:00 am</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Guest Hospitality Desk</td>
<td>7:00 am – 12:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Registration</td>
<td>7:00 am – 5:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Guest Hospitality</td>
<td>7:00 am – 5:00 pm</td>
<td>Fairway Terrace</td>
</tr>
<tr>
<td>Industry Support Displays</td>
<td>7:00 am – 4:00 pm</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>President’s Address</td>
<td>8:00 am – 9:00 am</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Scientific Session 1</td>
<td>9:00 am – 10:30 am</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Water in the Desert</td>
<td>9:15 am – 10:15 am</td>
<td>Indian Wells N</td>
</tr>
<tr>
<td>Break with Industry Support</td>
<td>10:30 am – 10:50 am</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Scientific Session 2</td>
<td>10:50 am – 12:20 pm</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Lunch/E-Poster Sessions</td>
<td>12:30 pm – 2:10 pm</td>
<td>Indian Wells N, O and P</td>
</tr>
<tr>
<td>Scientific Session 3</td>
<td>2:10 pm – 3:45 pm</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Break with Industry Support</td>
<td>3:45 pm – 4:00 pm</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Scientific Session 4</td>
<td>4:00 pm – 5:30 pm</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Council &amp; Industry Reception*</td>
<td>5:15 pm – 6:15 pm</td>
<td>Verda Vista Lawn</td>
</tr>
<tr>
<td>Dinner at Leisure</td>
<td>5:30 pm</td>
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</table>

*Invitation Only  **RSVP Required
## Schedule of Events at a Glance

*(Please note that this schedule is subject to change)*

### SUNDAY, FEBRUARY 19

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women in Surgery Forum**</td>
<td>6:30 am – 7:30 am</td>
<td>Indian Wells N</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>7:00 am – 12:00 pm</td>
<td>Indian Wells CC Office 2</td>
</tr>
<tr>
<td>Continental Breakfast</td>
<td>7:00 am – 8:00 am</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Industry Support Displays</td>
<td>7:00 am – 11:30 am</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Guest Hospitality</td>
<td>7:00 am – 12:00 pm</td>
<td>Fairway Terrace</td>
</tr>
<tr>
<td>Registration</td>
<td>7:00 am – 12:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Scientific Session 5</td>
<td>7:30 am – 8:40 am</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Changes in Medical Journalism</td>
<td>8:40 am – 9:25 am</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Break with Industry Support</td>
<td>9:25 am – 9:50 am</td>
<td>Indian Wells IJK</td>
</tr>
<tr>
<td>Historical Presentation</td>
<td>9:50 am – 10:30 am</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>President’s Forum and Panel</td>
<td>10:30 am – 12:15 pm</td>
<td>Indian Wells LM</td>
</tr>
<tr>
<td>Golf Tournament</td>
<td>12:30 pm – 5:30 pm</td>
<td>Indian Wells Resort Golf Course</td>
</tr>
<tr>
<td>Tennis Tournament</td>
<td>1:00 pm – 4:00 pm</td>
<td>Hyatt Indian Wells Tennis Courts</td>
</tr>
<tr>
<td>President’s Reception</td>
<td>6:30 pm – 7:15 pm</td>
<td>Verde Vista Terrace/ Indian Wells Foyer</td>
</tr>
<tr>
<td>President’s Dinner</td>
<td>7:15 pm – 10:00 pm</td>
<td>Indian Wells LM</td>
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</table>

### MONDAY, FEBRUARY 20

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
<th>Location</th>
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<tbody>
<tr>
<td>Global Surgery Forum**</td>
<td>6:30 am – 7:30 am</td>
<td>Desert Vista ABC</td>
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<tr>
<td>Continental Breakfast</td>
<td>7:00 am – 8:00 am</td>
<td>Desert Vista DE &amp; Desert Vista Foyer</td>
</tr>
<tr>
<td>Registration</td>
<td>7:00 am – 12:00 pm</td>
<td>Indian Wells East Foyer</td>
</tr>
<tr>
<td>Speaker Ready Room</td>
<td>7:00 am – 11:15 am</td>
<td>Indian Wells CC Office 2</td>
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<tr>
<td>Guest Hospitality</td>
<td>7:00 am – 10:30 am</td>
<td>Fairway Terrace</td>
</tr>
<tr>
<td>Scientific Session 6</td>
<td>8:00 am – 9:15 am</td>
<td>Desert Vista ABC</td>
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<tr>
<td>Refreshment Break</td>
<td>9:15 am – 9:30 am</td>
<td>Desert Vista Foyer</td>
</tr>
<tr>
<td>Scientific Session 7</td>
<td>9:30 am – 11:00 am</td>
<td>Desert Vista ABC</td>
</tr>
<tr>
<td>Annual Business Meeting</td>
<td>11:00 am – 12:00 pm</td>
<td>Desert Vista ABC</td>
</tr>
</tbody>
</table>

*Invitation Only   **RSVP Required
SATURDAY, FEBRUARY 18

8:00 - 8:15  Vice President Introduction of President
8:15 - 8:45  President’s Address
8:45 - 9:00  Introduction of New Members

9:00 - 10:30  Scientific Session 1 – Moderator Gagandeep Singh

1  Risk Factors for Recurrence in Medullary Thyroid Cancer: Population-Based Study of 955 Patients
   Presenter: Eric Kuo
   Discussant: Michael Campbell
   Closer: Michael Yeh

2  Transoral Endoscopic Thyroidectomy Vestibular Approach (TOETVA): 425 Cases of “NOTES” Thyroidectomy
   Presenter: Angkoon Anuwong
   Discussant: Michael Bouvet
   Closer: Quan-Yang Duh

3  Precautions for Active Surveillance of Ductal Carcinoma in Situ
   Presenter: Carlos Chavez de Paz Villanueva
   Discussant: Amanda Wheeler
   Closer: Sharon Lum

4  Is Time Really of the Essence? Impact of Time between Diagnosis and Sentinel Lymph Node Biopsy on Outcomes in Cutaneous Melanoma
   Presenter: Daniel Nelson
   Discussant: John Vetto
   Closer: Mark Faries

10:30 - 10:50  Morning Break
SATURDAY, FEBRUARY 18

10:50 - 12:20
Scientific Session 2 – Moderator Steven Stain

5 OR/HI Resident Prize Finalist
Surgical Resection of Residual Breast Cancer following Neoadjuvant Chemotherapy: Molecular Analysis of Refractory Disease
Presenter: Rosemary Morgan
Discussant: Kristine Calhoun
Closer: Rodney Pommier

6 WA/BC/AK Resident Prize Finalist
No IV, No Problem: Intraosseous Administration of Tranexamic Acid is as Effective as Intravenous in a Porcine Hemorrhage Model
Presenter: Michael Lallemand
Discussant: Kenji Inaba
Closer: Matthew Martin

7 NoCAL Resident Prize Finalist
An Evidenced-Based Criteria for the Identification and Treatment of Severe Acute Cholecystitis - Beyond the Tokyo Guidelines
Presenter: Yvonne Kelly
Discussant: Christian de Virgilio
Closer: Lygia Stewart

8 SoCAL Resident Prize Finalist
Resident Remediation and Program Director Attitudes Towards Categorical Surgical Resident Attrition at High- and Low-Attrition Programs
Presenter: Alexander Schwed
Discussant: Julie Freischlag
Closer: Farin Amersi
SATURDAY, FEBRUARY 18

12:30 - 2:10  Lunch Poster Session A, B, C

SESSION A – Moderators Kenji Inaba and Jessica O’Connell

A01 Risk Factors of 30-Day Readmissions from the Pediatric National Surgical Quality Improvement Program
   Jamie Anderson

A02 10-Year Results of Roux-en-Y Gastric Bypass (RYGB) at a Single Veterans Affairs (VA) Medical Center: Weight Loss, Anemia, and Medication Requirements
   Gao Chen

A03 The Additive Benefit of Oral Antibiotics to Mechanical Bowel Preparation in Colonic Diverticulitis; ACS-NSQIP Study
   Reza Fazl Alizad

A04 Accuracy of Upper Extremity Ultrasound Vein and Artery Measurements by Surgery Residents As Compared to Vascular Attendings: A Prospective Study
   Kelsey Gray

A05 Predictive Factors for Mortality After Colectomies Performed for Ischemic Colitis
   Monica Jain

A06 New Prey for the Linx®: Standard Versus Expanded Indications for Esophageal Magnetic Sphincter Augmentation for Reflux Disease
   John Kuckelman

A07 Outpatient Laparoscopic Appendectomy: Safe in a Safety Net Hospital?
   David Rosen

A08 Sigmoidectomy and Primary Anastomosis without Fecal Diversion is A Viable Option in Emergent Perforated Diverticulitis: ACS NSQIP Study
   Sarath Sujatha-Bhaskar
SATURDAY, FEBRUARY 18

A09 Longitudinal Assessment of Paraesophageal Hernia Repair in the United States Demonstrates Superior Outcomes with Minimally Invasive Surgical Approaches
Patrick McLaren

A10 Opiates May Be Avoided for the Majority of Low-Risk Outpatient Procedures
Shirin Towfigh

A11 Anastomotic Leak after Open, Laparoscopic, and Robotic Colectomy: A 3-Year Review of the NSQIP Database
Christina Koh

A12 Effect of Cirrhosis on Outcomes following Emergent Repair of Abdominal Wall Hernias
Eric Pillado

A13 A Paradigm Shift in General Surgery: Defining a New Reality in the Era of Minimally Invasive Surgery
Alicia Gaidry

SESSION B – Moderators Rachael Callcut and Darren Malinoski

B1 Redefining Failure to Rescue in Major Trauma Patients: The Role of Preventability
Richard Vasak

B2 Emergency Exploration for Penetrating Thoracic Trauma: Impact of Admission Physiology and Damage Control Surgery
Molly Deane

B3 Trauma Patients with Extremity Injuries: Should Anti-Factor Xa Trough Level Guide Prophylactic Enoxaparin Dose?
Navpreet Dhillon
SATURDAY, FEBRUARY 18

B4 Simultaneous Liver and Kidney Transplantation Using High KDPI Organs in Critically Ill Recipients: Proceed with Caution
Navpreet Kaur

B5 Predictors of clinical maturation in center with High Rate of Arteriovenous Fistula Creation
Abraham Korn

B6 Causes and Outcomes of Finger Ischemia in Hospitalized Patients in the Intensive Care Unit
Gregory Landry

B7 Outcomes of Preinjury Anticoagulation in Traumatic Rib Fractures
Allan Stolarski

B8 Evolution of Surgical Aortic Valve Replacement in the Era of Transcatheter Valve Technology
Aditya Mantha

B9 Early Venous Thromboembolic Prophylaxis in Traumatic Acute Subdural Hematoma is Safe and Effective
Gustavo Recinos

B10 Flail Chest: Less Deadly than Originally Thought
Gustavo Recinos

B11 Unplanned Rehospitalization in High Acuity Orthotopic Liver Transplantation: Etiology, Risk Factors and Impact
Tara Russell

B12 Autogenous Alternative Vein Bypass Remains the Preferred Conduit when Saphenous Vein is not Available
Dale Wilson

B13 A Focus on Emergency Re-Triage Trauma Transfers
Jessica Della Valle
SATURDAY, FEBRUARY 18

SESSION C – Moderators Catherine Dang and Donn Spight

C1 Intraoperative Radiation Therapy (IORT) is Associated with an Increased Rate of Minor Surgical Site Complications in Oncoplastic Breast Conserving Surgery (OBCS)
   Angelena Crown

C2 Splenectomy for Stem-Cell Transplant Candidates with Massive Splenomegaly
   Kaj Johansen

C3 The Importance of Local Therapy in Women with Inflammatory Breast Cancer
   Helen Johnson

C4 A 20-year Military-Civilian Partnership at an Academic Medical Center: A Model for Collaboration Beyond Trauma Care
   Jamie Anderson

C5 Improved Perioperative Outcomes With Staged Arterial Bypass Preceding Resection of Retroperitoneal Masses Involving Iliac Vessels
   Hubert Luu

C6 A National Comparison of Laparoscopic vs. Robotic-Assisted Distal Pancreatectomy
   Mustafa Raoof

C7 Knowledge and Perceptions of Morbidity and Mortality Conferences among Pediatric Surgeons in the Developing World
   Joshua Rouch

C8 Analysis of Index Lesions not Visualized on Breast Specific Gamma Imaging when Imaging for a New Diagnosis of Breast Cancer
   Maria-Elise Sanchez

C9 Surgical Outcomes of Breast Reconstruction in the Elderly Population after Mastectomy: A NSQIP Analysis
   Halley Vora
SATURDAY, FEBRUARY 18

C10 Is Pasireotide Effective in Patients Who Are at High Risk for Development of Postoperative Pancreatic Fistula? A Pilot Study from a Tertiary Center
Stephanie Young

C11 Hiding in Plain Sight? Preoperative Ultrasound Findings in Patients with a Follicular Variant of Papillary Thyroid Cancer
Kahee Jo

C12 Optimization of Breast Conserving Surgery Technique
Shawn Steen

C13 Utility of Routine Modified Barium Swallow Study in Postoperative Esophagectomy Patients
Oliver Eng

2:15-3:45
Scientific Session 3 – Moderator Brant Putnam

9 Survival after Initiation of Continuous Renal Replacement Therapy in a Surgical Intensive Care Unit
Presenter: James Tatum
Discussant: William Schecter
Closer: Daniel Margulies

10 Negative CT can Safely Rule Out Clinically Significant Intra-Abdominal Injury in the Asymptomatic Patient after Blunt Trauma: Prospective Evaluation of 1228 CT Scans for Blunt Abdominal Trauma
Presenter: Elizabeth Benjamin
Discussant: Matthew Martin
Closer: Elizabeth Benjamin

11 National Patterns of Readmission after Isolated Splenic Injuries in the United States
Presenter: Graeme Rosenberg
Discussant: Elizabeth Benjamin
Closer: David Spain
SATURDAY, FEBRUARY 18

12 Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is a Feasible Option for Proximal Aortic Control in Severe Hemorrhage and Arrest
Presenter: Megan Brenner
Discussant: James Davis
Closer: Kenji Inaba

3:45 - 4:00 Afternoon Break

4:00 - 5:15
Scientific Session 4 – Moderator Jonathan Carter

13 A Multicenter Study of Routine Versus Selective Intraoperative Leak Testing for Sleeve Gastrectomy
Presenter: Jason Bingham
Discussant: Clifford Deveney
Closer: Matthew Martin

14 When Does the Learning Curve End?: A High-Volume Single Center Experience with 1750 Cases of Laparoscopic Donor Nephrectomy over 16 Years
Presenter: Shigeyoshi Yamanaga
Discussant: Irene Kim
Closer: Sang-Mo Kang

15 Does high CMS Overall Hospital Quality Star Rating correlate with Improved Outcomes in Advanced Laparoscopic Abdominal Surgery?
Presenter: Christina Koh
Discussant: Richard Bold
Closer: Ninh Nguyen

16 Trends of Hospital Volumes and Associated Mortality of Patients Undergoing Open Pancreaticoduodenectomy in the United States: A Review of 15 years
Presenter: Zeljka Jutric
Discussant: Linda Wong
Closer: Ronald Wolf
SUNDAY, FEBRUARY 19

7:30 - 8:40
Scientific Session 5- Moderator James Lau

17 NEW MEMBER PRIZE
Liver Graft Assessment Following Transplantation (L-GrAFT):
A Novel Score Evaluating Early Allograft Function Accurately
Predicts Graft-Failure Free Survival
Presenter: Vatche Agopian
Discussant: Marc Melcher
Closer: Vatche Agopian

18 The Impact of Therapeutic Hypothermia Used to Treat
Anoxic Brain Injury after Cardiopulmonary Resuscitation
(CPR) on Organ Donation Outcomes
Presenter: Madhukar Patel
Discussant: Dennis Kim
Closer: Darren Malinoski

19 Myocardial Infarction Following High-Risk Vascular Operations: Trend
Analysis of Incidence and Prognostic Implications
Presenter: Yen-Yi Juo
Discussant: Gregory Landry
Closer: Peyman Benharash
SUNDAY, FEBRUARY 19

8:40-9:25  Guest Presentation
“Changes in Medical Journalism: Use of Technology; Article Types; COI; Data Sharing; and Open Access”
by Howard Bauchner, M.D.

9:25 - 9:50  Morning Break with Industry Support

9:50 - 10:30  Historical Presentation
“Andy Warhol: Disaster and Death: The Intersection of Art, Trauma Systems, and the Hospital Safety Movement: PART 2”
by John Ryan, M.D.

10:30 - 12:15  President’s Forum and Panel
Presidential Keynote Speaker Mark Peterson, Ph.D. “Interesting Times: Health Politics and Policy, 2017”
Panelists: Drs. David Hoyt, Executive Director of the American College of Surgeons; Melina Kibbe, Editor-in-Chief of JAMA Surgery; Jo Carol Hiatt, Chair of the Kaiser Permanente National Product Council; and Professor Mark Peterson, Chair of the Department of Public Policy at the Meyer and Renee Luskin School of Public Affairs and Professor of Public Policy, Political Science and Law at UCLA.
MONDAY, FEBRUARY 20

8:00 - 9:15
Scientific Session 6 – Moderator Edward Cornwell

20 Patients with Acute Cholecystitis Should be Admitted to a Surgical Service
   Presenter: Ning Lu
   Discussant: Lydia Lam
   Closer: Linda Wong

21 Safety Net Hospitals Manage Advanced Appendicitis
   with Similar Outcomes and Costs
   Presenter: Roy Won
   Discussant: Shin Hirose
   Closer: Steven Lee

22 Patient Frailty is associated with Increased Morbidity
   after Common Ambulatory General Surgery Operations
   Presenter: Caroline Seib
   Discussant: Clifford Ko
   Closer: Wen Shen

9:15 - 9:30  Morning Break
2017 Scientific Program

MONDAY, FEBRUARY 20

9:30 - 11:00
Scientific Session 7 – Moderator: Quan-Yang Duh

23  Entrustable Professional Activities for Assessment of Surgery Resident Competency
Presenter: Justin Wagner
Discussant: Marc Melcher
Closer: O. Joe Hines

24  Distinct Risk Factors for Superficial Versus Organ-Space Surgical Site Infections after Pancreas Surgery
Presenter: Irmina Elliott
Discussant: Thomas Biehl
Closer: Timothy Donahue

25  Endoscopic Grading of Rectal Mucosa Is Predictive of Leak in Stapled Anastomoses
Presenter: Sarath Sujatha-Bhaskar
Discussant: David DeHaas, Jr.
Closer: Ninh Nguyen

26  Impact of Primary Tumor Site on Response to Biologic Therapy in Patients with Stage IV Colorectal Cancer: A Population-Based Study
Presenter: Laurel Guthrie
Discussant: Shyamali Singhal
Closer: Maheswari Senthil

11:00 - 12:00  Business Meeting
1 Risk Factors for Recurrence in Medullary Thyroid Cancer:
Population-Based Study of 955 Patients

Authors: Eric J. Kuo, Shonan Sho, Ning Li, Masha J. Livhits, Michael W. Yeh

Institution: David Geffen School of Medicine

Presenter: Eric Kuo
Discussant: Michael Campbell
Closer: Michael Yeh

Objective: To evaluate predictors of reoperation in patients with medullary thyroid carcinoma (MTC) on a population-level.

Background: Persistent or recurrent MTC occurs in up to 50% of patients following initial surgery. Total thyroidectomy with prophylactic central neck dissection is recommended to decrease local recurrence, although existing studies are limited to older institutional series.

Methods: Cases of MTC (1999-2012) were identified from the California Cancer Registry and linked to the Office of Statewide Health Planning and Development to allow for longitudinal follow-up. Outcome measures were disease-specific mortality and reoperation > 30 days after index surgery.

Results: The cohort included 955 patients, of whom 729 underwent surgery: lobectomy (20.6%), total thyroidectomy (38.1%), and total thyroidectomy plus central (10.7%) or lateral neck dissection (25.7%). Five-year disease-specific mortality was 13.4%. Predictors of disease-specific mortality included advanced age (hazard ratio [HR] 1.42 per decade), tumor size (> 4 cm, HR 3.70), and regional (HR 9.4) or metastatic (HR 36.6) disease, while number of lymph nodes examined (HR 0.98 per node) was protective. The rate of reoperation was 10.2%. The presence of nodal metastasis increased the risk of reoperation (HR 1.97), while central (HR 0.092) and lateral neck dissection (HR 0.17) performed at the index operation were protective. Of patients who underwent reoperation, 59.5% were disease free at a median follow-up of 7.8 years.

Conclusions: Nodal dissection may improve survival and decrease reoperation in MTC. Many patients underwent suboptimal surgery without lymph node dissection, stressing the importance of adhering to recommended surgical treatment for MTC.
2 Transoral Endoscopic Thyroidectomy Vestibular Approach  
(TOETVA): 425 Cases of “NOTES” Thyroidectomy

Authors: Angkoon Anuwong¹, Khwannara Kantha¹, Pornpeera Jitpratoom¹, Thanyawat Sasanakietkul¹, Quan-Yang Duh²

Institution: ¹Police General Hospital, ²University of California – San Francisco

Presenter: Angkoon Anuwong  
Discussant: Michael Bouvet  
Closer: Quan-Yang Duh

Objectives: To validate the safety and outcome of TOETVA.

Background: Recently small preliminary series of NOTES (natural orifice transluminal endoscopic surgery) thyroidectomy have been published high rates of complications. We report our 3 years’ experience of transoral endoscopic thyroidectomy vestibular approach (TOETVA) with rates of complications similar to conventional thyroidectomy.

Design/Methods: This study is a retrospective analysis of patients who underwent TOETVA from April 2014 to August 2016 in single tertiary center in Thailand. Patients were offered TOETVA if the thyroid gland was smaller than 10 cm and had 1) benign single/multiple tumors, 2) follicular neoplasm, 3) papillary microcarcinoma or 4) well-controlled Graves’ disease. Three laparoscopic ports were inserted at oral vestibule: one 10 mm midline and two 5 mm lateral. Insufflation pressure was 6 mmHg. Conventional laparoscopic instruments and ultrasonic shearer were used. Recurrent nerves and parathyroid glands were routinely identified and protected.

Results: TOETVA was successfully performed in 422 patients. Three patients converted to conventional operation. Mean operative time was 96±37 minutes. Mean blood loss was 36±36 ml. Twenty five patients (5.8%) had transient hoarseness and 41 (9.5%) had transient hypoparathyroidism. None had permanent recurrent laryngeal nerve palsy or hypoparathyroidism. Three patients (0.7%) had transient mental nerve injury. One patient developed post-operative hematoma, treated by open surgery. Twenty patients (5.8%) had seroma treated by simple aspiration.

Conclusions: We showed that TOETVA, a NOTES thyroidectomy, can be performed safely and needing only conventional laparoscopic instruments. It may be a better option than other remote-access thyroidectomy approaches.
3 Precautions for Active Surveillance of Ductal Carcinoma in Situ

Authors: Carlos Chavez de Paz Villanueva, Valentina Bonev, Maheswari Senthil, Naveenraj Solomon, Mark Reeves, Carlos Garberoglio, Jukes Namm, Sharon Lum

Institution: Loma Linda University

Presenter: Carlos Chavez de Paz Villanueva
Discussant: Amanda Wheeler
Closer: Sharon Lum

Objective: To determine factors associated with upgrade to invasive cancer in patients presenting with ductal carcinoma in situ (DCIS) that would preclude active surveillance (AS).

Background: Recognition of over-diagnosis/treatment of screen-detected DCIS has spurred trials randomizing women with DCIS to AS (imaging surveillance +/- endocrine therapy) versus standard surgical care.

Methods: We reviewed a cohort of surgically treated women with initial diagnosis of DCIS from 1998-2012 in the National Cancer Data Base. Proportions of cases upgraded to invasive carcinoma on final surgical pathology were compared by tumor, host, and system characteristics.

Results: Of 137,535 women presenting with DCIS, 19,198 (13.96%) had invasive carcinoma on final pathology. Multivariate analysis demonstrated age ((18-44 vs. >74, OR=0.63; 95% CI=0.57-0.69); (45-54 vs. >74, OR=0.88; 95% CI=0.81-0.97), race/ethnicity (Hispanic vs. White, OR=0.89; 95% CI=0.79-0.99; Black vs. White, OR=0.92; 95% CI=0.86-0.99), grade ((intermediate vs. low, OR=1.32; 95% CI=1.25-1.41); (high vs. low, OR=2.47; 95% CI=2.31-2.64)), estrogen receptor status (positive vs. negative, OR=2.30; 95% CI=2.16-2.45), size ((0.5-1.0 cm vs. <0.5 cm, OR=1.30; 95% CI=1.23-1.38); (1.0-2.0 cm vs. <0.5 cm, OR=1.85; 95% CI=1.74-1.97); (2.0-5.0 cm vs. <0.5 cm, OR=2.94; 95% CI=2.71-3.20); (>5.0 cm vs. <0.5 cm, OR=5.65; 95% CI=4.73-6.76)), insurance status ((Medicare vs. uninsured/Medicaid, OR=1.30; 95% CI=1.17-1.44); (private vs. uninsured/Medicaid, OR=1.28; 95% CI=1.16-1.41)), facility type (academic vs. community, OR=0.52; 95% CI=0.48-0.57), and income ((< $38,000 vs. > $63,000, OR=1.17; 95% CI=1.06-1.28)) were significantly associated with upgrade on final pathology. Of 15,256 patients with low grade disease, 3,734 (19.66%) were found to have invasive disease at surgery.

Conclusions: When selecting patients for AS of DCIS, factors other than tumor biology associated with invasive carcinoma on final pathology may need to be considered. At the time of randomization to AS, a significant proportion of patients with low grade DCIS will harbor invasive carcinoma.
Is Time Really of the Essence? Impact of Time between Diagnosis and Sentinel Lymph Node Biopsy on Outcomes in Cutaneous Melanoma

Authors: Daniel W. Nelson, Stacey Stern, Mark B. Faries

Institution: John Wayne Cancer Institute

Presenter: Daniel Nelson
Discussant: John Vetto
Closer: Mark Faries

Objective: To determine if a delay between initial diagnosis and SLNB impacts outcomes in cutaneous melanoma.

Background: Hypothetically, a delay between melanoma diagnosis and SLNB could affect melanoma outcomes, either adversely by allowing growth and dissemination of metastases or beneficially by allowing development of anti-melanoma immune response. Existing data are conflicting as to the effect of SLNB delay on patient survival.

Methods: Query and analysis of a large prospectively maintained database of patients with primary cutaneous melanomas undergoing SLNB was performed. An independent dataset from the Multicenter Selective Lymphadenectomy Trial (MSLT-I) was used for validation. Main outcome measures included disease-free survival (DFS) and melanoma-specific survival (MSS).

Results: Early and delayed SLNB were defined as <30 and ≥30 days from initial diagnosis, respectively. 2,483 patients met inclusion criteria. Positive sentinel lymph nodes were identified in 17.4% (n=432). Among all patients 42% had SLNB ≥30 days after diagnosis, and 37% of positive SLNB were at ≥30 days. No differences in gender, anatomic site or histopathologic features were identified between the two groups. There was no difference in MSS (p=0.96) or DFS (p=0.70) between those undergoing early or delayed SLNB. Examination of the MSLT-I trial data similarly demonstrated no difference in survival (MSS p=0.98; DFS p=0.92).

Conclusions: This, the largest study on this subject to date, demonstrates no adverse impact on long-term clinical outcomes of patients by a delay of SLNB beyond 30 days. MSLT-I data confirm this result. Patients may be reassured that if surgery must be delayed, it should be safe.
5 Oregon/Hawaii Caucus Resident Prize Finalist
Surgical Resection of Residual Breast Cancer following Neoadjuvant Chemotherapy: Molecular Analysis of Refractory Disease

Authors: Rosemary E. Morgan, Cynthia Jackson, Rodney F. Pommier, Jennifer Peckham, Patrick Muller, Mary E. Condron, Nora Jameson, SuEllen J. Pommier

Institution: Oregon Health and Science University

Presenter: Rosemary Morgan
Discussant: Kristine Calhoun
Closer: Rodney Pommier

Objective: To determine whether breast cancer stem cells (BCSC) are present in residual disease (RD) and exhibit changes in oncogenic mutations after neoadjuvant chemotherapy (NAC).

Background: Breast cancers with similar pathology do not respond equally well to chemotherapy. After NAC, 85% of women have RD. These patients have poorer outcomes than those who have complete pathological responses to NAC. BCSC may be responsible for maintenance of tumor proliferation despite chemotherapy. Therefore, we examined tumors excised before chemotherapy and compared them to the tumors of patients with RD.

Methods: Fresh surgical specimens were obtained from 37 chemo naïve and 11 post-NAC patients with invasive ductal carcinomas. Cell subpopulations were characterized via cell sorting and were genetically analyzed with a 42 gene oncogene panel. BCSC frequencies and oncogene mutation profiles were compared between chemo naïve and NAC tumors.

Results: There were no significant differences in demographics or tumor characteristics between chemo naïve and NAC patients. Nine of 11 NAC patients had little to no identifiable treatment effect. NAC patients had a 2.43 fold increase in the frequency of Lin-CD49f-CD24+ BCSC compared to chemo naïve patients (p=0.009). Furthermore, within these BCSC, PIK3CA mutations increased from 31.6% to 36.4% and TP53 mutations increased from 5.3% to 36.4%, compared to chemo naïve patients (p<0.05).

Conclusions: Viable BCSC are present in RD. They are significantly increased in number and harbor increased frequencies of deleterious oncogenic mutations after NAC. These findings may explain the poorer clinical outcomes in patients with RD and identify targeted therapies.
No IV, No Problem: Intraosseous Administration of Tranexamic Acid is as Effective as Intravenous in a Porcine Hemorrhage Model

Authors: Michael Lallemand, Donald Moe, John McClellan, Mike Loughren, Shannon Marko, Matthew Eckert, Matthew Martin

Institution: Madigan Army Medical Center

Presenter: Michael Lallemand
Discussant: Kenji Inaba
Closer: Matthew Martin

Objective: Compare serum concentrations of tranexamic acid (TXA) when given IV and intraosseous (IO) and to compare the efficacy of IO administered TXA to IV at reversing hyperfibrinolysis.

Background: The acute coagulopathy of trauma is often accompanied by hyperfibrinolysis. TXA can reverse this phenomenon, and, when given early, decreases mortality from bleeding. Establishing IV access can be difficult in trauma and IO access is often preferred for drug administration. Currently, there is no data on the efficacy of IO administered TXA.

Methods: Using a porcine hemorrhage + ischemia-reperfusion (IR) model 16 swine underwent hemorrhagic shock followed by tissue plasminogen activator (tPA) infusion to induce hyperfibrinolysis. Animals received an IV or tibial IO TXA infusion over 10 minutes. Blood was analyzed using ROTEM to monitor reversal of hyperfibrinolysis. Serum was analyzed for drug concentrations.

Results: After hemorrhage and IR, there were no significant differences in MAP (48 vs 49.5), lactate (11.1 vs 10.8), and pH (7.20 vs 7.22) between groups. Intraosseous TXA corrected the lysis index at 30 minutes in EX-TEM and IN-TEM, like IV. Peak serum levels of TXA after IV and IO administration show concentrations of 160.9µg/mL and 132.57µg/mL respectively (p=0.053). Peak levels occurred at the completion of infusion. Drug levels were tracked for four hours. At the end of monitoring, plasma concentrations of TXA were equivalent.

Conclusions: Intraosseous administration of TXA is as effective as intravenous in reversing hyperfibrinolysis in a porcine model of hemorrhagic shock. Intraosseous administration was associated with a similar peak levels, pharmacokinetics, and clearance.
7 Northern California Caucus Resident Prize Finalist

An Evidenced-Based Criteria for the Identification and Treatment of Severe Acute Cholecystitis - Beyond the Tokyo Guidelines

Authors: Yvonne Kelly, Carlos Corvera, Lygia Stewart

Institution: University of California - San Francisco

Presenter: Yvonne Kelly
Discussant: Christian de Virgilio
Coser: Lygia Stewart

Objective: Development of evidence-based criteria for identification and optimal treatment of severe acute cholecystitis (SevAC)

Background: Acute cholecystitis (AC) variably presents from a mild illness to complex disease (gangrene, abscess/perforation, Mirizzi, sepsis). Tokyo Guidelines (TokyoG) provide treatment guidance but are consensus, not evidence-based.

Methods: We studied 324 patients with acute cholecystitis. Clinical information was analyzed to identify clinical parameters associated with SevAC and develop evidence-based criteria for optimal SevAC treatment.

Results: There were 147 AC cases, 177 SevAC cases. SevAC manifestations included: sepsis (38%), perforation/abscess (45%), gangrene (59%), Mirizzi syndrome (28%). Evidence based SevAC parameters included: Wbc>15k, T.bili>1.5, presentation>3 days, abscess/perforation, radiologic signs severe inflammation, and sepsis. SevAC was present in 92% of cases with 2 parameters, and 98% with 3 parameters. In contrast, Tokyo guidelines identified SevAC in only 79% of cases. SevAC patients initially treated with a Cholecystostomy tube (C-tube) more frequently had successful laparoscopic cholecystectomy vs TokyoG or immediate surgery (86% vs 63% vs 45%, respectively, P=0.0001); were less likely to need additional treatments (abscess drainage, re-admission, 2nd operation) (5% vs 23% vs 38%, respectively, P=0.0001); and had shorter post-op hospitalization (2 vs 5 vs 7 days, respectively, P<0.0001).

Conclusions: This study identified evidence-based clinical parameters that predicted SevAC better than Tokyo guidelines. Improved SevAC identification and use of pre-op C-tube led to better outcomes than immediate cholecystectomy or Tokyo guideline management (successful laparoscopic procedures, less need for additional treatments/admissions, shorter post-op hospital stay). This study defines a new set of evidenced-based clinical criteria for the identification and management of severe acute cholecystitis.
8 Southern California Caucus Resident Prize Finalist
Resident Remediation and Program Director Attitudes Towards Categorical Surgical Resident Attrition at High- and Low-Attrition Programs

Authors: Alexander C. Schwed¹, Steven Lee¹, Edgardo S. Salcedo², Mark E. Reeves¹, Kenji Inaba⁴, Richard A. Sidwell¹, Farin Amersi⁴, Chandrakanth Are⁶, Tracey D. Arnell⁷, Richard B. Damewood⁸, Daniel L. Dent⁹, Timothy Donahue⁴, Jeffrey Gauvin¹⁰, Thomas Hartranft¹¹, Garth R. Jacobsen¹², Benjamin T. Jarman¹³, Marc L. Melcher¹⁴, John D. Mellinger¹⁵, Jon B. Morris¹⁶, Mark Nehler¹⁷, Brian R. Smith¹⁸, Mary Wolfe¹⁹, Amy H. Kaji¹, Christian de Virgilio¹

Institutions: ¹Harbor-UCLA, ²University of California – Davis, ³Loma Linda University, ⁴University of Southern California, ⁵Iowa Methodist Medical Center, ⁶University of Nebraska, ⁷Columbia University, ⁸York Hospital, ⁹University of Texas at San Antonio, ¹⁰Santa Barbara Cottage Hospital, ¹¹Mt. Carmel Health, ¹²University of California – San Diego, ¹³Gunderson Health System, ¹⁴Stanford University, ¹⁵Southern Illinois University School of Medicine, ¹⁶University of Pennsylvania, ¹⁷University of Colorado, ¹⁸University of California – Irvine, ¹⁹University of California – San Francisco

Presenter: Alexander Schwed
Discussant: Julie Freischlag
Closer: Farin Amersi

Importance: Prior studies of resident attrition have included preliminary residents and likely overestimate categorical resident attrition. It is unclear whether Program Director (PD) attitudes affect attrition.

Objective: To determine whether PD attitudes correlate with resident attrition, and to measure the categorical resident attrition rate.

Design, Setting, and Participants: 21 current PDs in General Surgery were surveyed about their opinions regarding resident education and attrition. Total resident complement, demographic information and annual attrition data were collected.
Main Outcome and Measures: Calculated 5-year attrition rate (2010-2011 to 2014-2015). First-time pass rates on the Qualifying Examination (QE) and Certifying Examination (CE) of the American Board of Surgery (ABS) were collected. High- and low-attrition programs were compared.

Results: The 21 programs represented different geographic locations and program types (12 University-based, 3 University-affiliated, 6 Independent). Overall, 85 of 966 residents (8.8%) left training during the study period (15 PGY-1 (17.6%), 34 PGY-2 (40%), 36 PGY-3 or higher (42.4%)). Forty-four (44) residents left surgery for another discipline (53%), 21 residents transferred to a different surgery program (25.3%), and 18 residents left Graduate Medical Education (21.7%). The calculated annual attrition rate ranged from 0.73% to 6% (median 2.5% [1.5%-3.4%]). Comparing high- (>3.4%) and low- (<1.5%) attrition programs, low-attrition programs were more likely to utilize resident remediation (21% vs. 6.8%, P<0.001). QE and CE pass rates were similar between the groups (QE: 92.5 vs. 93%, P=0.92; CE: 81.5% vs 83%, P=0.47).

Conclusions: The overall attrition rate of 8.8% is significantly lower than previously reported. PDs at low-attrition programs were more likely to utilize resident remediation. Variations in attrition may be explained by PD attitudes, though larger studies are needed to further define program-factors affecting attrition.
Survival after Initiation of Continuous Renal Replacement Therapy in a Surgical Intensive Care Unit

Authors: James M. Tatum, Ara Ko, Navpreet K. Dhillon, Eric J.T. Smith, Galinos Barmparas, Daniel R. Margulies, Eric J. Ley

Institution: Cedars-Sinai Medical Center

Presenter: James Tatum
Discussant: William Schecter
Closer: Daniel Margulies

Objective: Characterize survival to discharge with increasing duration of Continuous Renal Replacement Therapy (CRRT) in a surgical intensive care unit.

Background: CRRT is of known benefit in patients with indications for renal replacement therapy, not tolerating intermittent hemodialysis. The percent of patients that survive to discharge after a specific duration of therapy is unknown.

Methods: Retrospective cohort study of all patients admitted to a single surgical intensive care unit from July 2012 to January 2016. Population is mixed general surgical and pre abdominal transplant patients. Patients were censored from further survival analysis upon receiving a transplant. Patient characteristics are summarized. Survival is assessed with Kaplan-Meier modeling, general surgery and pre-transplant patient survival is compared with Log-Rank tests.

Results: 108 patients, 52 general surgical and 56 pre abdominal transplant patients (23 of whom were transplanted) are examined. Average age is 62 years, 60% are male. Mean APACHE IV score is 36.6±28. Mean duration of CRRT is 6.4±6.0 days. Kaplan-Meier analysis shows that percent survival to discharge after 1, 3, 5, 7 and 10 days of CRRT is 92.6 (SE 2.5), 78.9 (4.1), 64.3 (5.2), 51.3 (5.82) and 32.1 (5.9), respectively. Log-Rank testing did not show a difference in survival between general surgical and pre abdominal transplant patient survival curves (p=0.3).

Conclusions: CRRT of short duration to support renal clearance or address fluid imbalances in hemodynamically unstable patients may provide a survival benefit. Survival in patients with continued indication for CRRT rapidly decreases with duration of therapy beyond five days.
10 Negative CT can Safely Rule Out Clinically Significant Intra-Abdominal Injury in the Asymptomatic Patient after Blunt Trauma: Prospective Evaluation of 1228 CT Scans for Blunt Abdominal Trauma

**Authors:** Elizabeth Benjamin, Jayun Cho, Evren Dilektasli, John Brunner, Lydia Lam, Kenji Inaba, Demetrios Demetriades

**Institution:** University of Southern California

**Presenter:** Elizabeth Benjamin

**Discussant:** Matthew Martin

**Closer:** Elizabeth Benjamin

**Objective:** Evaluate the use of abdominal computed tomography (CTAP) after blunt trauma and the need for observation following negative imaging.

**Background:** CTAP is highly specific for injury identification and commonly used in evaluation of blunt trauma patients. Despite this, there’s no consensus on the required clinical observation period after negative imaging, often impacting patient flow and hospital cost.

**Methods:** Prospective analysis, level I trauma center, all blunt trauma patients with CTAP 11/2014-5/2015. Symptomatic patients were defined as having abdominal pain or external signs of trauma on admission. All images were reviewed by an attending radiologist. Primary outcome was missed injury.

**Results:** Over the study period, there were 1468 blunt trauma admissions of which 1228 patients underwent CTAP. 829 (67.5%) patients were evaluable on admission (GCS 15), and of these, 338 (40.8%) were symptomatic, 491 (59.2%) asymptomatic. Although symptomatic patients were more likely to have positive imaging (20% vs 14%, p=0.018), the 138 positive CT scans were equally distributed between symptomatic and asymptomatic patients (n=69, 50%). Abdominal tenderness or external signs of trauma had poor sensitivity and specificity (50.0%, 61.1%, respectively) for predicting a positive CTAP. In the 422 asymptomatic evaluable patients with negative imaging, there were zero missed injuries.

**Conclusions:** Abdominal imaging after trauma is justified in the appropriate clinical setting to evaluate for significant abdominal injury regardless of symptomatology. In asymptomatic, evaluable patients with a negative CTAP, clinically significant abdominal injury is unlikely and these patients may be considered for early discharge or disposition to another treatment service.
National Patterns of Readmission after Isolated Splenic Injuries in the United States

**Authors:** Graeme M. Rosenberg, Thomas G. Weiser, Paul M. Maggio, Timothy D. Browder, Lakshika Tennakoon, David A. Spain, Kristan L. Staudenmayer

**Institution:** Stanford University

**Presenter:** Graeme Rosenberg
**Discussant:** Elizabeth Benjamin
**Closer:** David Spain

**Objective:** To evaluate national patterns of readmission depending on management strategy for isolated splenic injuries.

**Background:** Multiple treatment strategies for splenic injuries are accepted. Long-term outcomes for splenic trauma are not well known.

**Methods:** The 2013 HCUP Nationwide Readmissions Database (NRD) was used. A cohort of patients 18 years or older with isolated splenic injuries was identified. Patients were included if they were admitted during the first half of 2013 and excluded if they died during the index hospitalization.

**Results:** A total of 728 patients met inclusion and exclusion criteria. An initial trial of observation was the choice of therapy in 511 (70%) patients, while 157 (22%) underwent splenectomy, and 55 (8%) underwent angioembolization. For those surviving their index admission, the overall readmission rate was 2.7%. All readmissions, except for one, occurred in patients who received no treatment for their injury at their index admission. Splenectomy was performed in 25% of these readmissions. In logistic regression analysis controlling for age, gender, ISS, and AIS, an initial management strategy involving a procedure was associated with a lower odds ratio for all-cause readmission rates (OR 0.24, p<0.05).

**Conclusions:** This is the first national study to evaluate readmission rates associated with isolated splenic injuries. All-cause 6-month readmission rates were overall low; however, readmissions were more frequent if patients did not have treatment during their initial hospitalization and 25% involved a splenectomy. This study highlights the importance of considering the long-term consequences of decisions made for the early management of splenic injuries.
12  **Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is a Feasible Option for Proximal Aortic Control in Severe Hemorrhage and Arrest**

**Authors:** Thomas S. Scalea¹, Megan Brenner¹, William Teeter², Melanie Hoehn², Deborah Stein¹, Anna Romagnoli³

**Institutions:** ¹R. Adams Cowley Shock Trauma Center, ²University of Maryland, ³Walter Reed Military Medical School

**Presenter:** Megan Brenner  
**Discussant:** James Davis  
**Closer:** Kenji Inaba

**Objective:** We described the largest single institution’s experience with REBOA.

**Background:** REBOA is a percutaneous transfemoral balloon used in selected centers for temporary hemostasis via proximal aortic control, often instead of ED thoracotomy. Even in busy centers, it is rarely needed.

**Methods:** We retrospectively reviewed REBOA use for severe traumatic abdominal hemorrhage (H), traumatic arrest (AR), or non-traumatic abdominal hemorrhage (NTH) over three years.

**Results:** 60 patients had REBOA for H and AR. Mean age was 40±18 years. Mean admission GCS was 6±5 and median ISS 36±16. Mean admission SBP and HR was 98±52 and 104±47, respectively for H patients. The distal thoracic aorta was occluded in 76.7%; 100% of AR patients. 23.3% had distal abdominal aortic occlusion. Mean time to aortic occlusion (including cannulation) was 9.5±4.8mins and femoral artery cannulation was 3.6±1.6mins. Percutaneous access was used in 36%, and groin cutdown used in 64%, including 70% of the AR group. Overall mortality was 77%; 59% for H patients, and 93% for AR. Of the AR patients, 45% were resuscitated and went to the operating room. 5 patients underwent REBOA for NTH, visceral artery rupture (4), GI bleed (1). Mortality of NTH patients was 60%. One patient required femoral bifurcation reconstruction, and one balloon ruptured without sequelae after REBOA use. No aortoiliac injury, ischemia, or limb loss occurred from REBOA use.

**Conclusions:** REBOA is a minimally invasive alternative to ED thoracotomy to temporize non-compressible torso hemorrhage and obtain proximal aortic control with comparable survival.
A Multicenter Study of Routine Versus Selective Intraoperative Leak Testing for Sleeve Gastrectomy

Authors: Jason Bingham1, Jedidiah Kaufman2, James Dickerson3, Alec Beekley4, Gordon Wisbach5, Erin Ahnfeldt6, Robert Lim7, Yong Choi8, Matthew Martin1

Institutions: 1Madigan Army Medical Center, 2Swedish Surgical Specialties, 3San Antonio Army Medical Center, 4Thomas Jefferson University, 5Naval Medical Center San Diego, 6William Beaumont Army Medical Center, 7Tripler Army Medical Center, 8Dwight David Eisenhower Army Medical Center

Presenter: Jason Bingham
Discussant: Clifford Deveney
Closer: Matthew Martin

Objective: To evaluate the clinical utility of the intraoperative leak test (IOLT) during sleeve gastrectomy (SG).

Background: Staple line leak after SG is a rare but dreaded complication. Many surgeons routinely perform an IOLT, but there is little evidence to validate its clinical benefit or safety.

Methods: A multicenter, retrospective study involving 8 bariatric centers over a 5-year period was performed. Cases were grouped by whether an IOLT was performed, and centers were categorized as routine or selective users of IOLT. The efficacy of the IOLT for identifying staple line defects and for predicting postoperative leaks was compared.

Results: 4,285 patients underwent SG from 2010 thru 2014. 37 patients (0.9%) developed a postoperative staple line leak. 2377 patients (56%) received an IOLT. Only three patients (0.13%) had a positive IOLT finding, two of which occurred after a recognized stapler misfire. 20 patients with a negative IOLT subsequently developed a postoperative leak. The IOLT demonstrated a sensitivity of only 13.0%. There was a trend, although not significant, toward increased leak rates when an IOLT was performed versus when no IOLT was performed. The postoperative leak rate was not statistically different between centers routinely performing IOLT versus those performing selective IOLT.

Conclusions: Routine IOLT for SG had a yield of only 0.04%, had poor sensitivity, and was negative in 87% of patients who developed postoperative leaks. The use of IOLT was not associated with a decrease in the incidence of post-operative leaks, and routine IOLT had no benefit over selective leak testing.
When Does the Learning Curve End?: A High-Volume Single Center Experience with 1750 Cases of Laparoscopic Donor Nephrectomy over 16 Years

Authors: Shigeyoshi Yamanaga1,2,3, Andrew M. Posselt1, Chris E. Freise1, Claus Niemann4, Angel Rosario1, Danny Fernandez1, Takaaki Kobayashi1, Aaron J. Ahearn5, Mehdi Tavakol1, Sang-Mo Kang1

Institutions: 1University of California - San Francisco, 2Japanese Red Cross Kumamoto Hospital, 3Aichi Medical 4University, 5University of Massachusetts Memorial

Presenter: Shigeyoshi Yamanaga
Discussant: Irene Kim
Closer: Sang-Mo Kang

Objective: We hypothesized that the learning curve for laparoscopic donor nephrectomy (LDN) would extend well beyond over 100 cases.

Background: To our knowledge, no studies have examined learning curves beyond a few years or 100 cases, possibly due to surgeon turnover, patient heterogeneity, and lack of electronic records.

Methods: We retrospectively analyzed the records of 1750 consecutive LDN from 1999 to 2015 in our institution. Three surgeons performed pure intraperitoneal LDN. We divided donors into 3 groups (group1: 1999-2005, group2: 2006-2010 and group3: 2011-2015) and analyzed the outcomes of donors and recipients specifically focused on learning curve.

Results: The complexity of cases increased over time as experience grew. However, outcomes including operative time (group1: 192.1 ± 42.7 min, group2: 170 ± 28.7 min and group3: 153.6 ± 26.0 min) and surgical complications (group1: 11.7%, group2: 9.1% and group3: 4.9%) significantly decreased over each 5-year period. The learning curve was steep for the first 100 cases. However, it has not plateaued after 15 years, despite no significant changes in general techniques over the last decade. Each individual surgeon’s learning curve followed the general trend with two synchronized humps and settled down to the same point, although each surgeon operated independently of the others. Recipient outcomes including slow graft function and serum creatinine in short-/long-term have improved significantly over time.

Conclusions: The learning curve for LDN may well beyond the decade and even over 100 cases for individual surgeons, with ongoing improvements of already excellent outcomes.
Does high CMS Overall Hospital Quality Star Rating Correlate with Improved Outcomes in Advanced Laparoscopic Abdominal Surgery?

Authors: Christina Y. Koh, Colette S. Inaba, Sarath Sujatha-Bhaskar, Ninh T. Nguyen

Institution: University of California - Irvine

Presenter: Christina Koh
Discussant: Richard Bold
Closer: Ninh Nguyen

Objective: To determine if Centers for Medicare & Medicaid Services (CMS) high-star hospitals (HSHs) have improved outcomes and resource utilization in advanced laparoscopic abdominal surgery compared with low-star hospitals (LSHs).

Background: The CMS Overall Hospital Quality Star Rating, which includes 64 measures across seven areas of quality, was recently released to help patients compare hospitals based on a 5-star scale, with 5 representing the best.

Methods: Using the University HealthSystem Consortium (UHC) database from 2013-2015, we compared outcomes of patients who underwent laparoscopic bariatric surgery (sleeve gastrectomy/Roux-en-Y gastric bypass), colorectal surgery (colectomy/rectectomy), and paraesophageal hernia repair/ Nissen fundoplication between HSHs (4-5 stars) and LSHs (1-2 stars). Outcome measures included ICU admissions, cost, morbidity, and mortality.

Results: 72,662 advanced laparoscopic abdominal surgeries were performed at 66 HSHs (N=38,299) and 78 LSHs (N=34,363). The proportion of ethnic minorities was lower at HSHs (p<0.05). HSHs were observed to have fewer ICU admissions (2.6% vs 4.9%, p<0.05) and lower mean cost ($7,866 vs $8,708, p<0.05). There was no difference in mortality between HSHs versus LSHs for any advanced laparoscopic abdominal surgery. There was no difference in serious morbidity between HSHs versus LSHs for bariatric or hiatal hernia surgery. However, for colorectal surgery, there was lower serious morbidity at HSHs versus LSHs (2.2% vs 2.9% respectively, p<0.05).

Conclusions: High CMS star rating does not correlate with improved mortality, however, does correlate with lower serious morbidity and improved resource utilization for certain advanced laparoscopic abdominal operations. HSHs were also observed to treat fewer ethnic minorities.
Trends of Hospital Volumes and Associated Mortality of Patients Undergoing Open Pancreaticoduodenectomy in the United States: A Review of 15 years

**Authors:** Zeljka Jutric¹, Jan Grendar², Yelena Rozenfeld², Ephraim S. Tang², Pippa H. Newell², Paul D. Hansen², Ronald F. Wolf², Chet W. Hammill²

**Institutions:** ¹City of Hope National Medical Center, ²Providence Health

**Presenter:** Zeljka Jutric  
**Discussant:** Linda Wong  
**Closer:** Ronald Wolf

**Objective:** We aimed to assess the progress of centralization and associated mortality in the United States.

**Background:** The relationship between hospital volume and mortality for pancreaticoduodenectomy is well established.

**Methods:** The National Cancer Database was queried for open pancreaticoduodenectomies performed from 1998 to 2012. High-volume hospitals were defined as performing > 11 pancreaticoduodenectomies per year. A frequency analysis of cases was performed defined by hospital volume per year of surgery. Change over time was assessed using extended Mantel-Haenszel chi-square. Logistic regression using age, sex, hospital location, hospital volume, insurance status and disease stage was then performed on 30- and 90-day mortality.

**Results:** A total of 39,202 open pancreaticoduodenectomy patients were identified. In 1998, only 1.3% of hospitals were high-volume (10/783) and they performed 14% of pancreaticoduodenectomies (391/2833). In 2012, 11% of hospitals were high volume (96/865) and they performed 53% of pancreaticoduodenectomies (3901/7305). The change over time was significant for a number of hospitals and cases performed (p<0.001). The 30-day mortality was 2.7% at high-volume and 5.5% at low-volume hospitals (p<0.001). The 90-day mortality was 6% at high-volume and 10% at low-volume hospitals (p<0.001). In logistic regression, hospital volume was the most significant predictor of 30-day (OR=1.9, 95% CI: 1.7-2.2) and 90-day mortality (OR=1.7, 95% CI: 1.5-1.8). Insurance status was also predictive of 30-day (OR=1.4, 95% CI: 1.0-1.7) and 90-day mortality (OR=1.4, 95% CI: 1.1-1.7).

**Conclusion:** Despite the improvement over the past 15 years, the majority of pancreaticoduodenectomies are still performed at low-volume hospitals where the risk of mortality is doubled.
Liver Graft Assessment Following Transplantation (L-GrAFT): A Novel Score Evaluating Early Allograft Function Accurately Predicts Graft-Failure Free Survival


Institution: David Geffen School of Medicine

Presentee: Vatche Agopian
Discussant: Marc Melcher
Closer: Vatche Agopian

Objective: To develop a model allowing for individualized prediction of graft-failure after liver transplantation (LT), and compare its prognostic performance to the existing binary early allograft dysfunction (EAD) definition (bilirubin≥10 or INR≥1.6 on POD 7, or AST/ALT>2000 within 7 days) and MEAF score (Model for Early Allograft Function, INRmax3POD, ALTmax3POD, Bilirubin3POD).

Background: While EAD following LT unequivocally portends adverse graft and patient outcomes, a widely accepted classification/grading system is lacking.

Methods: Retrospective logistic regression used 10 days of post-LT AST, bilirubin, INR, and platelets to generate a risk-score that predicts 3-month graft-failure free survival following primary liver transplantation (2015 adults, median MELD 32, 2002-2015).

Results: Overall and graft-failure free survivals were 83%, 74%, 69% and 81%, 71%, 65% at 1, 3, 5-years, with 11.1% incidence of 3-month graft failure/death. Multivariate predictors of 3-month graft-failure free survival included AST, INR, bilirubin and platelet count, measures of which were used to calculate a risk score (Table). Our L-GrAFT model had an excellent C-statistic of 0.85, with significantly superior discrimination of 3-month graft-failure free survival among predicted intervals of risk compared to the EAD (c-statistic 0.68, P<0.001) and MEAF (c-statistic 0.70, P<0.001) scores (Figure).

Conclusions: We report a novel L-GrAFT score that allows for highly accurate, individualized risk-prediction of 3-month graft failure following LT that is superior to the existing EAD and MEAF scores. Multicenter validation may allow for (1) adoption of L-GrAFT as a tool predicting need for retransplantation, and (2) standardized grading of early allograft function across transplant centers.
The Impact of Therapeutic Hypothermia Used to Treat Anoxic Brain Injury after Cardiopulmonary Resuscitation (CPR) on Organ Donation Outcomes

Authors: Madhukar S. Patel¹, Charles Wright², Xiang Gao³, Maxwell Witt⁴, Mitchell Sally⁵, Tahnee Groat⁵, Megan Crutchfield⁵, Darren Malinoski⁵, ODRC Anoxic Organ Donor Study Group

Institutions: ¹Massachusetts General Hospital, ²Lifelink Foundation, ³University of Iowa, ⁴University of Michigan, ⁵VA Portland Health Care System

Presenter: Madhukar Patel
Discussant: Dennis Kim
Closer: Darren Malinoski

Objective: Determine the impact of therapeutic hypothermia (TH) prior to determination of death on organ donation outcomes.

Background: Donors after neurologic determination of death (DNDDs) that receive cardiopulmonary resuscitation (CPR) have a lower number of organs transplanted per donor (OTPD). TH is clinically used to improve neurologic outcomes in patients requiring CPR. For patients that regress and become DNDDs, the impact of TH received prior to determination of death on organ donation outcomes remains unknown.

Methods: Twenty OPOs prospectively collected data on all adult DNDDs that received CPR and had anoxia as a cause of death from 03/2013 until 12/2014. Data collected included donor demographics, treatment received prior to neurologic death, donor type, and organs transplanted. To assess graft and recipient outcomes, linkage to the Scientific Registry of Transplant Recipients (SRTR) was performed. Main outcome measures were OTPD, specific organ utilization rates, and transplant recipient outcomes.

Results: 1098 DNDDs met inclusion criteria, with 46% having received TH prior to determination of death. DNDDs with hypothermia prior to brain death had a similar number of OTPD (2.74 vs 2.67, p=0.51) and similar transplantation rates of all organs. With regards to recipients, outcomes were notable for significantly less delayed graft function (DGF) in kidney recipients of organs from donors who received TH prior to death (32% vs. 44%, p=0.02 and OR 0.75, p=0.046 after controlling for recipient risk factors).

Conclusions: TH prior to death is independently associated with a 25% decrease in DGF among kidney recipients and should be considered as a donor selection criterion.
19  Myocardial Infarction Following High-Risk Vascular Operations: Trend Analysis of Incidence and Prognostic Implications

Authors: Yen-Yi Juo1, Ramin Ebrahimi1, Boback Ziaeian1, Aditya Mantha2, Peyman Benharash1

Institutions: 1University of California - Los Angeles, 2University of California - Irvine

Presenter: Yen-Yi Juo
Discussant: Gregory Landry
Closer: Peyman Benharash

Objective: To examine the temporal trends of postoperative myocardial infarctions (MI) following high-risk vascular operations and its impact on mortality.

Background: Improvements in perioperative care, patient selection and introduction of endovascular therapies have resulted in reduced mortality following major vascular operations. Whether these changes significantly impacted postoperative MI remains to be investigated.

Methods: Retrospective cohort study of adults undergoing open aortic surgery or peripheral arterial bypasses between 2005 and 2014 at hospitals participating in National Surgical Quality Improvement Program (ACS-NSQIP). Multivariate logistic regression was used to examine association between MI and mortality.

Results: Of the 90,303 patients included for analysis, 1,802 (2.00%) experienced postoperative MI. Over the 10-year period, there was a significant decrease in the mean Revised Cardiac Risk Index (1.48 to 1.30, P-trend < .01) and proportion of emergent cases (12.8% to 9.57%, P-trend < .01). However, rates of MI (0.60% to 2.43%, P-trend < .01) and cardiac arrest (1.34% to 1.95%, P-trend = .03) increased significantly. Postoperative MI was independently associated with a 5.35-fold increase in the adjusted odds of mortality (95% CI, 4.47-6.40). Overall postoperative mortality decreased from 5.29% to 4.16% (P-trend < .01).

Conclusions: Despite an apparently lower-risk population and decreased postoperative mortality, rates of MI following high-risk vascular operations have increased. Whether this increase represents improvements in detecting postoperative MI’s deserves further investigation. Nonetheless, given its strong association with mortality and increasing incidence, myocardial infarction may represent a highly valuable target for quality improvement.
Patients with Acute Cholecystitis Should be Admitted to a Surgical Service

Authors: Ning Lu, Walter L. Biffl, Joshuel Pahang, Guangxiang Zhang, Linda L. Wong

Institution: Hawaii Residency Program

Presenter: Ning Lu
Discussant: Lydia Lam
Closer: Linda Wong

Objective: To compare length of stay (LOS) and resource utilization among patients with cholecystitis admitted to surgical versus nonsurgical services.

Background: Every day a patient with cholecystitis waits for surgery, costs accumulate without benefit to the patient. One factor that may contribute to delayed surgery is the admitting service. In bowel obstruction and biliary pancreatitis, patients receive more expedient surgical care when admitted to surgical services. This has not been studied in acute cholecystitis.

Methods: Clinical and cost data were analyzed for 294 patients with primary diagnosis of cholecystitis who underwent laparoscopic cholecystectomy in our hospital, from 07/2013-09/2015. Patient risk level was assigned with the HHS-HCC Risk Adjustment Model; 195 lower-risk patients (score 1 or 2) were included. Continuous data were compared with Mann-Whitney U test and categorical data with chi-square test (*=p<.05).

Results: Median LOS was shorter among surgical (n=101) versus nonsurgical (n=94) patients (1.4 vs 2.6 days*). Both time from admission to surgery (0.4 vs 0.8 days*) and from surgery to discharge (0.8 vs 1.1 days*) were shorter. Diagnostic imaging was common, but surgical service patients had fewer CT (37% vs 52%*) and MRI (4% vs 15%*) studies. Cholangiography (30-28%) and ERCP (3-5%) rates were similar. Surgical service patients had 39% lower median total costs ($7595 vs $12460*).

Conclusions: Nonsurgical admissions of patients with cholecystitis are common, even among lower-risk patients. Routine admission to the surgical service should decrease LOS, resource utilization and costs. Limiting diagnostic imaging beyond ultrasonography could lower costs further.
21 Safety Net Hospitals Manage Advanced Appendicitis with Similar Outcomes and Costs

Authors: Roy P. Won¹, Scott Friedlander¹, Yang Lu¹, Steven L. Lee¹,²

Institutions: ¹Harbor-UCLA Medical Center, ²University of California – Los Angeles

Presenter: Roy Won
Discussant: Shin Hirose
Closer: Steven Lee

Objective: To evaluate the effects of safety-net burden on the treatment and outcome following appendectomy.

Background: Safety-net hospitals serve vulnerable populations with limited resources. Elective operations performed at safety-net hospitals have been associated with inferior outcomes and higher costs. It is unclear whether safety-net burden has a similar effect on common emergency operations.

Methods: 349 hospitals in the State Inpatient Database that performed 274,405 non- incidental appendectomies from 2005-2011 were stratified by safety-net burden. Low-burden hospitals had the lowest quartile of Medicaid/uninsured (0-14%), medium-burden hospitals had the middle two quartiles (15-41%), and high-burden hospitals had the highest quartile (>42%). Hierarchical and multivariate analysis were performed with primary outcomes including rates of perforation, laparoscopy, morbidity, length of stay, and cost.

Results: High-burden hospitals treated a larger proportion of minorities (p<0.01) and patients with perforated appendicitis (p<0.01). High-burden hospitals were less likely to use laparoscopy (p<0.01). There were no differences in morbidity, length of stay, or cost. Multivariable regression analysis confirmed high-burden hospitals were more likely to treat perforated appendicitis (p<0.05) and less likely to use laparoscopy (p<0.01), while achieving similar complication rates. Multivariable analysis also confirmed high-burden hospitals have similar costs, despite being associated with longer lengths of stay (p<0.01).

Conclusions: Safety-net hospitals shoulder a disproportionate share of advanced appendicitis while falling behind in the use of laparoscopy. Nonetheless, safety-net hospitals treat this common surgical emergency with similar morbidity and cost. Additional research is needed to evaluate how to achieve these results in order to improve all surgical outcomes at under-resourced hospitals.
Patient Frailty is associated with Increased Morbidity after Common Ambulatory General Surgery Operations

Authors: Carolyn D. Seib, Holly Rochefort, Katherine Chomsky-Higgins, Jessica E. Gosnell, Insoo Suh, Wen T. Shen, Quan-Yang Duh, Emily Finlayson

Institution: University of California - San Francisco

Presenter: Caroline Seib
Discussant: Clifford Ko
Closer: Wen Shen

Objective: To determine the association between frailty and perioperative morbidity in patients undergoing ambulatory surgery.

Background: Frailty is a measure of decreased physiologic reserve that is a predictor of morbidity and mortality in major elective and emergent general surgery operations, independent of age and comorbidity. The impact of frailty on outcomes in ambulatory general surgery operations has not been established.

Methods: Retrospective cohort study of patients > 40 years who underwent ambulatory and 23-hour stay hernia, breast, thyroid and parathyroid operations from the 2007 - 2010 ACS NSQIP PUF. The association between NSQIP frailty index (FI) and perioperative morbidity was determined via multivariate logistic regression with random effects modeling to control for clustering within CPT code.

Results: We identified 140,828 patients >40 who underwent ambulatory hernia, breast, thyroid and parathyroid operations. 2,457 (1.7%) and 971 (0.7%) patients experienced any or serious perioperative complications, respectively. Increasing FI was associated with a step-wise increase in the incidence of complications. An FI >=0.18 was associated with odds ratios of 1.75 (95% CI 1.59 - 1.93, p < 0.0001) and 2.08 (95% CI 1.79 - 2.41, p < 0.0001) for any and serious complications in multivariate analysis adjusting for age, race, anesthesia type, tobacco use, renal failure, steroid use, and clustering by CPT code.

Conclusions: Frailty is a significant predictor of perioperative morbidity in common ambulatory general surgery operations, independent of age, type of anesthesia, and other comorbidities. Surgeons should consider frailty when counseling and selecting patients for elective ambulatory operations.
23 Entrustable Professional Activities for Assessment of Surgery Resident Competency

Authors: Justin P. Wagner, Catherine E. Lewis, Areti Tillou, Vatche G. Agopian, Chi Quach, Timothy R. Donahue, O. Joe Hines

Institution: David Geffen School of Medicine

Presenter: Justin Wagner
Discussant: Marc Melcher
Closer: O. Joe Hines

Objective: To establish the postgraduate year (PGY) when faculty grant autonomy in Entrustable Professional Activities (EPAs), and to compare with resident expectations.

Background: EPAs are units of practice faculty entrust to trainees who demonstrate competence. The American Board of Surgery and Accreditation Council for Graduate Medical Education are moving toward EPA-based performance assessments. Limited research exists to establish EPA benchmarks or evaluate differences in faculty and resident expectations.

Methods: Survey study of 127 faculty members and 49 residents at an academic medical center. Surveys included ratings of observed and expected resident performance in 5 professional and 5 operative EPAs. Ratings followed a 5-point Likert scale, with autonomy >4. Differences in mean faculty and resident ratings (Δ) were compared by T-test.

Results: Response rate was 51% (90/176), including 51 faculty members (40%) and 49 residents (80%). Most respondents expected autonomy by PGY4-level in inguinal hernia repair (IH), laparoscopic appendectomy, and laparoscopic cholecystectomy. For exploratory laparotomy (EL) and right hemicolecctiony (RH), autonomy was expected at PGY4-level by most faculty and at PGY5-level by most residents. Residents’ expectations are higher in all professional EPAs (Δ>10%, p<.01). Expectations did not differ in operative EPAs (Δ<4%, p>.08). Faculty rated PGY3-PGY5 performance below expectations in IH (Δ>8%, p<.05), EL (Δ>8%, p<.03), and RH (Δ>10%, p<.02). Residents met their own expectations in all EPAs.

Conclusions: Most faculty expect autonomy by PGY4-level, but believe residents underperform in several domains. Training programs should adopt EPA evaluation systems with explicit expectations of resident competency.
Distinct Risk Factors for Superficial Versus Organ-Space Surgical Site Infections after Pancreas Surgery

Authors: Irmina A. Elliott¹, Carmen K. Chan¹, Tara A. Russell¹, Amanda M. Dann¹, Jennifer L. Williams², Lauren M. Damato¹, Hallie Chung¹, Mark D. Girgis¹, O. Joe Hines¹, Howard A. Reber¹, Timothy R. Donahue¹

Institutions: ¹University of California - Los Angeles, ²Harbor-UCLA

Presenter: Irmina Elliott
Discussant: Thomas Biehl
Closer: Timothy Donahue

Objective: To stratify superficial and organ-space surgical site infections (SSIs) after pancreatectomy and investigate their modifiable risk factors (RFs).

Background: SSIs rates are increasingly used as a quality metric, and a trial investigating piperacillin-tazobactam versus cephalosporin perioperative prophylaxis has been proposed. However, RFs for SSI in pancreas surgery remain undefined. NSQIP codes three SSI types: superficial, deep-incisional, organ-space, but only reports one overall SSI rate.

Methods: NSQIP-HPB data were obtained for 201 patients undergoing pancreatectomy from July 2013-June 2015 at our institution. Patients routinely received piperacillin-tazobactam perioperatively. Univariate and multivariate analyses were performed to assess RFs and outcomes.

Results: The overall SSI rate was 28.9%; superficial, deep-incisional, and organ-space SSI rates were 13.9, 4.0, and 11.9%. Only four patients (2%) had concurrent superficial and organ-space SSI. Independent RFs for superficial SSI were preoperative biliary stenting and immunosuppressive corticosteroids [odds-ratio(OR)=4.1, p=0.042; OR=24.8, p=0.007], while soft gland texture was the only RF for organ-space SSI [OR=5.11, p=0.008]. Relatedly, postoperative pancreatic fistula was highly associated with organ-space [OR=35.2, p<0.001], but not superficial SSI. Smoking, diabetes, albumin, preoperative chemotherapy, histology, or Whipple versus distal resection were not predictive of SSI. Organ-space, but not superficial SSI, was associated with increased odds of sepsis and prolonged length-of-stay [OR=10.0, p<0.001; OR=2.9, p=0.015].

Conclusions: Preoperative biliary stenting and steroids increase superficial SSI, even in patients receiving piperacillin-tazobactam. Extended perioperative antibiotics should be considered in these patients. Organ-space SSIs appear related to pancreatic fistulae, which are not modifiable. Reporting these as a single, “overall” SSI rate may be misleading.
25  Endoscopic Grading of Rectal Mucosa Is Predictive of Leak in Stapled Anastomoses

Authors: Sarath Sujatha-Bhaskar, Mark Hanna, Mehraneh D. Jafari, Joseph C. Carmichael, Steven Mills, Michael J. Stamos, Alessio Pigazzi

Institutions: University of California – Irvine

Presenter: Sarath Sujatha-Bhaskar
Discussant: David DeHaas, Jr.
Closer: Ninh Nguyen

Objective: Validating a visual endoscopic grading scale as a predictor of postoperative leak in patients undergoing rectal anastomosis (RA)

Background: Anastomotic leak is a substantial complication after RA. Intraoperative white light endoscopy (WLE) may predict postoperative leak by employing a visual grading scale to judge the appearance of the peri-anastomotic mucosa.

Methods: Grade 1 is defined as circumferentially normal appearing mucosa, Grade 2 as mucosal ischemia/congestion involving < 30% of ½ the staple line. Grade 3 consists of mucosal irregularity involving >30% of ½ the staple line or any degree of bilateral anastomotic involvement. Over a three year period, review of patient undergoing elective open, laparoscopic, and robotic procedures was performed. Included patients underwent RA with WLE and visual grading. Grade 3 patients underwent revision with reclassification as Grade 1. Subjects were grouped by grade with comparison of characteristics and outcomes.

Results: 106 patients were reviewed; 86% of patients were Grade 1, 10% Grade 2, and 4% Grade 3. In Grades 1 and 2, colorectal malignancy was the primary indication (61.5%, 70%), and low anterior resection was the most common procedure (57.3%, 70%). Comorbidity profiles were equivalent in both groups. Of Grade 1 patients, 9.78% developed anastomotic leak while 40% of Grade 2 patients developed leak (p < 0.01). Using logistic regression, classification as Grade 2 was substantiated as a predictor of anastomotic leak (OR 6.15, p=0.013).

Conclusions: WLE grading of RA is a valuable intraoperative tool; identification of Grade 2 and Grade 3 anastomoses should raise suspicion, provoking discussion for revision.
Impact of Primary Tumor Site on Response to Biologic Therapy in Patients with Stage IV Colorectal Cancer: A Population-Based Study

Authors: Laurel A. Guthrie, Mayada Aljehani, John W. Morgan, Sharon S. Lum, Mark E. Reeves, Carlos Garberoglio, Maheswari Senthil

Institution: Loma Linda University

Presenter: Laurel Guthrie
Discussant: Shyamali Singhal
Closer: Maheswari Senthil

Objective: To evaluate the impact of primary tumor site on mortality in a large and diverse population-based dataset among patients receiving systemic chemotherapy (SC) and biologic therapy (BT) for Stage IV colorectal cancer (mCRC).

Background: Biologic therapy is often used in the treatment of mCRC. Recent investigations suggest that primary tumor location (left vs right) in mCRC impacts response to BT (bevacizumab or cetuximab).

Design/Methods: We performed a retrospective review of statewide California Cancer Registry data (2004-2014) among mCRC adenocarcinoma patients age 40-85 that received SC+BT. A propensity score was used to preclude confounding by diagnosis year, age, and socioeconomic status for adjusted mortality hazard ratios (HR).

Results: Between 2004-2014, 4,793 mCRC patients received SC+BT. Stage IV right-sided colon cancer (mRCC) patients treated with bevacizumab had higher mortality than left-sided colorectal cancer (mLCRC) (HR=1.32;CI=1.27-1.37;p<0.0001). Mucinous and signet ring histology were associated with higher mortality. mRCC patients treated with SC+cetuximab had two-fold higher mortality compared to mLCRC treated with SC+bevacizumab (HR=2.00;CI=1.77-2.26;p<0.0001). This difference persisted for 170 wildtype KRAS patients treated with SC+cetuximab (2010-2014) (mRCC vs mLCRC: HR=3.69;CI=2.27-6.00;p<0.0001). Among 12,134 mCRC patients treated with either SC or SC+BT (2004-2014), there was no difference in mortality in mRCC patients. However, mLCRC patients treated with SC+BT had 14% lower mortality compared to SC alone.

Conclusions: Primary tumor site may have a significant impact on response to BT in mCRC and should be taken into account when treating patients with BT. Investigations are ongoing to understand the biologic differences between right and left-sided colorectal cancers.
E-Poster Sessions A

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

SESSION A – Moderators Kenji Inaba and Jessica O’Connell

A01 Risk Factors of 30-Day Readmissions from the Pediatric National Surgical Quality Improvement Program
Jamie Anderson

A02 10-Year Results of Roux-en-Y Gastric Bypass (RYGB) at a Single Veterans Affairs (VA) Medical Center: Weight Loss, Anemia, and Medication Requirements
Gao Chen

A03 The Additive Benefit of Oral Antibiotics to Mechanical Bowel Preparation in Colonic Diverticulitis; ACS-NSQIP Study
Reza Fazl Alizad

A04 Accuracy of Upper Extremity Ultrasound Vein and Artery Measurements by Surgery Residents As Compared to Vascular Attendings: A Prospective Study
Kelsey Gray

A05 Predictive Factors for Mortality After Colectomies Performed for Ischemic Colitis
Monica Jain

A06 New Prey for the Linx®: Standard Versus Expanded Indications for Esophageal Magnetic Sphincter Augmentation for Reflux Disease
John Kuckelman

A07 Outpatient Laparoscopic Appendectomy: Safe in a Safety Net Hospital?
David Rosen
E-Poster Sessions A

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

SESSION A – Moderators Kenji Inaba and Jessica O’Connell

A08 **Sigmoidectomy and Primary Anastomosis without Fecal Diversion is A Viable Option in Emergent Perforated Diverticulitis: ACS NSQIP Study**
Sarath Sujatha-Bhaskar

A09 **Longitudinal Assessment of Paraesophageal Hernia Repair in the United States Demonstrates Superior Outcomes with Minimally Invasive Surgical Approaches**
Patrick McLaren

A10 **Opiates May Be Avoided for the Majority of Low-Risk Outpatient Procedures**
Shirin Towfigh

A11 **Anastomotic Leak after Open, Laparoscopic, and Robotic Colectomy: A 3-Year Review of the NSQIP Database**
Christina Koh

A12 **Effect of Cirrhosis on Outcomes following Emergent Repair of Abdominal Wall Hernias**
Eric Pillado

A13 **A Paradigm Shift in General Surgery: Defining a New Reality in the Era of Minimally Invasive Surgery**
Alicia Gaidry
A01  Risk Factors of 30-Day Readmissions from the Pediatric National Surgical Quality Improvement Program

Authors: Jamie E. Anderson, Rebecca A. Stark, Payam Saadai, Diana L. Farmer, Shinjiro Hirose

Institution: University of California – Davis

Presenter: Jamie Anderson

Objective: To identify surgical procedures and patient factors associated with increased rates of readmission from the American College of Surgeons Pediatric National Surgical Quality Improvement Program (NSQIP-P) database.

Background: Efforts to create dedicated pediatric surgical centers require rigorous standards to ensure quality across surgical specialties. However, risk factors for readmission after pediatric surgery are not well defined.

Methods: The NSQIP-P Participant Use Data File from 2012-2014 was analyzed to identify procedures with the highest 30-day post-operative readmission rates and patient risk factors for readmission.

Results: Of 183,233 patients in NSQIP-P from 2012-2014, 8,838 patients (4.8%) were readmitted within 30 days, with only 4,682 (53.0%) related to the operation. Surgical site infections were the most common reasons for related readmissions. Readmission rates were higher in pediatric surgery and neurosurgery compared to urology, plastic, otolaryngology, orthopedic, and cardiovascular surgery. Operations with the highest readmission rates included retroperitoneal exploration, hepatic resections, and thoracic operations. On multivariate logistic regression, predictors of readmission included patients undergoing neurosurgical procedures (vs. pediatric general surgery: OR 2.58 p<0.001), female gender (OR 1.23, p=0.007), malignancy (OR 4.24, p<0.001), laparoscopy (OR 1.52, p<0.001), higher ASA classification (ASA class 2-4 vs. 1: OR 2.00-3.54, p<0.001), and patients with cerebral palsy (OR 3.84, p<0.001).

Conclusions: To develop high-quality pediatric surgical centers, it is important to identify risk factors for readmission. This study supports current quality initiatives aimed at reducing surgical site infections. It also identifies the need for interventions targeted at readmissions unrelated to the operation, especially for this patient population.
A02 10-Year Results of Roux-en-Y Gastric Bypass (RYGB) at a Single Veterans Affairs (VA) Medical Center: Weight Loss, Anemia, and Medication Requirements

Authors: Gao Chen, Eric Kubat, Dan Eisenberg

Institution: Palo Alto VA

Presenter: Gao Chen

Objective: Study long-term outcomes after RYGB in the VA.

Background: More than 1/3 of Veterans are obese. RYGB is a proven, durable treatment of morbid obesity and its comorbidities. There are few reports of VA 10-year outcomes.

Methods: Data were abstracted from the electronic health record of patients who underwent RYGB from 2002 to 2006 at a single VA Medical Center. Groups were compared using Fisher’s exact and Student’s t-test.

Results: Of 90 patients with ≥10 years since RYGB (range 10-14.1 years), 10 patients were lost to follow-up and 13 died within 10 years of surgery. Of the remaining 67 patients, mean age was 50.3 years (range 28-65), 76% were men. Weight Loss. The average preoperative body mass index (BMI) was 46 kg/m² (30.4-66.7 kg/m²); at 10 years it was 33.5 kg/m² (ΔBMI 12.5 kg/m²). The % total weight loss was 27.7%. Anemia. The rate of anemia increased after RYGB from 20.9% preoperatively to 53.7% at 10 years postoperatively (p<0.001). Nearly all patients had normocytic anemia. Hypertension. Most patients had hypertension (73.1%) preoperatively, and at 10 years 25.5% were medication free. Diabetes. Of preoperative patients, 50.7% had diabetes. At 10 years, 79.4% had decreased medication requirements; 82% of diabetics taking oral hypoglycemic medications preoperatively were medication-free, compared to 36.4% of those taking insulin preoperatively (p=0.085). Average HgbA1c decreased from 7.2% to 6.1% (p<0.001).

Conclusions: Veterans undergoing RYGB are at risk for anemia with long term follow up. Durable weight loss and decreased medication requirements continue at ≥10 years after surgery.
**E-Poster Sessions A**

*All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.*

**A03**  **The Additive Benefit of Oral Antibiotics to Mechanical Bowel Preparation in Colonic Diverticulitis; ACS-NSQIP Study**

**Authors:** Reza Fazl Alizadeh, Sarath Sujatha-Bhaskar, Mehraneh D. Jafari, Joseph C. Carmichael, Alessio Pigazzi, Michael J. Stamos

**Institution:** University of California – Irvine

**Presenter:** Reza Fazl Alizadeh

**Objective:** Stratification of patients with colonic diverticulitis (CD) based on preoperative bowel regimen with subsequent analysis of postoperative outcomes following elective colectomy.

**Background:** The role of bowel preparation remains controversial. We sought to investigate the value of adding oral antibiotic preparation (OAP) to mechanical bowel preparation (MBP) in terms of postoperative outcomes in CD patients who underwent elective colectomy.

**Methods:** The National Surgical Quality Improvement Program (NSQIP) database targeted colectomy files were used to examine the clinical data of patients with CD undergoing elective colectomy from 2012 to 2014. Patients were stratified into the following groups: no bowel preparation, MBP alone, and MBP combined with OAP. Multivariate regression analysis was performed with no bowel preparation utilized as baseline.

**Results:** 8630 patients with CD underwent elective colectomy. 34% of patients received no BP, 36% received MBP alone, and 30% received combined preparation. Preoperative comorbidity profiles were similar among all groups. In comparison to the baseline cohort of no preparation, patients with MBP alone demonstrated no improvement in 30-day mortality (0.1% vs. 0.3%, P=0.25) and overall morbidity (16.3% vs. 17.6%, P=0.39) with similar rates of anastomotic leak and surgical site infection. However, adding OAP to MBP significantly reduced surgical site infections (7.4% vs. 11.3%, P<0.0001) and overall morbidity (13.6% vs. 17.6%, P=0.001) compared to the baseline cohort.

**Conclusions:** In elective colectomy for CD, an additive benefit was confirmed with introduction of OAP to MBP. This was demonstrated through improvement in postoperative surgical site infection rates and overall morbidity, validating the importance of combined bowel preparation.
Accuracy of Upper Extremity Ultrasound Vein and Artery Measurements by Surgery Residents As Compared to Vascular Attendings: A Prospective Study

Authors: Kelsey Gray, Jerry Kim, Gabriel Gonzalez, Abraham Korn, Timothy Ryan, Matthew Koopmann, Amy Kaji, Christian de Virgilio

Institution: Harbor-UCLA

Presenter: Kelsey Gray

Objective: To determine if surgical residents can be trained to perform US vein and artery measurements.

Background: To guide the creation of arteriovenous fistulas (AVF) for hemodialysis, pre-operative upper extremity ultrasound (US) vein and artery evaluation by radiologists is recommended. However, this can significantly delay AVF creation for patients already on dialysis.

Design/Methods: This is a prospective study of General Surgery residents at a single institution over a three-week period. Each resident was provided a didactic and practical session on US measurements prior to performing US exams on 2 healthy standardized subjects, taking 6 measurements on each arm. Two Registered Physician in Vascular Interpretation (RPVI) certified attending surgeons performed the same US exam on the two subjects at one-week intervals over the three weeks.

Main Outcomes and Measures: Resident measurements compared to the attending standard were evaluated using Spearman Correlation and their accuracy assessed using Bland Altman Plots.

Results: 22 residents performed 41 US studies (492 measurements). Two attending surgeons performed 7 US studies (48 measurements). Resident measurements strongly correlated to both attending 1 and 2 across all dates for both test subjects (Subject 1: 0.78-0.98 p<0.0003 and 0.81-0.98 p<0.0003, Subject 2: 0.78-0.99 p<0.0003 and 0.91-0.99 p<0.0003). Additionally, Bland-Altman Plots demonstrated resident accuracy within 10% homogenous error for both subjects across all dates.

Conclusions: Surgical residents can be taught to accurately perform upper extremity US arterial and venous diameter measurements. This may allow some patients to bypass formal US, decreasing time from initial presentation to AVF creation.
A05  Predictive Factors for Mortality After Colectomies Performed for Ischemic Colitis

Authors: Monica Jain, Azaria V. Lewis, Galinos Barmparas, Nicolas Melo, Matthew B. Bloom, Rex T. Chung, Eric J. Ley, Daniel R. Margulies, Rodrigo F. Alban

Institution: Cedars-Sinai Medical Center

Presenter: Monica Jain

Objective: We sought to examine risk factors for increased mortality in patients undergoing colectomies for ischemic colitis using a large national database.

Background: Ischemic colitis is a rare but devastating surgical emergency that is associated with high morbidity and mortality, particularly in the elderly.

Methods: The American College of Surgeons National Surgical Quality Improvement Program database was queried from 2010-2014 to identify cases of ischemic colitis treated with colectomies. Patient demographics, inpatient characteristics, and 30-day outcomes were assessed. A regression analysis was used to identify factors associated with increased risk of mortality.

Results: A total of 5,051 patients underwent colectomies for ischemic colitis during the study period. The overall mortality rate was 17.5%. The majority of colectomies were emergencies (76.3%), and mortality was significantly higher in emergent vs. elective cases (20.4% vs. 8% respectively, p&lt0.001). Time from admission to colectomy was longer in non-survivors when compared to survivors (3.8±9.7 vs. 2.3±5 days respectively, p&lt0.001). The most common post-operative complications included sepsis (21%), pneumonia (12.4%), and acute renal failure (5.4%). Multivariate regression analysis revealed that emergent operation, pre-operative need for renal dialysis, pre-operative blood transfusions, age greater than 65, coagulopathy, steroid use, and delay in surgical intervention from time of admission were strong independent predictors of mortality.

Conclusions: Operative management of ischemic colitis carries a significant mortality risk, particularly in emergent cases. Besides common surgical risk factors, time to operative intervention was an independent risk factor for mortality. Efforts aimed at earlier recognition and prompt intervention in this condition is warranted.
**Objective:** To describe outcomes with Linx magnetic sphincter augmentation (MSA), and compare outcomes based on standard versus expanded criteria.

**Background:** The Linx device has proven safe and effective for appropriate candidates with GERD. Standard indications include GERD with normal motility, BMI <35, no prior foregut surgery, and no or a small (<3cm) hiatal defect. However, many are offering Linx to candidates outside of these criteria.

**Methods:** Retrospective review of Linx procedures at a tertiary center over 1-year. Candidates had demonstrated GERD and normal esophageal motility. Patients were categorized as standard indications (SI) or expanded indications (EI) including large hiatal hernia, BMI>35, or prior foregut surgery. Standard demographics and outcomes were analyzed, including pre & postop GERD quality of life (G-QOL) scores.

**Results:** Twenty-six patients underwent Linx MSA, with 100% technical success. All operations were completed laparoscopically and no patient required conversion or fundoplication. Overall, there was an average 78% improvement in G-QOL scores, with pre and post scores of 42 vs 9 (p<0.01). There were no significant outcome differences between the SI and EI groups (Figure). G-QOL scores improved from 39 to 7 for the SI group and 44 to 11 for the EI group (both p<0.05). All patients (100%) had improved or resolved GERD with 92% off PPI therapy, and no difference in success between SI or EI groups.

**Conclusions:** Linx MSA offers a safe and highly effective new option for patient with GERD. This procedure appears equally effective in patients with larger hiatal hernias or other expanded indications.
A07  Outpatient Laparoscopic Appendectomy: Safe in a Safety Net Hospital?

**Authors:** David R. Rosen, Kenji Inaba, Paul J. Oh, Adam C. Gutierrez, Aaron M. Strumwasser, Subarna Biswas, Melody Cala, Glenn T. Ault

**Institution:** University of Southern California - Los Angeles

**Presenter:** David Rosen

**Objective:** To confirm safety of outpatient appendectomy.

**Background:** Outpatient laparoscopic appendectomy is established as a treatment option for acute, uncomplicated appendicitis. This was a prospective validation in a large, urban, public safety net hospital.

**Methods:** From 2014-2016, all patients undergoing laparoscopic appendectomy for acute, uncomplicated appendicitis were enrolled in a prospective observational trial. The first year documented standard baseline perioperative practice (control group). An outpatient appendectomy protocol was then introduced. Inclusion criteria required intraoperative confirmation of uncomplicated appendicitis and strict discharge criteria (including physician assessment prior to discharge). Data collection then continued for one year (outpatient group).

**Results:** The study enrolled 351 patients (178 control, 173 outpatient). Of the 173 candidates for outpatient appendectomy, 113 went home. Exclusions were from surgeon discretion (intraoperative findings/medical comorbidities) and lack of a ride or home. Outpatient group had shorter operative time (69 vs. 83 minutes, \(p<0.001\)), longer time in recovery (242 vs. 141 minutes, \(p<0.001\)), fewer nursing transitions (4 vs. 5, \(p<0.001\)), and shorter postoperative length of stay (9 vs. 19 hours, \(p<0.001\)). There was no difference in complications, emergency room visits, or readmissions. In the outpatient group, none of the patients sent home from recovery had postoperative complications or required readmission. Satisfaction surveys revealed no change in satisfaction with either protocol.

**Conclusions:** Outpatient appendectomy is safe in a public hospital and results in shorter hospital length of stay and thus decreased health care costs. Strict criteria for discharge are important to identify patients who should be admitted for observation.
Sigmoidectomy and Primary Anastomosis without Fecal Diversion is A Viable Option in Emergent Perforated Diverticulitis: ACS NSQIP Study

Authors: Sarath Sujatha-Bhaskar, Reza Fazl Alizadeh, Mehraneh D. Jafari, Joseph C. Carmichael, Michael J. Stamos, Alessio Pigazzi

Institution: University of California - Irvine

Presenter: Sarath Sujatha-Bhaskar

Objective: Comparing 30-day outcomes between Hartmann’s procedure (HP) and Sigmoidectomy with primary anastomosis without fecal diversion (SPA). Determining patient characteristics appropriate for utilizing SPA.

Background: Emergent surgical management of perforated diverticulitis can be challenging. While HP has traditionally been preferred in this setting, SPA avoids ostomy creation and has become an emerging trend.

Design/Methods: The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) targeted colectomy database from 2012-2014 was used to examine clinical data from patients with emergent perforated diverticulitis who underwent either HP or SPA. Multivariate regression was utilized to analyze preoperative characteristics and determine risk-adjusted outcomes.

Results: Of the 1,137 patients who underwent an emergent operation for perforated diverticulitis, 85% of patients underwent HP while 15% underwent SPA. Median age was 61 for HP and 58 for SPA. Patients undergoing HP demonstrated elevated frequencies of steroid use (15.7% vs 6.2%, p <0.01) and ASA score > 2 (67% vs 55%, p=0.04). Serious morbidity rates were similar (HP 45.1% vs SPA 35.6%, p=0.97). No difference was present between HP and SPA for rates of stump or anastomotic leak (1.3% vs 1.7%, p=0.45), organ-space infection (7.5% vs 7.9%, p=0.60), and 30-day mortality (5.7% vs 4.5%, p=0.40). Length of stay was longer (12 vs 10 days, p < 0.01) with HP. Unplanned readmission and unplanned reoperation rates were similar.

Conclusions: SPA is a feasible alternative in a select group of younger patients with lower ASA scores and reduced rates of steroid use, demonstrating equivalent morbidity and mortality rates as HP.
A09  Longitudinal Assessment of Paraesophageal Hernia Repair in the United States Demonstrates Superior Outcomes with Minimally Invasive Surgical Approaches

Authors: Patrick J. McLaren, Kyle D. Hart, John G. Hunter, James P. Dolan

Institution: Oregon Health and Science University

Presenter: Patrick McLaren

Objective: To identify national trends and outcomes for minimally invasive surgical (MIS) management of paraesophageal hernias (PEH).

Background: A number of different surgical approaches have been utilized in the treatment of PEH. To date, there have been few studies that have examined longitudinal trends in surgical approach on a national level.

Methods: We performed a retrospective review of inpatients admitted for PEH repair from the Nationwide Inpatient Sample between 2002 and 2012. The proportion of PEH repairs performed via MIS and open approaches was examined over time. Complications were identified by secondary diagnosis codes and sub-classified into wound, bleeding, urinary, septic, thromboembolic, respiratory, cardiac, and intra-operative complications. Multivariable logistic regression models were used to compare complication rates and mortality between MIS and open surgical approaches.

Results: 97,393 PEH repairs were extracted for analysis. Between 2002 and 2012 the proportion of PEH repairs performed via MIS approach increased from 9.8% to 79.6% (OR per year: 1.66, 95%CI:1.61-1.71, p<0.001). This trend was associated with decreased in-hospital mortality (3.5% to 1.2%, p<0.001) and decreased rates of any complication (29.8% to 20.6%, p<0.001). The MIS approach demonstrated significantly decreased wound complications, bleeding complications, urinary complications, septic complications, respiratory complications, cardiac complications, and decreased rates of intra-operative injury (p<0.01). Interestingly, there was no difference in thromboembolic complications between open and MIS approaches (p=0.12).

Conclusions: Between 2002 and 2012, MIS repair became the most common approach for the treatment of PEH. This trend in surgical approach has demonstrated significantly improved outcomes as compared to open surgery.
A10  Opiates May Be Avoided for the Majority of Low-Risk Outpatient Procedures

Authors: Rachel Dbeis¹, Shirin Towfigh²

Institutions: ¹Royal Devon and Exeter Hospital, ²Beverly Hills Hernia Center

Presenter: Shirin Towfigh

Objective: Evaluate the success of non-opiate regimen for acute pain control after outpatient hernia surgery.

Background: Surgeons prescribe opiates for acute pain, even for low-risk outpatient procedures. Meanwhile, opiate addiction is on the rise.

Methods: Patients who underwent outpatient hernia surgery were evaluated for any opiate use vs no opiate use. Data captured from a hernia database and confirmed upon follow-up included: sex, age, BMI, pre-operative and post-operative pain scores, pre-operative and post-operative pain regimen. Analysis was with student’s t-test and chi-square.

Results: In 6 months, 59 patients underwent outpatient hernia surgery. All were offered opiate and non-opiate regimens postoperatively. Thirty-three (56%) took at least one opiate pill postoperatively (“opiate group”); 26 (44%) did not take any (“non-opiate group”). Non-opiate regimens included anti-inflammatories and/or homeopathic supplements. No significant differences were noted between the two groups for sex, age, BMI, and pre-operative pain score (p>0.05). Patients with pre-operative opiate use (11, 19%) were more likely to be in the opiate group (10, 91%, p< 0.01). Of the 48 pre-operatively opiate-naïve patients, 25 (52%) fell in the non-opiate group. The non-opiate group had a significant reduction in postoperative pain (Δ2.40, p=0.002) whereas the opiate group did not (Δ1.24, p=0.073). The non-opiate group also had lower postoperative pain score than the opiate group (1.31/10 vs 2.91/10, p=0.04).

Conclusions: Anti-inflammatories and homeopathic supplements significantly improve acute pain after hernia surgery for the majority of patients, especially if they were opiate-naïve preoperatively. Opiate prescriptions should be used judiciously for acute pain after low-risk outpatient procedures.
A11  Anastomotic Leak after Open, Laparoscopic, and Robotic Colectomy: A 3-Year Review of the NSQIP Database

Authors: Christina Y. Koh, Colette S. Inaba, Sarath Sujatha-Bhaskar, Michael J. Phelan, Mehraneh Dorna Jafari, Joseph Carmichael, Michael Stamos, Alessio Pigazzi

Institution: University of California - Irvine

Presenter: Christina Koh

Objective: To assess the risk of anastomotic leak in open, laparoscopic, and robotic colectomy and evaluate associated outcomes.

Background: Robotic surgery has been increasing in popularity in colorectal surgery. There have not been any large database studies comparing the risk of anastomotic leak in robotic colectomy versus open or laparoscopic colectomy.

Methods: The 2012-2014 NSQIP targeted colectomy database was used to look at patients undergoing colectomy. Patients were stratified by surgical approach (open, laparoscopic, or robotic) and by urgency of operative intervention (elective versus emergent). Patient characteristics and co-morbidities were compared between surgical groups. Univariate and bivariate analysis was performed to assess the risk of anastomotic leak based on surgical approach, and primary outcomes were compared.

Results: 52,884 elective colectomies were performed. The proportion of laparoscopic colectomy cases increased annually (62.7%, 63.4%, 64.5% respectively), while open cases decreased (37.3%, 33%, 30.5% respectively). The rate of anastomotic leak was stable throughout the 3-year period (3.6%, 3.72%, 3.36% respectively). In elective cases, open colectomy was shown to have a higher rate of anastomotic leak (4.4%) compared to laparoscopic (2.8%) and robotic (3.3%) colectomy, p<0.0001 and p=0.027 respectively. There was no difference in anastomotic leak between laparoscopic and robotic cases (p=0.373). In emergent cases there was no significant difference in anastomotic leak, morbidity, or mortality between open and laparoscopic cases.

Conclusions: Laparoscopic and robotic colectomy have similar risk of anastomotic leak, and equal morbidity and mortality. Open colectomy has a higher risk of anastomotic leak when compared to both laparoscopic and robotic colectomy.
A12  Effect of Cirrhosis on Outcomes following Emergent Repair of Abdominal Wall Hernias

Authors: Matthew Coates, Eric Pillado, Jin Kim, Richard Vasak, David Plurad, Brant Putnam, Dennis Y. Kim

Institution: Harbor-UCLA

Presenter: Eric Pillado

Importance: Emergent repair of abdominal wall hernias is associated with significant morbidity. The presence of chronic liver disease, particularly when accompanied by ascites, may further complicate attempts at successful management.

Objective: To determine the effect of cirrhosis on outcomes in patients undergoing emergent repair of abdominal wall hernias.

Design: A 3-year retrospective case-control study.

Setting: University-affiliated County hospital.

Participants: Adult patients undergoing repair of complicated groin and ventral hernias.

Main Outcome Measures: Surgical site infection (SSI), recurrence, and 30-day mortality.

Results: Of 245 patients, 27 patients (11%) presented with cirrhosis. The median admission Model for End-Stage Liver Disease (MELD) score was 16 (interquartile range, 12 - 20) and 69% of cirrhotic patients presented with ascites. Age, gender, and symptom duration were similar between groups. Cirrhotic patients were more likely to present with an umbilical hernia (63% vs. 28%, p=0.04), bowel obstruction and strangulation (both p<0.01). Mesh was less commonly placed in patients with cirrhosis (15% vs. 56%, p<0.01). Although hernia recurrence (31% vs. 6%, p<0.01) and SSI (26% vs. 10%, p=0.02) occurred more frequently in cirrhotic patients, mortality did not differ between groups. On multivariate analysis, cirrhosis (OR 4.3; 95% CI=1.26-14.44, p=0.02) and refractory ascites (OR 2.2; 95% CI=1.04-4.72, p=0.04) were associated with recurrence and SSI. Neither the MELD nor delta-MELD scores were predictive of wound complications.

Conclusions: Patients with cirrhosis are at an increased risk for complications without an attendant increased risk for death following emergent abdominal wall hernia repair. Aggressive management of ascites may result in improved outcomes.
A13  A Paradigm Shift in General Surgery: Defining a New Reality in the Era of Minimally Invasive Surgery

Authors: Alicia D. Gaidry, Amanda F. Cimsit, Romeo C. Ignacio

Institution: Naval Medical Center San Diego

Presenter: Alicia Gaidry

Objective: Evaluate the current operative experience for open gastrointestinal and abdominal operations among general surgery residents trained in ACGME accredited programs.

Background: Within the past 10 years, several studies have investigated the impact of minimally invasive surgery on general surgery resident training describing growing rates of laparoscopic procedures and the decline of certain open procedures among residents. The trend of open abdominal operations among trainees over the past 4 years is unknown and this study seeks to provide insight into the current status of training.

Methods: Retrospective review of a prospectively maintained database of US general surgery training programs from 2005 to 2015. The main outcome measure is the proportion of open procedures performed by general surgery residents. Statistical analysis was performed by Students T test.

Results: The overall number of annual resident procedures has increased, however case volumes of most surgical subcategories have remained stable during the ten-year period. Total colon, biliary, hernia, and general abdominal procedures have statistically increased in frequency (See Chart 1). Conversely, open appendectomy, vagotomy, enterolysis, colectomy, and anti-reflux procedures have significantly decreased in frequency.

Conclusions: Procedural volume for certain open procedures has decreased despite an increase in overall surgical cases. The impact of diminishing exposure to open procedures during training on a practicing surgeon is unknown. It may benefit residency programs to incorporate alternative teaching modalities, such as cadaver and simulation labs, and develop a novel quality assessment methodology to ensure trainees graduate with competency and proficiency in less frequently encountered open procedures.
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

SESSION B – Moderators Rachael Callcut and Darren Malinoski

B1 Redefining Failure to Rescue in Major Trauma Patients: The Role of Preventability
Richard Vasak

B2 Emergency Exploration for Penetrating Thoracic Trauma: Impact of Admission Physiology and Damage Control Surgery
Molly Deane

B3 Trauma Patients with Extremity Injuries: Should Anti-Factor Xa Trough Level Guide Prophylactic Enoxaparin Dose?
Navpreet Dhillon

B4 Simultaneous Liver and Kidney Transplantation Using High KDPI Organs in Critically Ill Recipients: Proceed with Caution
Navpreet Kaur

B5 Predictors of clinical maturation in center with High Rate of Arteriovenous Fistula Creation
Abraham Korn

B6 Causes and Outcomes of Finger Ischemia in Hospitalized Patients in the Intensive Care Unit
Gregory Landry
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

SESSION B – Moderators Rachael Callcut and Darren Malinoski

B7  Outcomes of Preinjury Anticoagulation in Traumatic Rib Fractures  Allan Stolarski

B8  Evolution of Surgical Aortic Valve Replacement in the Era of Transcatheter Valve Technology  Aditya Mantha

B9  Early Venous Thromboembolic Prophylaxis in Traumatic Acute Subdural Hematoma is Safe and Effective  Gustavo Recinos

B10 Flail Chest: Less Deadly than Originally Thought  Gustavo Recinos

B11 Unplanned Rehospitalization in High Acuity Orthotopic Liver Transplantation: Etiology, Risk Factors and Impact  Tara Russell

B12 Autogenous Alternative Vein Bypass Remains the Preferred Conduit when Saphenous Vein is not Available  Dale Wilson

B13 A Focus on Emergency Re-Triage Trauma Transfers  Jessica Della Valle
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

B01 Redefining Failure to Rescue in Major Trauma Patients:
The Role of Preventability

Authors: Matthew Coates, Eric Pillado, Jin Kim, Richard Vasak, David Plurad, Brant Putnam, Arthur Yule, Dennis Y. Kim

Institution: Harbor-UCLA

Presenter: Richard Vasak

Importance: Failure to rescue (FTR or death after a major complication) has increasingly become adopted as a global measure of quality in postsurgical patients. Current definitions of FTR are limited insofar as they do not account for key determinants of performance or the impact of preventability on mortality.

Objective: To examine the effect of preventability on FTR rates following major trauma.

Design: A 6-year retrospective cohort study; in-depth analysis of proceedings from divisional and departmental peer review.

Setting: University-affiliated County level 1 trauma center.

Participants: Adult trauma patients undergoing emergent surgery for neck, torso, and peripheral vascular injuries.

Main Outcome Measures: Major complications (patient/disease- or provider/system-related) and FTR.

Results: Of 802 patients meeting inclusion criteria, 172 patients (21%) developed a complication. The most common complication was pneumonia (n=24) and 53 complications (31%) were classified as provider/system-related. The unadjusted incidence of FTR was 31%. Age, gender, and mechanism were similar between FTR and non-FTR patients. Only 9 deaths (17%) were adjudicated as preventable, whereas 14 (26%) were potentially preventable, and 30 (57%) were deemed nonpreventable. After adjusting for preventability, the FTR rate decreased significantly to 13%. On multivariate analysis, factors associated with FTR were insurance status (OR 0.3; 95% CI=0.10-0.78, p=0.16), admission hypotension (OR 3.5; 95% CI=1.39-8.71, p<0.01), and Injury Severity Score (OR 1.07; 95% CI=1.03-1.11, p<0.01).

Conclusions: Incorporation of preventability into the FTR metric may allow for more precise risk-adjusted assessments of surgical performance. Current definitions of FTR are inadequate and may overemphasize factors beyond a trauma system’s control.
Emergency Exploration for Penetrating Thoracic Trauma: Impact of Admission Physiology and Damage Control Surgery

**Authors:** Molly Deane¹, Thomas S. Scalea², Samuel Galvagno², Deborah M. Stein², James V. O’Connor²

**Institutions:** ¹Harbor – UCLA, ²R. Adams Cowley Shock Trauma Center

**Presenter:** Molly Deane

**Objective:** We postulated admission physiology, not systolic blood pressure (SBP) identifies patients who might benefit from damage control thoracic surgery (DCTS) improving mortality.

**Background:** Most penetrating thoracic injuries are managed non-operatively. Emergent exploration has 30% mortality, associated with extent of resection.

**Methods:** Trauma registry, 2002 to 2015, was reviewed for penetrating thoracic injuries operated within 12 hours of admission, abstracting demographics, physiology, operations and outcomes. Data is reported as mean and standard deviation, or median and IQR as appropriate. Chi-squared or Fisher exact tests were used. Tests were two-tailed, p <0.05 conferred statistical significance.

**Results:** There were 243 patients, age 31(±11.3) years with 88% males, 40.7% GSW’s. pH was 7.22(±0.14), injury severity score (ISS) 25(14-30), and EMS transport time 33.2(± 24.5) minutes. 136 had pulmonary resection; 114 non-anatomic, 16 lobectomy, 6 pneumonectomy; there were 71 cardiac and 20 great vessel injuries. 55 treated with DCTS had significantly lower pH, shorter time to operation, higher lactate, ISS and mortality but no difference in admission SBP [Table]. The overall mortality was 5.4%; stratified by resection, non-anatomic 3.4%, lobectomy12.5%, and pneumonectomy 50%. Mortality for great vessel and cardiac injuries was 0 and 4.9% respectively. DCTS mortality was 12.3%.

**Conclusions:** Our mortality in severely injured and physiologically altered patients is substantially lower than previously reported, even in the DCTS group, who were profoundly acidotic. Rather than SBP, early recognition of depth of shock identifies patients at the highest risk of death. Rapid transport, expeditious surgery and use of damage control yield exemplary results.
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

B03 Trauma Patients with Extremity Injuries: Should Anti-Factor Xa Trough Level Guide Prophylactic Enoxaparin Dose?

Authors: Navpreet K. Dhillon, Eric J.T. Smith, Kelly Moon, Sara Rashidi, Russell Mason, Galinos Barmparas, Daniel R. Margulies, Eric J. Ley

Institution: Cedars-Sinai Medical Center

Presenter: Navpreet Dhillon

Objective: We sought to investigate if prophylactic enoxaparin dosed by anti-Xa trough level could reduce clinically evident venous thromboembolism (VTE) in trauma patients with any extremity injury.

Background: Adequate VTE prophylaxis is essential after trauma, especially in patients with extremity injuries due to reduced mobility.

Methods: A retrospective review was conducted on trauma patients admitted for at least two days with any extremity injury (extremity AIS >1) and who received enoxaparin for VTE prophylaxis between October 2013 and May 2015. Patients in the control cohort received enoxaparin at 30 mg twice daily. Patients in the adjustment cohort had anti-Xa trough levels measured after three or more consecutive doses of enoxaparin. Those with a trough level of 0.1 IU/mL or lower received enoxaparin increased by 10-mg increments.

Results: Of the 167 patients included, 57 (34.1%) were monitored with anti-Xa trough levels. The cohorts were similar in age, sex, regional AIS, ISS score, ICU length of stay (LOS), hospital LOS, proportion of patients with diagnostic testing for VTE, and time to first enoxaparin dose (Table). Of the patients who had anti-Xa trough levels measured, initial enoxaparin dosing in the majority (70.2%) was subprophylactic. Patients who received enoxaparin dosed by anti-Xa trough level had a significantly lower VTE rate than those who did not (1.8% v. 11.8%, p=0.04).

Conclusions: Prophylactic enoxaparin adjusted by anti-factor Xa level may lead to a decreased rate of clinically evident VTE among trauma patients with extremity injuries. Our data indicates the initial dose of enoxaparin was frequently low.
**B04  Simultaneous Liver and Kidney Transplantation Using High KDPI Organs in Critically Ill Recipients: Proceed with Caution**

**Authors:** Navpreet Kaur, Lea Matsuoka, Shu Cao, Susan Groshen, Sophoclis P. Alexopoulos

**Institution:** University of Southern California

**Presenter:** Navpreet Kaur

**Background:** Critically ill liver transplant recipients with a MELD ≥ 40 have a higher incidence of renal failure and simultaneous liver and kidney (SLK) transplantation compared to those with a lower MELD.

**Objective:** To describe the outcomes of SLK in critically ill recipients with a MELD ≥ 40 and quantify the impact of the kidney donor profile index (KDPI) on kidney graft, liver graft, and patient survival.

**Methods:** Retrospective UNOS database review of all adult liver transplant recipients with a MELD score ≥ 40 from 2/2002-12/2014.

**Results:** During the study period 5002 recipients underwent LT at a MELD ≥ 40 of which 662 received a SLK. 1- and 5- year SLK recipient survival were 79% and 66% respectively. Donor KDPI was 1%-25% in 251, 25%-50% in 184, 50%-75% in 141, and 75%-100% in 82 SLK recipients. Delayed graft function progressively increased from 22% of lowest quartile to 41% of highest quartile KDPI recipients (p=0.001). Multivariable analysis identified KDPI quartile and liver re-transplantation as independent determinants of kidney graft, liver graft, and recipient survival. KDPI 75%-100% SLK increased the risk of kidney graft loss (HR 2.65 [1.8-3.9]), liver graft loss (HR 2.65 [1.77-3.95]) and death (HR 2.52 [1.68-3.76]). One-year patient survival of KDPI 75-100% SLK was 64% compared to 84% in KDPI 1%-25% SLK (p <0.001). This survival difference increased with time.

**Conclusions:** Use of high KDPI organs in critically ill SLK recipients with a MELD ≥ 40 is associated with significantly inferior short and long-term graft and patient survival.
B05  **Predictors of clinical maturation in center with High Rate of Arteriovenous Fistula Creation**

**Authors:** Abraham Korn¹, Hamid Alipour¹, Matthew C. Koopmann¹, Joshua Zane², Ali Shahverdiani¹, Kelsey Gray¹, Amy Kaji¹, Timothy J. Ryan¹, Christian de Virgilio¹

**Institutions:** ¹Harbor-UCLA, ²University of Washington

**Presenter:** Abraham Korn

**Objective:** To determine predictors of clinical maturation of AVF in center with high rate of fistula creation.

**Background:** Guidelines recommend that at least 65% of hemodialysis access procedures are arteriovenous fistulas (AVF), as they are associated with improved survival as compared to grafts. However, a very high rate of AVF creation is not necessarily desirable, as many attempts fail to mature. We hypothesized that a high rate of both AVF creation and maturation is achievable.

**Methods:** A retrospective analysis (2014-2016) of 282 consecutive patients undergoing hemodialysis access. Primary outcome primary assisted clinical maturation

**Results:** Maturation data was available for 255 patients. The mean age was 53.7 years, 67% were diabetic, 68% were Hispanic, and 64% were male. AVF were created in 233 patients (91.4%), of which 81.2% achieved clinical maturation. Adjunctive procedures were needed in 69 (33.3%). On univariable analysis, predictors of maturation included first access procedure (p = 0.0005), brachiocephalic or brachiobasilic fistula (p=0.0006) and no prior coronary revascularization (p= 0.005). Hispanic ethnicity (p = 0.05) and aspirin use (p = 0.07) trended towards significance. On multivariable analysis significant predictors were first access (OR = 2 1.2-3.3, p = 0.003), aspirin use (OR 2.6 1.2-5.7, p=0.02), and no prior coronary revascularization (OR=5 1.2-10, p = 0.03)

**Conclusions:** A high rate of clinical maturation was achieved despite a high rate of AVF creation. Predictors of maturation included first-time access, aspirin, and no prior coronary revascularization.
B06  Causes and Outcomes of Finger Ischemia in Hospitalized Patients in the Intensive Care Unit

Authors: Courtney Mostul, Daniel Ahn, Bryant McLafferty, Gregory Landry

Institution: Oregon Health & Science University

Presenter: Gregory Landry

Objective: To determine causes and outcomes of finger ischemia in intensive care unit (ICU) patients.

Background: Finger ischemia is common in critically ill patients but causes are multifactorial and outcomes not well characterized.

Methods: All ICU patients who underwent evaluation for finger ischemia from 2008-2015 were reviewed. All were evaluated with finger plethysmography (PPG). Patient demographics, comorbidities, ICU care (ventilator status, arterial lines, use of pressors), finger amputations, and survival were recorded.

Results: 97 patients (54 male, 43 female) were identified. Mean age was 57.3±16.8. 42(43%) were surgical ICU patients and 55(57%) medical ICU. 70(72%) had abnormal finger PPGs, 67(69%) unilateral and 30(31%) bilateral. 36(37%) had an ipsilateral arterial line. 12(13%) had concomitant toe ischemia. 76(78%) were on pressors at the time of diagnosis, with the most frequent being phenylephrine(55%), norepinephrine(47%), ephedrine(30%), epinephrine(26%), vasopressin(25%), dopamine(7%), dobutamine(6%). Treatment was with therapeutic anticoagulation in 46(47%), aspirin in 50(52%), and clopidogrel in 15(16%). Other frequent associated conditions included mechanical ventilation at time of diagnosis(37%), diabetes(33%), history of peripheral vascular disease(32%), dialysis dependence(31%), cancer (24%) and sepsis(20%). Only five patients (5%) ultimately required finger amputation. 30 day, one and two year survival was 85%, 73% and 65%.

Conclusions: Finger ischemia in ICU patients has a variety of causes but is frequently associated with arterial lines and the use of pressor medications, of which phenylephrine and norepinephrine are the most frequent. Either anticoagulation or antiplatelet therapy is appropriate treatment. While progression to amputation is rare, patients with finger ischemia in the ICU have a high rate of mortality.
B07  Outcomes of Preinjury Anticoagulation in Traumatic Rib Fractures

Authors: Allan E. Stolarski1, Claire P. Miller1, Ashar Ata1, Kimberly Owens1, Lauren Evans2, Marcel Tafen1, Carl Rosati1, Steven C. Stain1

Institutions: 1Albany Medical College, 2Cedars-Sinai Medical Center

Presenter: Allan Stolarski

Objective: To evaluate the effect of preinjury anticoagulant and antiplatelet agents (ACAP) on outcomes in patients with rib fractures.

Background: ACAP have been shown to negatively affect outcomes of trauma patients.

Methods: Retrospective database review from January 2011 to December 2014 at a level-one trauma center. All patients 18 years and older with rib fractures by blunt mechanism were included. Outcomes evaluated were mortality, length of stay, ICU admission, pulmonary contusion, thoracic drainage procedures, and pulmonary complications.

Results: Of 1448 patients, 149 (10.3%) patients had preinjury ACAP (54% aspirin, 22.5% warfarin, 15.4% anti-platelet, 5% direct-Xa-inhibitors, 3% enoxaparin). ACAP patients were significantly older (mean age, 71 vs. 53, P=<0.05). Other demographics were similar including number of rib fractures and GCS. When comparing outcomes (ACAP vs. non-anticoagulated patients, N-ACAP) there was no difference in pulmonary complications (24.16% vs. 22.27%, P=0.600), ICU admissions, or ICU days. ACAP group had a significantly longer LOS (12.03 vs. 9.32 days, P=0.004), also interestingly, less pulmonary contusion (15.4% vs. 22.94%, P=0.037) and fewer thoracic drainage procedures (10.74% vs. 19.04%, P=0.013). Multivariate adjustment for GCS, ISS and age showed patients taking warfarin had significantly longer LOS (7.39 days longer than N-ACAP; 95% CI, 3.79-10.98). Mortality was significantly lower in the ACAP group (1.34% vs. 5.43%; P=0.031). However, multivariate adjustment for GCS and ISS showed no difference in mortality.

Conclusions: Preinjury ACAP agents do not increase mortality or morbidity in rib fracture patients. However, these patients have a longer LOS indicating a requirement for higher utilization of hospital resources.
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

B08  Evolution of Surgical Aortic Valve Replacement in the Era of Transcatheter Valve Technology

Authors: Aditya M. Mantha¹, Yen-Yi Juo², Ravi Morchi¹, Ramin Ebrahimi², Boback Ziaeian², Richard J. Shemin², Peyman Benharash²

Institutions: ¹University of California – Irvine, ²University of California – Los Angeles

Presenter: Aditya Mantha

Objective: To compare utilization and outcomes of SAVR before and after the adoption of TAVR in 2011.

Background: Surgical aortic valve replacement (SAVR) has been the standard treatment for patients with severe aortic stenosis. In light of the recent availability of transcatheter valve replacement (TAVR) for high-risk patients, we hypothesized that utilization and outcomes of SAVR have evolved.

Methods: Hierarchical segmented regression was used to compare mortality, length of stay, and overall cost of care for adults in the National Inpatient Sample undergoing isolated SAVR and TAVR from 2004-2013 adjusting for patient demographics and comorbidities.

Results: Of the 161,293 patients included, 141,430 (87.7%) underwent isolated SAVR from 2004-2013 and 19,863 (12.3%) underwent TAVR from 2011-2013. TAVR patients were more likely to be older (81.3 vs. 60.5 years), Caucasian (87.6% vs. 79.6%), female (49.5% vs. 37%), and have a higher Elixhauser Comorbidity Index (6.14 vs 4.22). Patients receiving SAVR after 2011 had a shorter LOS (IRR 0.87 95%CI: 0.87-0.89, P < .001), lower mortality (OR: 0.59 95%CI: 0.50-0.71, adj. p<0.001) and a higher Elixhauser CI (Figure) than the earlier cohort. From 2004 through 2010, the rate in change of cost of SAVR was stable ($43,167 vs. $47,142, adj. P =NS). Since 2011, the annual change cost of SAVR has decreased significantly from $48,924 to $44,666 (adj. P < .001).

Conclusion: The cost and length of stay after SAVR has significantly decreased since the adoption of TAVR. Such data may aid in more efficient allocation of complementary surgical and transcatheter technologies.
B09  Early Venous Thromboembolic Prophylaxis in Traumatic Acute Subdural Hematoma is Safe and Effective

Authors: Gustavo Recinos, Elizabeth Benjamin, Agustin Escalante, Kazuhide Matsushima, Kenji Inaba, Demetrios Demetriades

Institution: University of Southern California

Presenter: Gustavo Recinos

Objective: To evaluate the optimal timing of pharmacological venous thromboembolism (VTE) prophylaxis, with regards to safety and efficacy, in patients with isolated traumatic acute subdural hematomas (ASDH).

Background: The optimal time for pharmacological VTE prophylaxis in head trauma is not clear. The presence of associated extracranial injuries complicates the interpretation of efficacy and safety of VTE prophylaxis regimes. To minimize this problem this study included only patients with isolated traumatic ASDH.

Methods: TQP study, patients with isolated ASDH, who received pharmacological VTE prophylaxis. Deaths within 72 hours of admission were excluded. Study population divided into 3 groups according to time of starting VTE prophylaxis: within 48 hours, 49-72 hours and >72 hours. Variables collected included GCS, hypotension, head AIS, ISS, comorbidities, ICP placement. Outcomes included VTE, delayed craniectomies, ventilator and ICU days. Logistic regression analysis was performed to identify independent risk factors for VTE, death, and delayed craniectomies.

Results: 4,844 patients had isolated ASDH. 1,909 (39.4%) had prophylaxis within 48 hours, 1,021 (21.1%) within 49-72 hours and 1,914 (39.5%) after 72 hours. Logistic regression analysis identified delayed pharmacological prophylaxis (>72 hours) as independent risk factor for VTE [adj p 0.049, OR 1.12, 95% CI 1.001,1.4650] but not mortality [adj p=0.674, OR 1.08, 95% CI 0.751,1.561)]. The adjusted risk for delayed craniectomy did not increase with anticoagulation earlier than 72 hours.

Conclusions: In isolated ASDH, early DVT prophylaxis is associated with decreased VTE and does not increase the risk for delayed craniectomies or death.
B10  Flail Chest: Less Deadly than Originally Thought

Authors: Elizabeth Benjamin, Gustavo Recinos, Kenji Inaba, Demetrios Demetriades

Institution: University of Southern California

Presenter: Gustavo Recinos

Objective: Clearly define the mortality associated with flail chest using patients with isolated injury.

Background: Flail chest is considered a highly morbid condition with mortality ranging from 10-20%. The generation of flail chest requires significant force and is often associated with additional injuries complicating management and prognosis. The physiologic impact of flail chest injury alone is poorly defined.

Methods: NTDB study. All patients from 1/2007-12/2014 admitted with flail chest were extracted. Patients with head or abdominal AIS>2, dead on arrival, or transferred were excluded. Primary outcome was mortality; secondary outcomes needed for intubation and pneumonia.

Results: Of the 1,047,519 patients with blunt chest injury, 14,718 (1.4%) patients presented with flail chest, and 8098 (0.77%) met inclusion criteria. The most commonly associated intra-thoracic injuries were hemothorax (57.9%) and lung contusions (63.0%) while sternal fracture (8.8%) and cardiac contusion (2.5%) was less common. 29.8% of patients required intubation and 11.2% developed pneumonia. Overall mortality was 5.6%. On multivariable analysis, age >65 and need for intubation were independent risk factors for mortality (OR 6.02, 3.75, respectively, p<0.001). Independent predictors for intubation included cardiac or pulmonary contusion and sternal fractures (OR 3.78, 2.38, 2.29, respectively, p<0.001). Need for intubation was the primary predictor of pneumonia (OR 13.18, p<0.001).

Conclusions: Flail chest is rare following blunt trauma and the associated mortality is lower than previously reported. Supportive therapy is effective and over 2/3 of patients avoid intubation. Need for intubation, however, is independently associated with mortality therefore early identification and aggressive management is recommended.
E-Poster Sessions B

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

B11 Unplanned Rehospitalization in High Acuity Orthotopic Liver Transplantation: Etiology, Risk Factors and Impact


Institution: University of California – Los Angeles

Presenter: Tara Russell

Objective: Evaluate causes, predictors, and impact of unplanned readmissions (UR) among orthotopic liver transplant (OLT) patients.

Background: The ever increasing acuity of OLT recipients has considerably increased the strain placed on healthcare infrastructure. This impact, particularly in the post-OLT phase of care, is poorly understood. Herein we present the largest analysis examining patient characteristics and causes for readmission, in order to inform quality improvement and guide efforts to optimize value-based healthcare in this high-cost population.

Methods: All transplants and readmissions for adults undergoing OLT at a single academic center from 2013-2015 were evaluated. Data was compiled from our center’s transplant database and the United Network for Organ Sharing. Summary statistics for transplant admissions and post-OLT readmissions were compiled. Predictors of readmission were determined by zero-inflated negative binomial regression (ZINB).

Results: 388 patients underwent OLT, resulting in 568 readmissions. Among readmissions, 105 (18.4%) were planned, 463 (81.6%) unplanned. UR ranged in length of stay (LOS) from 1-247 days (median 5), with 58.1% <7 days, 34.2% 8-30 days and 7.7% >30 days, totaling 5833 bed-days. 76 (13.3%) UR required ICU care, with ICU-LOS ranging 1-218 days (median 6.5), and totaling 1475 ICU-bed-days. Readmission causes detailed in table. Higher OLT MELD (Model for End Stage Liver Disease) score, lower pre-transplant functional status, pre-transplant ICU stay, longer post-transplant LOS and impaired ambulatory status were associated with greater UR-LOS (p<0.01 by ZINB, figure by quartile).

Conclusions: Readmissions after high-acuity OLT require a substantial amount of resources. Developing interventions directed towards better discharge planning, outpatient follow-up and monitoring of patients at higher risk for UR could reduce utilization and improve quality.
**B12  Autogenous Alternative Vein Bypass Remains the Preferred Conduit when Saphenous Vein is not Available**

**Authors:** Dale Wilson, Jeff Wagner, Sheena Harris, Amir Azarbal, Erica Mitchell, Gregory Landry, Gregory Moneta, Enjae Jung

**Institution:** Oregon Health an Science University

**Presenter:** Dale Wilson

**Objectives:** We hypothesize that autogenous alternative vein (AAV) grafts in infrainguinal bypasses have good long term patency.

**Background:** Saphenous vein is the gold standard for infrainguinal bypass. When a saphenous vein is not available there is debate as to whether AAV or prosthetic graft is the better alternative conduit.

**Methods:** We conducted a retrospective EMR chart review of 107 lower extremity bypasses for critical limb ischemia (CLI) using autogenous composite vein, or single segment arm vein between the years of 2005-2015. We examined primary, primary assisted, and secondary patency rates, as well as amputation free survival.

**Results:** 98 (107 limbs) patients underwent lower extremity bypass with AAV during the study period. All patients had CLI with rest pain, and/or lower extremity ischemic wounds. 61 patients had composite, and 46 patients had single segment arm vein grafts. 93% (100 limbs) of bypasses were to below knee targets. Primary, primary assisted and secondary patency rates at 2 years for composite and single arm veins were 46%, 70%, 79%, and 42%, 71%, and 78% respectively which were not statistically different (p=>0.05). At 5 years, primary, primary assisted and secondary patency rates were not statistically different with rates of 37%, 70%, 79%, and 37%, 65%, and 73% respectively (p=>0.05). Amputation free survival at two years was 91% for composite and 95% for single arm vein.

**Conclusions:** Composite and single segment arm vein grafts are durable conduits and should be the first option for infrainguinal bypass when saphenous vein is not available.
A Focus on Emergency Re-Triage Trauma Transfers

Authors: Jessica M. Della Valle¹, Christopher Newton², Richard A. Kline³, David A. Spain⁴, Elizabeth Pirrotta⁴, Nancy E. Wang⁴

Institutions: ¹St. Elizabeth’s Medical Center, ²University of California – San Francisco, ³Regional Medical Center, ⁴Stanford University

Presenter: Jessica Della Valle

Objective: To understand emergency re-triage outcomes.

Background: Critically injured patients presenting to non-trauma hospitals require timely transfer to trauma centers; however, the transfer process is variable and outcomes unknown. We evaluate regional trauma outcomes following local EMS agencies’ implementation of policies guiding emergency re-triage (expedited transfer).

Methods: In this retrospective study of regional trauma transfers (2013) in San Francisco Bay Area Regional Trauma Centers, patients were categorized as: emergency re-triage, traditional ED trauma transfers, and emergency primary triage to a trauma center. Emergency trauma patients were identified using pre-defined high acuity criteria, and further categorized with blunt or penetrating injuries. Primary outcomes were transfer time and mortality rate.

Results: Emergency re-triage (234/18772) compared to traditional ED transfer (1740/18772) and emergency primary triage (2515/18772) patients, had higher median injury severity scores (ISS) (13, 9, 10 respectively) and mortality rates (20.1%, 1.2%, 16.9% respectively) (all p<0.001). Emergency re-triage patients with blunt (46/234) versus penetrating (103/234) injuries had a higher median ISS (17 vs. 5), higher mortality rates (50% vs. 4.9%), and longer median time at the initial non-trauma hospital (156 vs. 67 min). Emergency re-triage patients who died, spent longer times (146 vs. 113 min) at non-trauma hospitals than those who survived (30% of records were missing time information thus findings were not statistically significant for these patients).

Conclusions: Through this quality improvement process, we identified data elements required to understand and improve the emergency re-triage process. Through early identification of patients and guidance to transferring facilities, opportunity exists to improve outcomes.
SESSION C – Moderators Catherine Dang and Donn Spight

C1 Intraoperative Radiation Therapy (IORT) is Associated with an Increased Rate of Minor Surgical Site Complications in Oncoplastic Breast Conserving Surgery (OBCS)
Angelena Crown

C2 Splenectomy for Stem-Cell Transplant Candidates with Massive Splenomegaly
Kaj Johansen

C3 The Importance of Local Therapy in Women with Inflammatory Breast Cancer
Helen Johnson

C4 A 20-year Military-Civilian Partnership at an Academic Medical Center: A Model for Collaboration Beyond Trauma Care
Jamie Anderson

C5 Improved Perioperative Outcomes With Staged Arterial Bypass Preceding Resection of Retroperitoneal Masses Involving Iliac Vessels
Hubert Luu

C6 A National Comparison of Laparoscopic vs. Robotic-Assisted Distal Pancreatectomy
Mustafa Raoof

C7 Knowledge and Perceptions of Morbidity and Mortality Conferences among Pediatric Surgeons in the Developing World
Joshua Rouch
E-Poster Sessions C

All Scientific Session and E-Poster Presentation authors and presenters are MDs unless otherwise noted.

SESSION C – Moderators Catherine Dang and Donn Spight

C8  Analysis of Index Lesions not Visualized on Breast Specific Gamma Imaging when Imaging for a New Diagnosis of Breast Cancer
    Maria-Elise Sanchez

C9  Surgical Outcomes of Breast Reconstruction in the Elderly Population after Mastectomy: A NSQIP Analysis
    Halley Vora

C10  Is Pasireotide Effective in Patients Who Are at High Risk for Development of Postoperative Pancreatic Fistula? A Pilot Study from a Tertiary Center
     Stephanie Young

C11  Hiding in Plain Sight? Preoperative Ultrasound Findings in Patients with a Follicular Variant of Papillary Thyroid Cancer
     Kahee Jo

C12  Optimization of Breast Conserving Surgery Technique
     Shawn Steen

C13  Utility of Routine Modified Barium Swallow Study in Postoperative Esophagectomy Patients
     Oliver Eng
C01 Intraoperative Radiation Therapy (IORT) is Associated with an Increased Rate of Minor Surgical Site Complications in Oncoplastic Breast Conserving Surgery (OBCS)

Authors: Angelena Crown, Debra G. Wechter, Thomas R. Biehl, Janie W. Grumley

Institution: Virginia Mason Medical Center

Presenter: Angelena Crown

Objective: This study assesses surgical site complications associated with IORT in OBCS.

Background: IORT delivers a single dose of radiotherapy in the surgical tumor bed at the time of breast conserving surgery. Studies have demonstrated similar breast cancer recurrence rates and no difference in breast cancer survival when compared to adjuvant whole breast radiation therapy. Radiation therapy is associated with wound complications but the effect of IORT on surgical site complications has not been studied.

Methods: This single institution chart review evaluated all patients undergoing oncoplastic breast conserving surgery for treatment of breast cancer between January 2013 and July 2015. The patients were divided into OBCS with IORT (IORT group) and those treated with OBCS only (OBCS group). Surgical site complications and treatments of complications were assessed.

Results: The study comprised 453 patients with 162 in the IORT group and 291 patients in the OBCS group. Surgical site complications occurred in 29 patients (17.9%) in the IORT group compared to 20 patients (6.8%) in the OBCS group (p=0.001). There was no difference in the need for interventions secondary to complications between the two groups (IORT 16 patients, 55.2% vs BCS 10 patients, 45%, p=0.78). Obesity, smoking, chemotherapy, patient age, cancer stage, re-excision rate, and whole breast radiation were not associated with an increased complication rate.

Conclusions: Overall, OBCS has a low rate of surgical site complications. IORT is associated with a higher complication rate; however, the complications were minor and there was no difference in the rate of intervention.
C02  Splenectomy for Stem-Cell Transplant Candidates with Massive Splenomegaly

Author: Kaj Johansen

Institution: Swedish Medical Center

Presenter: Kaj Johansen

Objective: To report outcomes of a surgical protocol for the management of massive splenomegaly in patients with myelodysplastic syndrome (MDS) awaiting stem-cell transplantation (SCT).

Background: Massive splenomegaly often complicates MDS. Such patients’ resulting breathing difficulties, abdominal pain, malnutrition and cytopenia often make them unfavorable operative candidates. In addition, the markedly-enlarged spleen may produce substantial anatomic distortion, and operative mortality rates as high as 9% have been reported. Some data suggest that splenomegaly may worsen outcomes at the time of a subsequent SCT in MDS patients.

Methods: Review of a 15-year experience of splenic artery embolization followed by laparotomy, splenectomy and wedge liver biopsy for MDS patients with massive splenomegaly (>1500 g).

Results: Between 2001 and 2016 a total of 48 MDS patients with massive splenomegaly underwent the treatment protocol. Spleens averaged 2950 g (range 1500-4250 g). All patients survived (mortality 0%). Intraoperative blood loss averaged 340 mL (range 100-1800 mL). Hospital stay averaged 4.6 days (range 2-11 days), predominantly due to prolonged ileus in virtually all patients. Among 46 patients who proceeded to SCT all (100%) experienced a successful transplant engraftment.

Conclusions: Splenectomy for massive splenomegaly in MDS patients can be performed safely and with minimal blood loss, particularly with pre-emptive splenic artery embolization. Such treatment seems to be associated with a subsequent successful SCT.
C03  The Importance of Local Therapy in Women with Inflammatory Breast Cancer

Authors: Helen Johnson, Mahvish Muzaffar, Nazreen Vohra, Jan Wong

Institution: East Carolina University

Presenter: Helen Johnson

Objective: To determine the effect of local therapy on survival in women with inflammatory breast cancer (IBC).

Background: IBC is an unusual clinicopathologic subtype of breast cancer in which cytotoxic chemotherapy is the primary therapy. Local regional therapies are considered important in preventing symptomatic chest wall disease but the effect on survival are controversial.

Methods: Retrospective population study of the NCI’s SEER registry of women with stage III IBC (T4d, N0-3, M0) diagnosed between 1988 and 2013.

Results: During the study time period, 11,604 patients were diagnosed with T4d,N0-3, M0 IBC. Of these, 7304 (62.9%) patients had local regional treatments documented. These patients had a mean age of 57.2 years (range 21-103yrs). Of these patients, 1147 (15.7%) had N0 disease, 2478 (33.9%) had N1 disease, 1788 (24.5%) had N2 disease, and 1891 (25.9%) had N3 disease. Four hundred nine women (5.6%) had a partial mastectomy. By univariate analysis N stage (<0.001), ER status (<0.001), PR status (<0.001), race (<0.001), time period of diagnosis (<0.001), the type of surgery (0.003) and whether or not radiation therapy (<0.001) was given were all significantly associated with survival. In the Cox Proportional hazard model, radiation (HR 0.64, 95% CI 0.61-0.69) and total mastectomy (HR 0.75, 95% CI 0.65-0.85) remained significantly associated with improved survival.

Conclusions: In patients with Stage III IBC, both the type of surgery (total mastectomy) and the addition of radiation therapy are associated with improved survival. Combined modality therapy including total mastectomy is critical in the observed survival improvements in IBC.
C04  A 20-year Military-Civilian Partnership at an Academic Medical Center: A Model for Collaboration Beyond Trauma Care

Authors: Jamie E. Anderson¹, Hilary G. Loge², Elizabeth A. David¹, David T. Cooke¹, Diana L. Farmer¹, Joseph M. Galante¹

Institutions: ¹University of California – Davis, ²David Grant Medical Center

Presenter: Jamie Anderson

Objective: To evaluate our longstanding military-civilian academic and educational partnership.

Background: Even during periods of military engagement, providing comprehensive surgical training and sustaining medical readiness of military surgeons remains challenging.

Methods: Collaboration between surgeons of the US Air Force (USAF) and a quaternary academic medical center (AMC) over the past 20 years was evaluated. Successes and challenges in the areas of graduate medical education, clinical enterprise, and research by military faculty were identified.

Results: The partnership began in 1995 with a USAF general surgery residency rotation in trauma surgery at the AMC. In 2003, the AMC general surgery residency absorbed the USAF residency program. Of 86 residents, there are currently 24 military residents, including 8 general surgery residents. The AMC also hosts a pre-flight surgery internship (11 residents), and the military’s only integrated vascular (4 residents) and cardiothoracic surgery residencies (1 resident). There are 8 military faculty in trauma, cardiothoracic, vascular, and pediatric surgery. Military faculty perform a comparable average case load (ratio of 1.4:1.0 in trauma and 1.2:1.0 in cardiothoracic surgery). Over the past 3 years, compared to civilians, military faculty have published an average of 2.6 vs. 10.8 papers in trauma and 5.5 vs. 8.7 papers in cardiothoracic surgery.

Conclusions: A surgical military-civilian partnership beyond trauma care is mutually beneficial. The military faculty supports the AMC’s mission in clinical care and research, while the AMC trains the next generation of military surgeons and provides a busy clinical and academic environment for sustainment of readiness and professional enhancement.
C05 Improved Perioperative Outcomes With Staged Arterial Bypass Preceding Resection of Retroperitoneal Masses Involving Iliac Vessels

Authors: Hubert Y. Luu, Eric D. Wang, Shareef Syed, Xiaoti Xu, Jimmy Hwang, Scott L. Hansen, Charles Eichler, Eric Nakakura

Institution: University of California - San Francisco

Presenter: Hubert Luu

Objective: To characterize and compare the outcomes of surgery for retroperitoneal masses with major vascular involvement by a novel two-stage approach (femoral-femoral bypass preceding resection) and the traditional one-stage approach (consecutive resection and in-situ vascular reconstruction).

Background: Current surgical management of retroperitoneal masses involving major vessels now includes complete en-bloc resection with in-situ venous, arterial, or combined reconstruction. Bleeding complications and lengthy operations are frequently associated with peri-operative morbidity. No studies have investigated pre-resection arterial bypass for continuous lower extremity perfusion during definitive resection.

Methods: We retrospectively reviewed patients who underwent resection of retroperitoneal masses and reconstruction of major arterial or venous structures from 2004 to 2016. Demographics, clinicopathologic data, complications, and vascular and oncologic outcomes were analyzed with unpaired t-tests, chi-squared tests, and logistic regression.

Results: Eight patients underwent a two-stage procedure and seven underwent a one-stage procedure for retroperitoneal masses with vascular involvement. Mean (±SD) operating room time (443±215 vs. 648±128 min., p=0.047) and post-operative ICU stay (0.9±1.3 vs. 4.4±2.9 days, p=0.018) were shorter for the two-stage approach. Estimated blood loss (2,287±1,808 vs. 8,928±10,066 mL, p=0.13) and transfusion volumes (2,362±2,353 vs. 7,728±9,223 mL, p=0.13) were not significantly reduced in the two-stage technique, likely because of lack of power.

Conclusions: To our knowledge, this is the first report of a two-stage approach for resection of retroperitoneal masses with major vessel involvement. Extra-anatomic arterial bypass before definitive resection may be a viable option for improving intraoperative vascular control and decreasing perioperative complications in these complex procedures.
C06  A National Comparison of Laparoscopic vs. Robotic-Assisted Distal Pancreatectomy

**Authors:** Mustafa Raoof, Laleh Melstrom, Susanne G. Warner, Yanghee Woo, Gagandeep Singh, Yuman Fong

**Institution:** City of Hope National Medical Center

**Presenter:** Mustafa Raoof

**Objective:** To compare outcomes after laparoscopic and robotic-assisted distal pancreatectomy

**Background:** Safety of robotic-assisted distal pancreatectomy (RDP) has been demonstrated through institutional experience and is thought to be comparable to laparoscopic distal pancreatectomy (LDP). Concerns regarding generalizability of the technique and long-term outcomes remain.

**Methods:** Using the National Cancer Database (NCDB), we analyzed all patients undergoing distal pancreatectomy for resectable pancreatic adenocarcinoma over a four-year period (2010-2014) by either of the two minimally invasive techniques. Analyses are performed as intention-to-treat.

**Results:** Of the 704 eligible patients, 605 (86%) underwent LDP and 99 (14%) underwent RDP. Median follow up for alive patients was 25 months. There were no differences in the two groups with respect to the distribution of age, sex, race, hospital volume, insurance status, comorbidities, grade, nodal status, tumor extent, pre- or post-operative therapy. In comparing LDP vs. RDP, there was no difference in the margin-positive rate (15% vs. 16%); Median lymph nodes examined (12 vs. 11); overall survival (HR: 1.1, 95%CI 0.7-1.7; Median 28 vs. 25 months, p=0.7); Median hospital stay (6 vs. 5 days); Median time to chemotherapy (50 vs. 52 days); 30-day readmission (9.4% vs 9.1%) and mortality (1% vs. 0%). Patients undergoing LDP had a significantly higher conversion rate to open compared to RDP (27% vs. 10%, p<0.001).

**Conclusions:** In the absence of randomized trials, this is the largest comparative study demonstrating RDP as an acceptable alternative to LDP with a significantly lower conversion rate.
C07  Knowledge and Perceptions of Morbidity and Mortality Conferences among Pediatric Surgeons in the Developing World

Authors: Joshua D. Rouch¹, Aaron J. Dawes¹, Biayna Sukhudyan², Daniel A. DeUgarte¹, Shant Shekherdimian¹

Institutions: ¹University of California – Los Angeles, ²Arabkir Joint Medical Center

Presenter: Joshua Rouch

Objective: To understand opportunities and barriers to implementation of Morbidity and Mortality conferences (MMC) in the developing world

Background: MMCs are a well-established tool for improving quality of care in surgical departments throughout the developed world. Like many low-to-middle income countries, most Armenian hospitals do not have formalized MMCs.

Methods: A 27-question, anonymous, self-administered written survey was distributed to all pediatric surgeons working in Yerevan, the capital of Armenia.

Results: Sixty-two of the 68 pediatric surgeons in Yerevan agreed to participate (response rate 91%). Most respondents reported general understanding of basic MMC principles and believed that MMCs are an effective tool for education and quality improvement. However, when asked about implementing MMCs in Armenia, only 4 surgeons (6%) felt comfortable disclosing patient outcomes without fear of negative professional consequences. The most commonly reported barrier to implementation was concern regarding confidentiality of MMC discussions (n=45, 73%). While 33 surgeons (49%) were willing to report their own complications, only 22 (33%) felt that their colleagues would do the same.

Conclusions: Despite sufficient interest and moderate understanding of the MMC process, there are significant barriers to implementing MMCs among pediatric surgeons in Armenia. Modifications to the standard MMC format that address concerns regarding confidentiality, unequal participation, and fear of legal repercussions may increase the likelihood of surgeon involvement in MMCs and other quality improvement programs.
C08  Analysis of Index Lesions not Visualized on Breast SpecificGamma Imaging when Imaging for a New Diagnosis of Breast Cancer

Authors: Maria-Elise Sanchez, Nathalie Johnson

Institution: Oregon Health and Science University

Presenter: Maria-Elise Sanchez

Objective: Analyze nonvisualized index lesions using BSgi.

Background: Breast Specific Gamma Imaging (BSgi), can be used to evaluate extent of disease or synchronous tumor in new breast cancer patients. In some cases the index lesion is not visualized. We reviewed our experience to understand if BSgi still reliable for ruling out synchronous cancer, estimating extent of disease and surgical planning in this setting.

Methods: A retrospective review performed on prospectively maintained database of BSgi performed in a comprehensive breast health center between 2006-2012. Studies done for a new diagnosis of breast cancer were reviewed. If the index lesion was not detected, cases were further analyzed examining histopathology, size, and emergence of interval cancer on 1 year follow up.

Results: There were 1742 total studies with 716 done for a new diagnosis of breast cancer. The index lesion was not visualized (NV) in 88 cases. The histopathology was predominantly ductal carcinoma in situ DCIS(39) and invasive ductal carcinoma IDC (39). The median tumor size of NV DCIS was 0.7cm and for NV IDC, median was 0.8cm. At follow up, there were no interval cancers identified in 85patients (24 of whom underwent mastectomy with no additional tumor on path) 2 were lost to follow up, and one patient developed angiosarcoma.

Conclusions: Non-visualization of the index lesion by BSgi when imaging new breast cancer is associated with small index tumor size. There were no missed synchronous lesions on follow up. Surgical planning and breast conservation decisions can be reliably made in this setting.
C09  Surgical Outcomes of Breast Reconstruction in the Elderly Population after Mastectomy: A NSQIP Analysis

Authors: Halley Vora, Rodrigo F. Alban, Farin Ameri, Armando Giuliano, Alice Chung

Institution: Cedars Sinai Medical Center

Presenter: Halley Vora

Objective: Compare 30-day postoperative morbidity and mortality (POMM) in patients age ≥ 65 who had mastectomy with and without breast reconstruction (BR).

Background: Despite benefits of BR after mastectomy, it is less commonly performed in older patients because of presumed increased surgical risk. We hypothesized that despite more comorbidities in patients ≥ 65, BR does not place these patients at increased risk for POMM.

Methods: Patients treated with mastectomy, with and without BR, age ≥ 65 were identified from the National Surgery Quality Improvement Program database from 2010-2014 using CPT codes. Rates of BR, patient comorbidities, and 30-day POMM were compared among patients who received BR and those who did not.

Results: A total of 20,567 mastectomy patients were identified: 4,811 (23.4%) had BR; 15,756 (76.6%) did not. BR was implant-based in 4,151 patients (86.3%), while 660 (13.7%) had autologous-tissue reconstruction. Mean age in BR group was 69.47; non-BR, 74.63 (p<0.01). Patients with comorbidities were less likely to get BR (p<0.01). Mortality rate was not significantly different between groups (p=0.13). There was no significant difference between non-BR and BR patients in superficial surgical site infections, deep venous thrombosis, stroke, myocardial infarction, transfusions, readmission, and length of stay. Non-BR patients had more urinary tract infections. BR patients had higher rates of pulmonary embolism and return to the operating room.

Conclusions: Mortality following mastectomy, with or without BR, is rare and incidence of complications is low in patients ≥ 65. Age alone should not be a contraindication to BR.
Is Pasireotide Effective in Patients Who Are at High Risk for Development of Postoperative Pancreatic Fistula? A Pilot Study from a Tertiary Center

Authors: Stephanie Young, Michael L. Sung, Louis A. DiFronzo, Victoria V. O’Connor

Institution: Kaiser Permanente Medical Center

Presenter: Stephanie Young

Objective: To evaluate the role of perioperative pasireotide in the reduction of postoperative pancreatic fistula (POPF) in high-risk patients.

Background: Perioperative pasireotide was shown to reduce the risk of POPF after pancreatic resections, yet the efficacy of the drug in patients who are high-risk for POPF remains unknown.

Methods: A pilot study of perioperative pasireotide in patients who underwent pancreatic resections from 2015 through 2016. Of the 46 patients, 8 patients received pasireotide using the regimen described in the previous trial. The primary endpoint was the development of Grade ≥3 (i.e., requiring drainage) POPF in high-risk patients (pancreatic duct <5mm, ± soft pancreas).

Results: The two groups were similar in age, gender, race distribution, body mass index, and American Society of Anesthesiologists score (P = NS). Thirty-five patients (76%) underwent pancreaticoduodenectomy and 11 (24%) underwent distal pancreatectomy. POPF ≥3 occurred in 12 patients (26%): one out of eight patients treated with pasireotide, and 11 out of 38 patients who were untreated (12.5% vs 29.0%, respectively, P=NS). Of the 30 patients with a non-dilated duct, use of pasireotide was associated with a decrease in POPF from 33% to 17% (P=NS). Of the 22 patients who had a non-dilated duct and soft pancreas, POPF was 20% in pasireotide group and 35% in the group who did not receive the drug (P=NS).

Conclusions: Patients undergoing pancreatic resections who are at high-risk for developing postoperative pancreatic fistula may benefit from perioperative pasireotide. Future studies should address selective use of this expensive drug.
C11  **Hiding in Plain Sight? Preoperative Ultrasound Findings in Patients with a Follicular Variant of Papillary Thyroid Cancer**

**Authors:** Kahee Jo, Eric C. Huang, Jorge Avila, Kevin TK Nguyen, Nika R. Carrillo, Michael J. Campbell

**Institution:** University of California – Davis

**Presenter:** Kahee Jo

**Objective:** To determine the US characteristics of follicular variant of papillary thyroid carcinoma (FVPTC) and evaluate how they differ from classic variant of papillary thyroid carcinoma (CVPTC).

**Background:** Cervical ultrasound (US) is the cornerstone of evaluating patients with thyroid nodules. The decision to perform a fine needle aspiration (FNA) of a thyroid nodule largely depends on its US characteristics.

**Design/Methods:** Review of the preoperative US findings on patients who underwent a thyroidectomy for papillary thyroid carcinoma (PTC), >1 cm in size, between 2007 and 2015 at a tertiary center.

**Results:** 126 patients with 131 PTCS met inclusion criteria. 76 (58%) of the cancers were a CVPTC, 46 (35%) were FVPTC, and 9 (7%) were other variants. The mean tumor size for FVPTC was similar to CVPTC (2.5 cm vs. 2.4 cm, p = 0.597). On US the FVPTC was less likely to be hypoechoic (50% vs. 87%, p<0.001), have an irregular margin (20% vs. 46%, p=0.003), have microcalcification (24% vs. 66%, p<0.001) or be classified as an American Thyroid Association high suspicion nodule (24% vs. 78%, p<0.001). FVPTC underwent FNA at a similar frequency to CVPTC (94% vs. 90%, p =0.454), but was more likely to have benign or indeterminate cytology (71% vs. 18%, p<0.001).

**Conclusion:** FVPTC lacks many of the high-risk US features seen with CVPTC. Surgeons should be aware of FVPTC’s subtle US appearance to assure patients undergo a FNA when appropriate.
C12  Optimization of Breast Conserving Surgery Technique

Authors: Shawn Steen, Thomas Duncan, Emma Huebner, Javier Romero, Graal Diaz, Kenneth Waxman

Institution: Ventura County Medical Center

Presenter: Shawn Steen

Objective: Does resection of additional cavity shave margins influence outcomes for breast lumpectomy surgery?

Background: Large randomized trials have shown that resection of cavity shave margins reduces the rates of positive margins and re-excision by half in patients undergoing lumpectomy for breast cancer.

Methods: In a retrospective and age-matched study we analyzed surgical outcomes for 139 breast cancer patients who underwent lumpectomy for invasive or in-situ cancer with or without the routine resection of additional margins from the walls of the lumpectomy cavity.

Results: The additional margins (AM) group had a significantly lower rate of positive final margins and rate of re-excision surgery than the no-additional margins (NAM) group (21% vs. 40%, p<0.01; 27% vs. 37%, respectively). While the size of the primary specimen was smaller in the AM group (148cm³ vs. 161cm³), the total size of both the primary specimen and aggregated additional margins of the AM group was larger than the primary specimen of the NAM group (226 cm³ vs. 161cm³). Despite the greater volume of resected tissue, the collective rate of wound infections, significant seromas, and hematomas in the AM group was lower than in the NAM group (21% vs. 24%).

Conclusions: The routine use of additional shave margins from the cavity walls during breast conservation surgery for invasive and in-situ cancer decreases the risk of positive margins requiring repeat surgery. The use of additional margins produces a larger overall specimen volume without increasing the risk for post-operative complications.
C13 Utility of Routine Modified Barium Swallow Study in Postoperative Esophagectomy Patients

Authors: Oliver S. Eng, Sinziana Dumitra, Loretta Erhunmwunsee, Dan J. Raz, I. Benjamin Paz, Jae Y. Kim

Institution: City of Hope National Medical Center

Presenter: Oliver Eng

Objective: To identify and treat patients at risk for aspiration following esophagectomy

Background: Aspiration is a significant problem for patients following esophagectomy. We have adopted a strategy of implementing routine modified barium swallow study (MBSS) after esophagectomy to provide a coordinated approach with speech pathology. We sought to analyze outcomes in patients at our institution who underwent MBSS after esophagectomy.

Design/Methods: Patients who underwent esophagectomy and subsequent postoperative MBSS were retrospectively identified from a prospectively collected institutional database from 2011-2016. Univariate and multivariate analyses were performed to assess factors associated with perioperative outcomes.

Results: A total of 49 patients were identified, all of whom underwent esophagectomy for esophageal carcinoma. Patients were kept NPO and on enteral feeds via jejunostomy tube prior to MBSS. Median age was 67 years (range 36-85), with the Ivor-Lewis technique performed in 44 (89%) patients. 38 (78%) patients had undergone neoadjuvant therapy. Median length of stay was 8 days (range 7-41). 43/49 (88%) were minimally invasive, 5 (10%) were hybrid (either thoracotomy or laparotomy), and 1 (2%) was open, transthoracic. Anastomotic leak rate was 6.1%. On MBSS, 8 (16.3%) patients demonstrated aspiration or other findings requiring speech therapy. On multivariate analysis, increasing age was associated with aspiration on MBSS (p=0.024, OR 1.17).

Conclusions: MBSS provides an interdisciplinary approach to evaluation and therapeutic intervention of postoperative esophagectomy patients at risk for aspiration. Increasing age is associated with greater aspiration risk on MBSS after esophagectomy.
## PCSA Founders

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Stephanie Acierno
Caucus: Washington/British Columbia/Alaska
Specialty: Pediatric Surgeon
Spouse/Partner: Luther Moyer
Children: Delaney Moyer 9 years old
Cole Moyer 6 years old
Hobbies/Interests: Exploring the Northwest with my family (especially white water rafting) and coaching boys soccer.
Sponsors: Elizabeth Pohlson, Robert Sawin, John Waldhausen

Vatche Agopian
Caucus: Southern California
Specialty: Liver Transplant and Hepatobiliary Surgery
Spouse/Partner: Ani Grigorian
Children: Derek and Marc Agopian
Hobbies/Interests: Basketball and Soccer
Sponsors: Ronald W. Busuttil, David C. Chen, Jonathan R. Hiatt

Shaghayegh Aliabadi-Wahle
Caucus: Oregon/Hawaii
Specialty: Endocrine Surgery
Spouse/Partner: Mark Whale
Hobbies/Interests: Traveling and reading
Sponsors: Paul Hansen, Kevin Reavis, Earl Schuman

Dan E. Azagury
Caucus: Northern California
Specialty: Bariatric/MIS
Spouse/Partner: Tatiana Maratchi Legrain
Children: Olivia, Leo
Hobbies/Interests: Hobbies are focused around family time
Sponsors: Dan Eisenberg, James Lau, Sherry Wren
PCSA New Members: Class of 2017

Elizabeth Benjamin
Caucus: Southern California
Specialty: Trauma and Acute Care Surgery
Spouse/Partner: Ross Benjamin
Children: Isabella
Hobbies/Interests: Cooking
Sponsors: Demetrios Demetriades, Kenji Inaba, Jonathan R. Hiatt

Michael Campbell
Caucus: Northern California
Specialty: Endocrine Surgery
Sponsors: Richard Bold, Quan-Yang Duh, John Ryan

John G. Carson
Caucus: Northern California
Specialty: Vascular/Endovascular
Spouse/Partner: Heather
Children: Theodoros
Hobbies/Interests: Biking, cooking, and reading
Sponsors: Scott Hundahl, Nathaniel Matolo, Samuel Wilson

Taehyun Philip Chung
Caucus: Northern California
Specialty: Colon and Rectal
Spouse/Partner: Seoyoung Kim
Children: Chanwon Avery, Sooyoon Sylvie, and Jiyoon Kyrene Chung
Hobbies/Interests: Passive and active activities
Sponsors: Yanek Chiu, Michelle Li, Laurence Yee
PCSA New Members: Class of 2017

Robin Cisco  
Caucus: Northern California  
Specialty: General Surgery  
Spouse/Partner: Josh Cisco, MD  
Children: Ben (9) and Emily (4)  
Hobbies/Interests: Skiing, cooking, travel  
Sponsors: Quan-Yang Duh, Jeffrey Norton, Wen Shen

David R. DeHaas, Jr.  
Caucus: Oregon/Hawaii  
Specialty: General Surgery  
Spouse/Partner: Lisa DeHaas  
Children: Robert, Nina, and Merideth  
Hobbies/Interests: Skiing, hiking and golf  
Sponsors: Brett Sheppard, Blayne Standage, Jennifer Watters

Yuman Fong  
Caucus: Southern California  
Specialty: Surgical Oncology  
Spouse/Partner: Nicole Bergman Fong  
Children: Abigail, Sandra, and Danielle  
Hobbies/Interests: Bicycling, chamber music, and target shooting  
Sponsors: Lily Lai, Benjaman Paz, Vijay Trisal

Rachel Hight  
Caucus: Northern California  
Specialty: Trauma  
Spouse/Partner: Wesley  
Children: Jared, Caleb, and Sarah  
Hobbies/Interests: Being with family  
Sponsors: Diana Farmer, Joseph Galante, James Holcroft
Shin Hirose
Caucus: Northern California
Specialty: Pediatric and Fetal Surgery
Spouse/Partner: Yvonne Cheng, MD
Hobbies/Interests: Bass guitar and motorcycling
Sponsors: Diana Farmer, James Goodnight, William Schecter

Romeo Ignacio
Caucus: Southern California
Specialty: Pediatric Surgery
Sponsors: Stephen Bickler, Capt. Thomas Nelson, Michael Sise

Patrick J. Javid
Caucus: Washington/British Columbia/Alaska
Specialty: Pediatric Surgery
Spouse/Partner: Sara H. Javid
Children: Iris and Lydia Javid
Hobbies/Interests: Running, politics, and football
Sponsors: Kenneth Gow, Robert Sawin, John Waldhausen

Irene Kim
Caucus: Southern California
Specialty: Transplant Surgery
Spouse/Partner: Thomas Kudrle
Children: Sylvie Kudrle
Hobbies/Interests: Running and rock climbing
Sponsors: Donald Dafore, Carlos Esquivel, Edward Phillips
Dennis Kim
Caucus: Southern California
Specialty: Trauma/Surgical Critical Care
Spouse/Partner: Alexis de Rosenroll
Children: Evan, Matilda, and Walter
Hobbies/Interests: Cooking, camping, watching movies, and MMA (watching not participating)
Sponsors: Christian de Virgilio, Jonathan R. Hiatt, Bruce Stabile

Cindy Kin
Caucus: Northern California
Specialty: Colorectal Surgery
Spouse/Partner: Daniel Gheorghe
Hobbies/Interests: Running, hiking, fostering rescue dogs, and cooking
Sponsors: Mark Welton, Amanda Wheeler, Sherry Wren

Matthew Yi-Chih Lin
Caucus: Northern California
Specialty: General Surgery/ Bariatric
Hobbies/Interests: Basketball, hiking, Los Angeles Lakers, swimming
Sponsors: Jonathan Carter, Hobart Harris, Brian Smith

Edward Miranda
Caucus: Northern California
Specialty: Plastic and Reconstructive Surgery
Sponsors: Michael Abel, Stanley Leong, Laurence Yee
Jessica Beth O’Connell
Caucus: Southern California
Specialty: Vascular Surgery
Spouse/Partner: Raffi Bagdasarian
Children: Fiona and Lily Bagdasarian
Hobbies/Interests: my children & family, skiing
Sponsors: Christian de Virgilio, Jonathan R. Hiatt, Peter Lawrence

Edgardo S. Salcedo
Caucus: Northern California
Specialty: Trauma/Acute Care
Spouse/Partner: Sarah T. Salcedo
Children: Spencer T. and Sydney T. Salcedo
Hobbies/Interests: Swimming, hiking, reading, and technology
Sponsors: Diana Farmer, Joseph Galante, James Holcroft

Bryan Sandler
Caucus: Southern California
Specialty: General Surgery
Spouse/Partner: Kimberly Robbins
Children: Emmanuelle Jean
Hobbies/Interests: Skiing/snowboarding, hiking, and biking
Sponsors: Michael Bouvet, Bard Cosman, Santiago Horgan

Gagandeep Singh
Caucus: Southern California
Specialty: Surgical Oncology
Spouse/Partner: Madhuri Singh
Children: Ajon Singh (son)
Hobbies/Interests: Very involved with career and family
Sponsors: Fred Grannis, Benjamin Paz, Vijay Trisal
PCSA New Members: Class of 2017

Matthew Tadlock
Caucus: Southern California
Specialty: General Trauma and Acute Care
Spouse/Partner: Jacqueline Reardon, D.O.
Children: Kathleen, Megan and Laura
Hobbies/Interests: Hiking, reading, family
Sponsors: Kenji Inaba, Richard J. Mullins, Michael J. Sise

Philbert Yuan Van
Caucus: Oregon/Hawaii
Specialty: General Surgery
Sponsors: Karen Deveney, Martin Schreiber, Jennifer Watters

Marc Zerey
Caucus: Southern California
Specialty: General Surgery
Hobbies/Interests: Running
Sponsors: Jeff Gauvin, Gregory C. Greaney, Stephen Kaminski, Ronald G. Latimer
IN MEMORIAM

Bolek Brant
John E. Connolly
Pieter de Vries
Edward M. Greaney, Jr.
Robert J. Hye
Harry A. Oberhelman, Jr.
Robert W. Rand
Robert T. Schaller, Jr.
Theodore “Ted” Schrock
George Wittenstein
Harvey Zarem
Bolek Brant
1940-2016

Boleslaw Emiljan Zawadzki was born in Warsaw, Poland to Michael and Hallina Zawadski. Because of the instability of Poland during and after World War II, the family escaped from Poland and ultimately found asylum in France for a brief time, then immigrated to the United States in 1959, settling in New York City. He changed his name to Bolek Brant, learned English and attended Hunter College in New York City, graduating in two years. He then went to medical school at the University of Rochester in upstate New York, graduating in 1965.

Bolek interned at the University of Washington where he met his wife, Bonnie. They married in 1967 and had 3 children, Halina (1970), Peter (1974) and Kayla (1978). He did his General Surgery residency at Oregon Health & Science University and was on the staff briefly before entering the U.S. Airforce where he was stationed at Fairchild Air Base near Spokane. On completion of his military service, he returned to Portland and joined the faculty at OHSU and the Portland VA Hospital before joining a successful surgical practice at Providence Portland Medical Center. He was active on the medical staff, service as chief of staff. He joined the North Pacific Surgical Association in 1974 and was president of the Northern Pacific Surgical Association in 1997. He was also a member of several other prominent surgical association.

Bolek retired from clinical practice in 2003. He and his family travel extensively and Bolek and Bonnie participated in their many favorite activities including bridge, music, fishing and visiting with their many friends. They were both knowledgeable about and enjoyed food and wine. Sadly, Bonnie passed away in 2010.

Bolek died unexpectedly while fishing on the Clackamas River on June 2, 2016. He is missed by his family, fellow surgeons and the many friends that he had. He was truly a remarkable man, a great surgeon and a very special colleague.

- Submitted by James and Mary Ann Asaph
IN MEMORIAM

John E. Connolly
1923-2016

On January 20, 2016, at the age of 92, John Earle “Jack” Connolly passed away peacefully, surrounded by his loving family.

Dr. Connolly was born in 1923, in Omaha, Nebraska to Dr. Earle Connolly and Gertrude Connolly. He drew inspiration from his father, a surgeon, and went on to pursue a career in medicine. Jack graduated from Harvard College in 1945 and Harvard Medical School in 1948.

After completing his surgical residency at Stanford University, Dr. Conolly took a position at the Professorial Unit of St. Bartholomew’s Hospital in London. In 1955 he returned to Columbia Presbyterian Medical Center for two years to finish his training as chief resident in the thoracic and cardiovascular surgery department. In 1957 he returned to Stanford as an Assistant Professor of Surgery. He was honored as a Markle Scholar from 1957 to 1962.

In 1965, Dr. Connolly was recruited to establish the Department of Surgery at the University of California, Irvine (UCI).

During his 50 years at UCI, Dr. Connolly pioneered numerous techniques in the fields of cardiovascular, vascular and general surgery including the development of a mechanical pump for heart bypass surgery. He also performed the first combined kidney-pancreas transplant west of the Mississippi in 1969. In addition to his many surgical contributions, he authored over 500 scientific papers and book chapters.

Dr. Connolly’s career took him all over the world with innumerable distinctions and visiting professorships, including honorary fellowships in the Royal College of Surgeons England, Ireland, and Edinburgh, and honorary membership in the Japan Surgical Society. He was also President of the International Cardiovascular Society, a member of the James the Fourth Association of Surgeons, and Vice-Chairman of the American College of Surgeons Board of Regents. The John E. Connolly Surgical Society was created in 1975 with the purpose of fostering mentorship and camaraderie among his former surgical residents.

In addition to being a dedicated surgeon, teacher and mentor, Jack was a devoted husband to his wife, Ginny, and a beloved father to his three children, John, Peter, and Sarah. Dr. Connolly remained at UCI as the last original faculty member, teaching in the classroom for nearly half a century. To many of us, Jack Connolly was much more than a colleague; he was a dear friend.

- Submitted by Michael Stamos, M.D.
Pieter de Vries
1921 - 2016

Pieter De Vries was born in San Francisco, California on June 28, 1921. He was a native of the Bay Area most of his life, attending Lowell High School and The University of California, Berkeley and later Stanford University, where he graduated in 1943. At Cal he lettered in Track running the high hurdles. He went on to Stanford Medical School finishing in 1947 and was commissioned into the US Navy serving in the Pacific Theater as a ship’s surgeon on a destroyer until 1949. He completed his general surgical training at the University of Michigan under Fred Coller. He then went on to The Boston Children’s Hospital with Dr. Robert E. Gross from 1951-53 and spent a final year in Seattle working with the legend, Dr. Herbert E. Coe who was the first person in America to limit his practice to Pediatric Surgery. Piet then returned to San Francisco as the first Pediatric Surgeon to establish his practice in the Bay Area. He was a true scholar and maintained a research lab studying embryology and congenital anomalies over the major portion of his career.

His first academic appointment was at Stanford University Medical School and advanced to become Professor of Surgery and Chief of Pediatric and General Surgery at the Santa Clara Medical Center. He went on to The University of California, Davis where he was Chief of Pediatric Surgery with Bill Blaisdell and later spent five years at the University of Kansas as Chief of Pediatric Surgery. It was there that he did his seminal research in ano-rectal malformations together with Dr. Alberto Pena. He travelled widely both in the US and in Europe demonstrating a newer and advanced technique in surgery of this malformation which has been widely accepted as the standard treatment worldwide. He was a charter member of the American Pediatric Surgical Association and together with Stephen Gans and Bud Meeker conceived the Pacific Association of Pediatric Surgeons. He joined the Pacific Coast Surgical Association in 1995.

Piet returned to the Bay Area in 1988 and joined the faculty of The University of California, San Francisco as Professor and Chief of Pediatric Surgery at the California Pacific Medical Center retiring finally in 1996.

Piet was an avid sailor, racing and cruising sailboats until well into his 80’s and also enjoyed fly fishing in the Trinity Alps and Stanford football. He is survived by his wife Louise and their 8 children and step children, 15 grandchildren and one great grandchild. He died peacefully at the age of 94 at home in Marin County.

- Submitted by John L. Cahill, M.D., F.A.C.S.
Edward M. Greaney, Jr.
1919-2015

On July 14, 2015, Dr. Edward Michael (Mike) Greaney, Jr. died peacefully in his home. Mike was the only son of Edward Michael and Evelyn Greaney, born on May 28, 1919 in Stamford, Connecticut. He is survived by his children, Mary Ellen Kirst (Bill), Kathleen Delgado (Tony), Michael Greaney (Patty), Patricia Williams (Dick), Gregory Greaney, M.D., (Anne), Margaret Samaniego, (Luis), Elizabeth Phillips, Deirdre Apablaza (John) and Teresa Denison (Michael). Edward is also survived by 26 grandchildren and 16 great-grandchildren. He was predeceased by his wife, Mary Cavanaugh Greaney and his daughter Deborah Parker. Mike is a graduate of Fordham University and Jefferson Medical College. He was commissioned a Lieutenant (junior grade) in the United States Navy Medical Corps in March 1943 immediately after graduation from medical school and began his internship at Brooklyn Naval Hospital. After combat training at Camp LeJuene, he was assigned as Battalion Surgeon to the 3rd Battalion (Artillery) of the 12th Marine Regiment, of the Third Marine Division. He participated in the Battle of Iwo Jima. During this tumultuous time, he married the love of his life, Mary Cavanaugh in March of 1943, and the first two of their ten children were born during these war years.

After concluding his military service in 1947, he completed a residency in general surgery at the Long Beach Veterans’ Hospital in 1951. Dr. Greaney started private practice in general and pediatric surgery and enjoyed a long and distinguished surgical career. He spent the majority of his practice at St. Joseph Medical Center in Burbank, where he eventually became Chief of Staff in 1962. Dr. Greaney was an adjunct clinical professor at LA County USC Medical Center in the Dept. of Surgery until his retirement in 1989, attaining emeritus status and an honorary lifetime membership in the Society of Graduate Surgeons.

He was a Fellow of the American College of Surgeons entering in 1953, and was also a Governor of the College. Among his honors and accomplishments were: President of The Southern Californian Chapter of the American College of Surgeons; President of USC Professional Staff Association; member of Pacific Coast Surgical Association, Western Surgical Association, Society of Surgery in the Alimentary Tract and Los Angeles Surgical Society. He was beloved and respected by the countless patients he treated as well the physicians and nurses with whom he worked over nearly 40 years of surgical practice. Edward and Mary settled in the San Fernando Valley and were members of St. Francis de Sales Parish, where all the children attended school. They were founding members of the Catholic Physicians Guild and the Right to Life League. Mike was a long-time member of Lakeside Golf Club where he enjoyed playing golf and made many life-long friends. After he retired, Mike and Mary moved to their home on Beach Road in Capistrano. In 2001, they moved to Pasadena to be closer to their children and grandchildren. The family would like to express our gratitude to Dr. Raul Mena and Providence TrinityCare Hospice for their care in his final months.

- Submitted by Gregory Greaney, M.D., F.A.C.S.
IN MEMORIAM

Robert J. Hye
1953-2015

Robert “Bob” James Hye, M.D., one of the leading vascular surgeons in San Diego, died of cancer of the pancreas in 2015. He was born on August 7, 1953, to James and Betty Hye in Rapid City, South Dakota. He grew up the eldest of three sons in Colorado Springs, Colorado. Bob graduated magna cum laude from the University of Colorado in 1975 with a B.A. Degree in molecular biology and went on to medical school at Northwestern University in Chicago, Illinois. After graduating from medical school in 1979, he moved to San Diego where he completed his general surgery residency at the University of California, San Diego, under the direction of Professor Marshall Orloff, the founder of the Department of Surgery. He married in 1986 and started a family while completing a fellowship in vascular surgery at Scripps Green Hospital under the auspices of UCSD.

Bob’s entire surgical career was spent in San Diego. From 1986 to 1997 Bob was a general and vascular surgeon at UCSD during which he was Chief of Vascular Surgery at the Veterans’ Affairs Hospital. At UCSD he achieved academic promotion to Associate Professor of Surgery. In 1997 he moved his practice to Kaiser Permanente where he served as Chief of Vascular Surgery from 2004 to the present and was awarded Kaiser Partner of the Year in 2010.

In addition to his main activities in peripheral vascular surgery, he joined with Dr. Orloff in the conduct of prospective, randomized studies of bleeding esophageal varices that focused on emergency portacaval shunt. These studies resulted in some 20 publications in major scientific journals.

Bob was an outstanding vascular surgeon committed to excellence in research by being the San Diego Area Research Chair for SCPMG. His academic interests included carotid and peripheral arterial disease. Bob published over 100 articles and book chapters, and was the Principal Investigator in 40 clinical research trials to better the field of vascular surgery. He was also responsible for founding registries to track abdominal aortic aneurysms within the Kaiser Permanente System. As a physician, educator, researcher, and scholar, Bob’s life is a testament to vascular surgery—the surgical specialty he cultivated and helped flourish at UCSD and in the Southern California region. His counsel, enthusiasm for vascular surgery, commitment to resident education, and leadership was especially significant.
Bob worked hard his entire life. He never talked about the awards lining his office walls. He took advantage of every day and never complained about his illness, referring to it as only “bad luck.” He was pragmatic, sharp, and funny. He was deeply involved in raising their three daughters who were his ultimate priority and the loves of his life. Bob shared his passions with his children—teaching them to ski, fish, and camp at very young ages. As they became adults he passed to them his love of music and reading.

Bob was preceded in death by his father, James Edward Hye. He is survived by his mother Betty Hye of Colorado Springs, Colorado, his daughters Abbey, Taryn Emma, and his former wife Sandy Heisterkamp, all of La Jolla, California; brothers Richard Stringer-Hye (Suellen) of Nashville, Tennessee, and Seve (Kathy) of San Diego, as well as eight nephews and nieces. He is also survived by his long-term partner, Sonni Longson, also of San Diego.

- Submitted by Marshall J. Orloff, M.D., F.A.C.S.
IN MEMORIAM

Harry A. Oberhelman, Jr.
1923-2016

Harry A. Oberhelman, Jr. was born in Chicago, Ill. on November 15, 1923, the eldest son of a surgeon, and died peacefully in his home on the Stanford campus on February 10, 2016, with Betty, his wife of 70 years, at his side.

Harry started college at Yale, where was a scholar and varsity football player, but returned to his native Chicago to finish college and medical school at the University of Chicago, where he received his M.D. degree in 1946. He remained in Chicago for his residency under the legendary Lester Dragsted and stayed there on the faculty until 1959, when he moved to the “new” Stanford Medical School on the Sanford campus.

Harry O, as he was known to many, was the icon of Stanford Surgery for over 50 years. He was adored by his trainees and by his patients. More than 160 residents received their surgical education under his tutelage.

Harry dodged more bullets than one could imagine. In 1980 he underwent emergency coronary artery bypass grafting by Norman Shumway and his team. For many years Harry thought his symptoms that fateful morning were due to indigestion. In 1999, he underwent a stent graft for an abdominal aortic aneurysm and attended the Rose Bowl 2 weeks later. Ten years thereafter the aneurysm ruptured and he underwent emergency graft replacement in an operation requiring 40 units of blood. And he insisted that the resulting incisional hernia be repaired against the advice of his cardiologist and the anesthesiologists. We were convinced that Harry would live forever.

When Harry retired from active practice in 2001, he became the Medical Director of International Medical Services at Stanford University Hospital, a job that required considerable travel to the countries in the Pacific Rim. He did this with distinction until shortly before his death.

Harry was honored for his teaching by both local and national organizations. A Professorship in his name has been established at Stanford Medical School.

Harry O was a close colleague and dear friend. He will be membered fondly by his trainees and his patients and by his many friends and co-workers. We extend our heartfelt sympathy to Betty and their children.

- Submitted by James B. D. Mark, M.D.
  Thomas M. Krummel, M.D.
  Mark Lane Welton, M.D.
Robert W. Rand
1923-2013

Dr. Robert Rand died on December 14, 2013 at the age of 90. Dr. Rand was a gifted, highly accomplished neurosurgeon.

Dr. Rand was the son of Carl W. Rand, also an eminent neurosurgeon, and a native of Los Angeles. He completed undergraduate work at Harvard University and received the M.D. degree at the University of Southern California School of Medicine in 1947. He was trained in Neurosurgery at the University of Michigan, where he also received an M.S. in Surgery and a Ph.D. in Anatomy. Dr. Rand served in the U.S. Navy as Apprentice Seaman and Naval Cadet in Medicine from 1943-46 and Lt. Commander from 1954-56.

Following residency training, Dr. Rand spent two years at the University of Michigan as Instructor in Surgery and Anatomy. He joined the faculty of the UCLA School of Medicine in 1953 and rose to the rank of full Professor in the Division of Neurological Surgery of the Department of Surgery. Dr. Rand had a busy academic and clinical practice at UCLA and brought many innovative techniques for use by him and his colleagues. He also taught extensively in many areas of anatomy, surgery, and neurosurgery. Following his career at UCLA, he served as an Associate Medical Director at the John Wayne Cancer Center in Santa Monica and performed research and clinical trials on the use of immunotherapy for the treatment of malignant brain tumors.

Dr. Rand authored approximately 300 scientific articles, presented almost 400 scientific lectures around the world, and wrote eight major textbooks on subjects in neurosurgery. Honors included election to Alpha Omega Alpha, a Professional Achievement Award from UCLA in 1975, and a Lifetime Achievement Award from the International College of Surgeons in 1995.

Dr. Rand is remembered by his colleagues at UCLA as a highly creative, intuitive, and skilled surgeon who traveled widely, saw possibilities for adapting techniques to use at UCLA, and developed new ideas. These included use of operating microscope, with publication of a book on microneurosurgery; cryothalamotomy; pituitary cryoablation; and obliteration of aneurysms using iron particles and an external magnet. His was a very generous spirit, and he was most encouraging to residents and junior faculty. Dr. Rand had a fertile and inquiring mind, tempered by a healthy irreverence that informed a keen wit.

Dr. Rand is survived by Helen, his wife of 63 years; their sons, Carl Wheeler Rand II and Richard Pierce Rand, M.D.; and his two sisters and four grandchildren.

- Submitted by Jonathan R. Hiatt, M.D.
IN MEMORIAM

Robert T. Schaller, Jr.
1934-2014

Dr. Robert Thomas Schaller, Jr., a long time member of the Pacific Coast Surgical Association, passed away at Evergreen Hospice in Kirkland, WA on December 7, 2014, at the age of 80. He died peacefully after a short illness in the presence of his family. Dr. Schaller was born on October 15, 1934, in Hamburg, NY. He attended Yale University (class of ‘56), where he was captain of the track team. While there he was a top class mile runner nearly breaking the 4 minute barrier when no one else had yet done so. He attended Harvard Medical School (class of ‘60), and moved to Seattle, WA for his surgical residency at the University of Washington. While in Seattle he became an accomplished mountain climber with numerous ascents of Rainier and many other mountains in the Cascades, Olympics and Alaska. During the 1960s while a resident at UW, he was involved in an effort by the CIA to climb some of the highest mountains in the Himalaya in order to monitor the Chinese development of nuclear weapons (described in a 2007 article in the Seattle PI, at http://www.seattlepi.com/local/article/Spy-Robert-Schaller-s-life-of-secrecy-betrayal-1232285.php). During the course of one of those climbs he made a solo ascent of Nanda Devi at 25,643 feet the 23rd highest mountain in the world, which at the time set the American solo altitude record. He subsequently was a member and team physician of the American K2 expeditions in 1975 and 1978. The latter was the third successful team in history to summit that mountain, the second highest in the world.

Dr Schaller was a talented and prolific pediatric surgeon in Seattle, conducting thousands of surgical procedures on sick children at Seattle Children’s Hospital. He was a passionate member of the teaching faculty at the hospital and a Clinical Professor of Surgery at the University of Washington. His energy and enthusiasm for his work was infectious and he inspired many residents to seek a career in pediatric surgery. He had a love of photography and took countless photos of both mountains and his operative cases which he used in his lectures to students, residents and fellows which now reside as a large teaching file.

Dr Schaller lived a full life, and will be missed by many. He is survived by seven children from three marriages, three grandchildren, his younger brother, Chris, and his wife, Teresa.

- Submitted by John Waldhausen, M.D.
Theodore “Ted” Ross Schrock  
1939-2016

Ted Schrock, a powerful man with a commanding presence, served as the Chair of Surgery at UCSF from 1993-1999 and subsequently as Chief Medical Officer for the UCSF Medical Center from 1999 until his retirement in 2004. He was born in an Amish farming community in Berne Indiana and grew up in Decatur where he excelled in athletics and academics. Infused with mid-western values and the importance of education, Ted attended Indiana University where he was elected to Phi Beta Kappa, was named “Premed Student of the Year” and received his AB degree with Highest Honors.

He spent his medical career at UCSF. As a medical student he was elected President of the Student Body and a member of the Alpha Omega Alpha Honor Society. At his 1964 graduation ceremony he received the coveted “Gold Headed Cane” given to the student who most exemplified the qualities of the true physician.

He subsequently did his surgical residency at UCSF including two years as a Research Fellow at the Harvard Medical School. As a surgical resident, he designed a method for atrio-caval shunting to achieve distal control of liver injuries involving the retro-hepatic vena cava—the famous “Schrock Shunt”.

Legend has it that upon completion of his residency in 1971, J. Englebert Dunphy, the Chair of Surgery, assigned his newest faculty recruit, Dr. Schrock, to specialize in colorectal surgery. Ted took this assignment with his usual enthusiasm and industry and soon gained an international reputation in this field. He was a pioneer in diagnostic and therapeutic colonoscopy and was the first surgeon to be elected President of the American Society of Gastrointestinal Endoscopy. He was also a founding member of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), now the premiere organization in this field.

Ted was a superb surgeon. He performed complex operations with thoughtful preparation, beautiful exposure and no wasted motion. He made particular contributions to patients with inflammatory bowel disease and colorectal cancer.
Theodore “Ted” Ross Schrock  
1939-2016

Ted was an outstanding Chair of Surgery. He led by example, supported his “troops” and trained generations of surgical residents over his 33 year career. Many of his residents went on to fellowships in Colorectal Surgery because of his influence. If I had to use one word to describe Ted’s tenure as Chair, I would choose integrity. Ted spent 56 years with his high school sweetheart, Barbara, the mother of their two sons Brian and Todd. They took particular pleasure in their two granddaughters Averi and Rachel. Their life outside of surgery was active and full. They became enthusiastic SCUBA divers and under-water photographers, making more than 1000 dives all over the world.

Following retirement in 2004, Ted and Barbara moved to Montana where they bred Arabian horses. Ted, as usual, became expert at the biology and technology of equine breeding. After a decade in Montana, they moved to Scottsdale, Arizona where they enjoyed golf with their many friends. They also became enthusiastic travelers, exploring the world by cruise ship.

Ted faced his final illness, esophageal cancer, with courage and fortitude with Barbara at his side. He will be remembered as an outstanding leader, superb surgeon, beloved teacher and faithful friend.

- Submitted by William P. Schecter, M.D., F.A.C.S.
George Wittenstein
1919-2015

On June 14, 2015, Dr. George (Jurgen) Wittenstein peacefully passed away at his home in Santa Barbara at the age of 96. He was born in Tubingen, Germany in 1919, into a family that honored and instilled in him a strong sense of intellectual and personal responsibility, and a deep respect for justice. His mother Elizabeth was a successful businesswoman, and his father Oskar was a doctor of chemistry, concert pianist, and aviation pioneer.

In the years leading up to the Second World War, George became increasingly concerned about the militaristic and fascist direction that Germany was taking, and especially the brutalization of Germany’s Jewish citizens. While a medical student at the University of Munich, he became a member and active supporter of the White Rose student resistance and protest movement against Hitler and Nazism. He was one of the few members to survive the brutal crackdown and elimination of the White Rose organization in 1943 - 1944. Following completion of his medical degree, he then interned at Krankenhaus Schwabing in Munich.

After the war, George was able to get temporary papers for England, where he frequently lectured at universities about his resistance experiences. He was finally granted a visa to the United States, where he was re-united with Elizabeth Hartert, whom he had married 2 years earlier in Germany. He then spent a year as a surgical resident at Peter Bent Brigham Hospital in Boston where he befriended a fellow trainee named Wiley F. Barker, beginning a relationship that would continue when both separately moved to California years later. After an additional year as a trainee at University of Rochester, he ended up at University of Colorado where he finished his general surgical training, and also completed his cardiothoracic training there. During this time, Elizabeth also completed her own training in anesthesiology, and for a time was Chief of Anesthesia at Denver General Hospital.
George Wittenstein
1919-2015

In 1960, the Wittenstein family moved to Santa Barbara where they both entered into private practice in their respective fields at Cottage Hospital. George also renewed his relationship with Wiley Barker, who had moved to California some years earlier to become the initial Chief of General Surgery at the brand new UCLA School of Medicine, and in 1964, he joined the clinical faculty at UCLA. In 1975, the UCLA Department of Surgery began to send residents to the Los Angeles County – Olive View Hospital in the San Fernando Valley, which at the time was a community hospital staffed only by part-time community surgeons. Recognizing the necessity of full-time faculty to oversee and mentor these trainees, Wiley Barker recruited George as the Chair of the Department of Surgery and first full-time faculty member at Olive View. George’s only caveat on accepting was that he would continue to live in Santa Barbara on the weekends and commute down during the week. He served as the Chair of the Department of Surgery of the newly renamed Olive View – UCLA Medical Center from 1976 until his retirement in 1991, when he permanently returned to Santa Barbara.

A true renaissance man, George was a gifted photographer, poet, and writer, who amassed a significant collection of pre-Columbian meso-American artifacts. He loved hiking and camping with his family, built furniture, and served in multiple capacities at four Santa Barbara hospitals, the Santa Barbara Museum of Art, and Friends of the UCSB Library. He also returned yearly to Germany where he would lecture and teach in various medical schools and hospitals on primarily cardiovascular surgery, as well as his experiences as a member of the White Rose. In recognition of his involvement in the resistance, for his contributions to German cardiac surgery, and for promoting scientific exchange between the United States and Germany, he was awarded the Commander’s Cross of the Federal Republic of Germany, and the Bavarian Service Medal (Bavaria’s highest honor).

He is survived by his second wife Christel Bejenke, M.D. (his first wife Elizabeth died in 1966); his children Eva Munday, Nemone Wittenstein-Helmling, Andreas Wittenstein, and Catharina Wittenstein-Garrow; nine grandchildren; and five great-grandchildren.

- Submitted by Robert S. Bennion, M.D.
Harvey Zarem
1932-2015

Harvey A. Zarem, M.D., Emeritus Professor of Surgery at UCLA, died on November 1, 2015. Harvey was living and working in Savannah, Georgia and was 83 years of age. A native of Savannah, Harvey attended Phillips Academy in Andover, Massachusetts, Yale University, and Columbia University College of Physicians and Surgeons. His surgical training included internship at Johns Hopkins Hospital, research fellowship at Peter Bent Brigham Hospital, residency at Boston City Hospital, post-doctoral fellowship at New York University, and plastic surgery residency at Johns Hopkins. Following training, Harvey joined the faculty of the University of Chicago and rose to become head of the Section of Plastic Surgery. He was recruited to UCLA as Professor and Chief of Plastic Surgery in 1973 and served in that role until his retirement from the University in 1987. In subsequent years, he practiced plastic surgery in Santa Monica until 2012 and then in Savannah. Harvey was a member of the PCSA since 1981.

Harvey was an outstanding academic plastic surgeon, with a research interest in the problems of ischemic tissues and an extensive bibliography. Among many leadership roles in his profession, he served as a Director of the American Board of Plastic Surgery and as a member of the Residency Review Committee for Plastic Surgery and the Executive Committee of the American Society of Plastic and Reconstructive Surgeons. Harvey was an exceptionally gifted clinician and a popular and dedicated teacher whose educational roles included chairmanship of third and fourth year surgical electives at UCLA.

We who were privileged to know and work with Harvey remember him as a fine leader and an excellent surgeon, with a keen wit and an incisive intellect. He also was a valued friend.

- Submitted by Ronald W. Busuttil, M.D., Ph.D.
ARTICLE I

Section 1. The name of this Association shall be THE PACIFIC COAST SURGICAL ASSOCIATION.

ARTICLE II

Section 1. The object of the Association shall be to advance the science and practice of surgery.

ARTICLE III

Section 1. The Association shall consist of Active, Senior, Honorary, and Non-Resident Members.

Section 2. Active membership shall be limited to 250 Members, the number elected each year to be left to the discretion of the Council.

Section 3. No one shall be eligible for membership unless his/her practice is limited to surgery and he/she has established a reputation as a practitioner, author, teacher or original investigator, and has been recommended by the Council. Candidates must be in practice for two years on the West Coast. The candidate shall also have been certified either by the American Board of Surgery, the appropriate specialty Board, or its foreign equivalent.

Section 4. The Council shall have the power of decision in the consideration of each candidate’s eligibility and its judgment upon such eligibility shall be final. No candidate for membership shall be voted upon at the executive session of the Association unless recommended by the Council.

Section 5. Proposals for membership shall be made by Members on applications furnished by the Secretary-Treasurer of the Association. The proposal of a candidate for membership shall be supported by letters to the Secretary-Treasurer from each of the three sponsors who shall vouch for his/her character and standing. The application and letters shall be presented to the Council by the Councilor of the region recommending the candidate.

Section 6. Proposals for membership, properly filled out, accompanied by the necessary endorsements and confidential letters from the sponsors, shall be in the hands of the Secretary-Treasurer at least six months before the date of the annual meeting. Three months before the annual meeting, the Secretary-Treasurer shall send to each member of the Association a list of all candidates for active membership and a printed summary of their qualifications, including educational attainments and professional positions. Members are encouraged to submit to the Council written comments on the candidates’ qualifications for membership. The Council at its annual meeting shall, after full consideration of all information available, recommend to the Association such candidates as are qualified for membership. The Council shall have the power to request from any member of the Association a careful and unbiased investigation.
of the qualifications of any candidate for election to the Association. Any candidate for active membership may be assigned to a member of the Council for careful investigation as to his/her personal and professional qualifications.

Section 7. After recommendation by the Council, election to membership shall be by ballot at the executive session of each annual meeting and if three-quarters of the ballots are favorable, the candidate shall be declared elected. Candidates for active membership not brought forward to the Association for election by the Council in the first year after nomination may be reconsidered in the two subsequent years at the request of the Councilor and with support from their region.

Section 8. Candidates who have not been recommended for active membership by the Council three years after nomination, shall be withdrawn and their sponsors notified. This action shall not prevent the reproposal of such candidates for membership. Any candidate for membership who has been recommended by the Council, but not selected by the Association cannot be proposed again for membership for at least two years.

Section 9. Prospective Members after election must qualify within three months by the payment of the initiation fee and annual dues to the Secretary-Treasurer and by filing a recent 8x10 photograph with the Association. To become an Active member, the nominee shall be expected to attend the first Annual Meeting after election to be introduced to the Association and to receive the certificate of membership. Should the nominee fail to attend the first subsequent meeting, the second Annual Meeting must be attended. If the nominee is unable to attend the second meeting, membership will not be conferred subject to action by the Council. Fees contingent on membership will not be refunded.

ARTICLE IV

Section 1. Active members shall have a practice that is limited to surgery.

Section 2. All Members shall automatically become Senior Members at the age of sixty (60) years. They shall pay dues and have the privilege of voting and holding office but are excused from the annual meeting attendance requirement.

Section 3. Active and Senior Members shall be required to pay association dues. They have the privilege of voting and holding office.

Section 4. Members are considered Retired upon reaching the age of seventy five (75) or retirement from active clinical practice, whichever occurs first. They are no longer required to pay Association dues.

Section 5. Candidates for Honorary Membership shall be nominated by the Council and elected by ballot at the executive session of the annual meeting. Honorary Members shall not be required to pay dues or initiation fees and shall enjoy all the privileges of other Members except those of voting and holding office.
Section 6. A Non-Resident Member shall be a Member under the age of sixty (60) who no longer resides in the Pacific Coast geographical area. He/She shall be excused from attendance requirements. He/She may vote at such meetings as he/she attends and enjoy all the privileges of the Association except that he/she may not hold office or membership on standing committees. He/She shall pay annual dues. A request for non-resident status must be submitted in writing to the Secretary-Treasurer and shall be granted only by the Council. Upon written request the Council may restore a Non-Resident Member to active status. At its discretion, the Council may terminate membership as a Non-Resident Member. A Non-Resident Member shall automatically become a Senior Member at age sixty (60).

Section 7. The resignation of a Member may be accepted at the discretion of the Council.
Section 4. The Secretary-Treasurer shall keep the minutes of the Association and shall issue, at least six weeks prior to the annual meeting, a preliminary notice of the time and place of the meeting, and the business to be transacted. He/She shall issue the final program of the annual meeting and a list of the names of the candidates for Membership who are under consideration by the Council. He/She shall attest all official acts requiring certification, in connection with or independent of the President, notify officers and Members of their election and take charge of all papers not otherwise provided for. He/She shall serve as Secretary-Treasurer and keep minutes of the meetings of the Council. He/She shall, with the President, sign the certificates of Membership and receive all monies and funds belonging to the Association. He/She shall pay the bill of the Association, collect all dues and assessments as promptly as possible, report to have, in accordance with the Bylaws, regulating the same, forfeited their Membership. It shall be the duty of the President of the Association to appoint an Audit Committee, consisting of two (2) Members of the Association, whose duty it shall be to consult with a Certified Public Accountant, to examine the books of the Secretary-Treasurer, and to report on the same to the membership during the annual meeting. A full audit shall be performed as determined by the President and President-Elect in the final year of the Secretary-Treasurer term.

Section 5. It shall be the duty of the Historian to assemble and preserve the Archives of the Association for storage and reference. The Archives shall consist of the roster of the members of the Association since its inception, and such photographs as are available. At each Annual Meeting of the Association, the Historian shall be called on by the President to give a presentation of historical significance to the membership.

Section 6. The Recorder shall, as Chairman of the Program Committee, assemble the scientific program and forward it to the Secretary-Treasurer at least two months before the annual meeting. The Recorder shall receive all papers and reports of discussion on papers presented before the Association and as the Chairman of the Program Committee take charge of the publication of the papers presented before the Association.

ARTICLE VII

Section 1. Vacancies occurring in the offices of the Association shall be filled by appointment by the President until the next meeting. He/She shall also have the authority to appoint all committees not otherwise provided for.

ARTICLE VIII

Section 1. The Constitution may be amended at any regular meeting by a written resolution embodying the proposed changes, which shall lie over for one year and which must receive approval by two-thirds of the members present and voting.

ARTICLE IX

Section 1. The President, the two Presidents-elect, Vice-President, Secretary-Treasurer, Recorder and Historian shall act as ex-officio members of the Council with the right to vote.
CHAPTER I

Section 1. The Pacific Coast Surgical Association shall meet annually at such time and place as may be designated by the Council, preferably on President’s Day weekend.

Section 2. There shall be at least one annual executive session of the Association, at which the order of business shall be as follows: (a) reading the minutes of the last meeting; (b) reports of the Secretary-Treasurer, Recorder and Historian; (c) reports of the Council; (d) report of Program Committee; (e) reports of representatives of the Association to the American Board of Surgery and to the American College of Surgeons; (f) unfinished business; (g) new business; (h) report of Auditing Committee; (i) report of Nominating Committee; (j) election of officers; (k) election of Members; (l) induction of new officers; (m) adjournment.

CHAPTER II

Section 1. The Members present at any executive session shall constitute a quorum for business.

CHAPTER III

Section 1. The annual dues and the initiation fee shall be recommended by the Council and voted upon by the membership each year at the annual meeting. Members may be exempted from payment of dues at the discretion of the Council.

CHAPTER IV

Section 1. The usual parliamentary rules (Robert’s Rules) governing deliberative bodies shall govern the business workings of the Association.

CHAPTER V

Section 1. All questions before the Association unless otherwise provided shall be determined by a majority vote of the members present and voting except changes in the Constitution and Bylaws require a two thirds (2/3) majority and election of new members require a three fourth (3/4) majority.

CHAPTER VI

Section 1. The President shall deliver an address at the annual meeting of the Association.

CHAPTER VII

Section 1. The Secretary-Treasurer and Recorder of the Association shall receive at each annual meeting a draft from the President for such sum as may be voted by the Council for services rendered the Association, and to this shall be added the necessary expense incurred in the discharge of his/her official duties.
CHAPTER VIII

Section 1. Those members submitting titles of essays shall supply the Recorder with the title and an abstract of the proposed essay. The program committee shall have the responsibility for choosing the primary discussant. The discussant shall receive a copy of the essayist’s paper not later than two weeks before the annual meeting. The presenting author and opening discussant shall submit the manuscript and a text of the discussion ready for publication just prior to presentation.

CHAPTER IX

Section 1. The Council shall consist of five members, of which four are elected, the fifth member to be the retiring president who automatically serves for one year. The President, President-Elect, Vice President, Secretary-Treasurer, Recorder and Historian shall act as ex-officio members of the Council with the right to vote. One member of the Council shall be elected annually to serve four years. Any member of the Association shall be eligible for membership on the Council, provided that each regional section of the Association shall always be represented on the Council. These regional sections, which may be enlarged at the will of the Association, shall consist, respectively, of the Members residing in 1) Washington, British Columbia and Alaska, 2) Oregon and Hawaii, including the U.S. Pacific Territories 3) Northern California to, but not including Santa Barbara and Bakersfield, 4) Southern California including Santa Barbara and Bakersfield. The President shall be notified by any Councilor who is unable to attend a meeting of the Council. Upon such notification, the President shall appoint from the Councilor’s regional section an alternate who shall act as Councilor for that meeting.

Section 2. The President shall preside as Chairman of the Council and the Secretary-Treasurer shall keep record of its proceedings.

Section 3. The duties of the Council shall be: 1. To investigate candidates for membership and report to the Association the names of such persons as are deemed worthy. 2. To take cognizance of all questions of an ethical, judicial, or personal nature, and upon these, the decisions of the Council shall be final, provided that appeal may be taken from such decision of the Council to the Association under a written protest, which protest shall be voted upon by the Association. 3. All resolutions before the Association shall be referred to the Council before debate, and the Council shall report by recommendation at the earliest hour possible. 4. The Program Committee and the Council shall have power to invite guests to appear on the scientific program. 5. The Council at the invitation of the President shall meet at some date preceding the annual meeting for consideration of matters of importance with reference to the annual meeting and particularly with reference to the eligibility of proposed candidates for admission.

CHAPTER X

Section 1. The Council shall have full power to withdraw from submission for publication any paper that may be referred to it by the Association, unless specially instructed to the contrary by the Association, which shall be determined by vote.
CHAPTER XI

Section 1. The President shall appoint for the following annual meeting a Committee on Arrangements, and the Program Committee as provided in the Constitution. The Program Committee shall consist of four members representing each of the caucuses and a chairman. A Program Committee member shall serve for three years and shall be eligible for reappointment for one additional term.

CHAPTER XII

Section 1. Active membership shall be forfeited by failure to be present at four consecutive meetings. After failure to attend three consecutive meetings, the Secretary-Treasurer will notify the member that a fourth consecutive absence will terminate his/her membership. In cases where the fourth absence was caused by extremely compelling circumstances, the Council may at its discretion, stay the termination of membership. Failure by any member of the Association to pay dues for one year may be considered sufficient cause to drop the member from the membership roll on recommendation of the Council to the Association. Membership also may be forfeited for reasons deemed sufficient by the Association.

Section 2. Attendance at an annual meeting shall be defined as registration with Secretary-Treasurer, payment of the registration fee and attendance at not less than one scientific session. Retired members and those exempt from dues because of illness shall have the privilege of attending the annual meeting at a registration fee determined by the Council.

Section 3. At the discretion of the Council, and for good and sufficient reasons, an Active Member may be transferred to the list of Senior Members.

CHAPTER XIII

Section 1. A paper shall not be read before this Association which has been published previously or which does not deal with a subject of surgical importance. The member shall close the discussion.

Section 2. The maximum time allowed essayists shall be 10 minutes, except by permission of the Program Committee. The primary discussant shall be allowed 5 minutes, each subsequent discussant 2 minutes, and final closing discussant 5 minutes.

Section 3. No paper read before this Association shall be published in any medical journal or pamphlet for circulation as having been read before the Association without having received endorsement of the Program Committee.

Section 4. At the discretion of the Program Committee, poster sessions may be held during the scientific meeting. Papers representing work from these poster sessions may be submitted for consideration for publication to the journal of their choice.
CHAPTER XIV

Section 1. The Scientific Meetings shall be open to any member of the association in good standing in his/her profession, provided he/she establish his/her identity, or their invited guest. Only an officially invited guest may register and attend functions.

Section 2. Members may request invitations for guests by applying to the Secretary-Treasurer in writing at least one month prior to the first day of the annual meeting. The Council shall determine the number of guests which may be invited. Invitations to guests shall be issued only by the Secretary-Treasurer. A Member requesting that an invitation be extended to a guest shall assume such financial responsibility as may be determined by the Council for the guest so invited. The President may invite distinguished members of the profession to be guests of the Association.

Section 3. The Association shall have no financial responsibility for invited guests, except distinguished guests invited by the President.

CHAPTER XV

Section 1. Pursuant to Article V, Section 3, of the Constitution, the Nominating Committee shall request some specific information from each of the four regional sections where new candidates are required for the offices of the President-Elect, Secretary-Treasurer, Recorder, and Regional Councilor. An election with written mail ballot shall be held within each regional section involved in selecting candidates for each of these four offices. The Regional Councilors will conduct the balloting and provide the Nominating Committee with a report reflecting the wishes of their caucus. The Nominating Committee may review the ballots if questions arise about the voting process.

Section 2. The candidate for Vice President shall be selected by each President-Elect.

CHAPTER XVI

Section 1. These Bylaws may be amended at any annual meeting by a two-thirds vote of the Members present and voting. Proposed amendments shall be made in writing as motions before the Association, and shall then be dealt with in accordance with the provisions of Chapter IX, Section 3, Paragraph 3, of the Bylaws.
## Future Meetings

<table>
<thead>
<tr>
<th>Year</th>
<th>Date</th>
<th>Host</th>
<th>Site</th>
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<tbody>
<tr>
<td>2018</td>
<td>February 16 - 19, 2018</td>
<td>Northern California Caucus</td>
<td>The Meritage Resort and Spa, Napa, CA</td>
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</table>
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