PROGRAM FOR THE NINETY-NINTH MEETING OF THE New England Surgical Society

WITH TRANSACTIONS VOLUME XCIX FOR THE YEAR 2018

Westin Portland Harborview Hotel Portland, Maine September 21-23
PROGRAM
FOR
THE NINETY-NINTH
MEETING
OF THE

New England Surgical Society

The Final Scientific Program, which begins on page 105, includes the abstracts of all accepted papers, brief reports, posters of distinction, and e-posters.

New England Surgical Society
Administrative Offices
500 Cummings Center, Suite 4400
Beverly, MA 01915

Tel: 978-927-8330
Email: admin@NESurgical.org
Website: www.NESurgical.org
ROBERT J. TOULOUKIAN, MD
New Haven, Connecticut
President, 2018
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OFFICERS
NEW ENGLAND SURGICAL SOCIETY
2017–2018

President
Robert J. Touloukian, MD, New Haven, Connecticut

President-Elect
Richard J. Barth, Jr, MD, Lebanon, NH

Vice President
Richard S. Swanson, MD, Cambridge, MA

Secretary
David E. Clark, MD, Portland, Maine

Treasurer
John E. Sutton, Jr., MD, Redding, Connecticut

Recorder
Walter E. Longo, MD, New Haven, Connecticut

Past President
Bruce J. Leavitt, MD, Burlington, Vermont

REPRESENTATIVES (with Dates of Retirement)
Peter J. Mazzaglia, MD (Rhode Island, 2018)
Kurt K. Rhynhart, MD (New Hampshire, 2019)
Edward C. Borrazzo, MD (Vermont, 2020)
Jeffrey L. Cohen, MD (Connecticut, 2021)
Giles F. Whalen, MD (Massachusetts, 2022)
M. Parker Roberts, III, MD (Maine, 2023)

Representative to the American Board of Surgery
James Whiting, MD (June 2018)
Anne C. Larkin, MD (2024)

Representative to the American College of Surgeons,
Board of Governors
David L. Berger, MD (2019)

Representative to the American College of Surgeons,
Advisory Council for General Surgery
Edward C. Borrazzo, MD (2019)

OFFICE OF THE EXECUTIVE DIRECTOR
500 Cummings Center, Suite 4400
Beverly, Massachusetts 01915
Telephone: (978) 927-8330
Facsimile: (978) 524-0498
E-Mail: admin@nesurgical.org
Web Site: nesurgical.org
COMMITTEES
NEW ENGLAND SURGICAL SOCIETY

NOMINATING COMMITTEE
David L. Berger, MD, Chair (2018)

Michael J. Zinner, MD (2019)
Bruce J. Leavitt, MD (2020)

PROGRAM COMMITTEE
Kari Rosenkranz, MD, Chair (New Hampshire, 2018)

Matthew A. Conway, MD (Vermont, 2019)
Michael P. Veziridis, MD (Rhode Island, 2020)
Peter S. Yoo, MD (Connecticut, 2021)
Ali Tavakkoli, MD (Massachusetts, 2022)
Baird Mallory, MD (Maine, 2023)
Robert J. Touloukian, MD, President (2018)
Richard J. Barth, Jr., MD, President-Elect (2019)
David E. Clark, MD, Secretary (2018)
Walter E. Longo, MD, Recorder (2018)
Anne C. Larkin, MD, Research Day Chair (2018)

PUBLICATIONS COMMITTEE
Walter E. Longo, MD, Chair (2018)

Richard J. Barth, Jr., MD (2019)
Michael G. Caty, MD (2019)
David E. Clark, MD (2019)
Andrew J. Duffy, MD (2019)
Robert A. Fisher, MD (2020)
Anne C. Larkin, MD (2019)
Dougal C. MacGillivray, MD (2020)
Peter J. Mazzaglia, MD (2020)
David McAneny, MD (2020)
Thomas J. Miner, MD (2020)
Matthew A. Nehs, MD (2020)
Mitchell C. Norotsky, MD (2020)
Francis J. Podbielski, MD (2020)
Rocco Ricciardi, MD (2018)
John R. Romanelli, MD (2020)
Kevin M. Schuster, MD (2020)
Richard S. Swanson, MD (2019)
John P. Welch, MD (2018)
Giles F. Whalen, MD (2019)
James Whiting, MD (2018)
Sandra L. Wong, MD (2020)
GRADUATE MEDICAL EDUCATION & CANDIDATE MEMBERSHIP COMMITTEE
Anne C. Larkin, MD, Chair (Massachusetts, 2018)

James C. Hebert, MD (Vermont, 2017)
Walter E. Longo, MD (Connecticut, 2017)
Peter J. Mazzaglia, MD (Rhode Island, 2017)
Kurt K. Rhynhart, MD (New Hampshire, 2017)
James Whiting, MD (Maine, 2017)

NEW MEMBERS COMMITTEE
Allan M. Goldstein, MD, Chair (2018)

Marlene Cutitar, MD (Rhode Island, 2018)
Haytham M. Kaafarani, MD, MPH (Massachusetts, 2018)
Carlos E. Marroquin, MD (Vermont, 2018)
Kurt K. Rhynhart, MD (New Hampshire, 2018)
Michelle E. Toder, MD (Maine, 2018)
Peter S. Yoo, MD (Connecticut, 2018)

ARCHIVES COMMITTEE
Thomas A. Colacchio, MD, Chair (2017)

John P. Welch, MD (Connecticut, 2019)
James C. Hebert, MD (Vermont, 2020)
Richard H. Koehler, MD (Massachusetts, 2021)
David E. Clark, MD (Maine, 2022)
Thomas J. Miner, MD (Rhode Island, 2023)
Meredith J. Sorensen, MD (New Hampshire, 2024)

SCHOLARS FOUNDATION BOARD OF DIRECTORS
Arlet G. Kurkchubasche, MD, President (2017) & RI Director (2019)
Charles H. Salem, MD, Secretary & Treasurer (2017), Vermont Director (2018)

Rocco Orlando, III, MD, Connecticut Director (2020)
David McAneny, MD, Massachusetts Director (2021)
Ronald F. Martin, MD, Maine Director (2022)
Christina V. Angeles, MD, New Hampshire Director (2023)
Robert J. Touloukian, MD, Ex-officio (2018)
SCHOLARS RESEARCH GRANT REVIEWERS
Richard J. Barth, Jr., MD (New Hampshire, 2018)
Carl E. Bredenberg, MD (Maine, 2018)
Arelt G. Kurkchubasche, MD, (Rhode Island, 2018)
Charles H. Salem, MD (Vermont, 2018)
Alisa Savetamal, MD (Connecticut, 2018)
Michael V. Tirabassi, MD (Massachusetts, 2018)

FUTURE MEETINGS
2019 Annual Meeting, September 13–15, 2019
Montreal Marriott Château Champlain, Montreal, QC, Canada

2020 Annual Meeting, October 23–25, 2020
Gurney’s Hotel, Newport, Rhode Island
LEARNING OBJECTIVES

This activity is designed for physicians. Upon completion of this course, participants will be able to:

1. Discuss hopeful outcomes in the future of pancreatic cancer
2. Describe the benefits of early hospital discharges and their association with improved patient satisfaction
3. Discuss the advancements in surgical oncology
4. Implement opportunities managing the legal climate during residency
5. Discuss post-discharge opioid usage after surgery
6. Discuss residency and perceptions on surgical training
7. Discuss the future of radiation with breast cancer
8. Describe improvements in trauma surgery care
9. Describe improvements in pediatric surgical care
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 the New England Surgical Society. 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 10.50 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

DISCLOSURE INFORMATION

In compliance with ACCME Accreditation Criteria, the American College of Surgeons, as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. 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.

AMERICANS WITH DISABILITIES ACT

If you require special accommodations to attend or participate in the CME activity, please provide information about your requirements to the New England Surgical Society, 500 Cummings Center, Suite 4400, Beverly, MA 01915; phone: (978) 927-8330; fax: (978) 524-0498; e-mail: meetings@nesurgical.org.
GENERAL INFORMATION/
ACKNOWLEDGMENTS

Registration Desk
The Registration Desk is located in the Hotel Lobby during the following hours:

Friday, September 21, 9:00 am–5:00 pm
Saturday, September 22, 7:00 am–12:00 pm
Sunday, September 23, 7:00 am–11:00 am

Badge Identification
Member and Spouse/Guest       Blue
Non-member and Spouse/Guest    White

Speaker Ready Room
Faculty and Authors are requested to present their PowerPoint presentation to the technician in the Speaker Ready Room, located in the Hotel Lobby, upon arrival to the meeting, or at least 12 hours prior to the opening of the session in which they are scheduled to present. Single LCD projection (PowerPoint) from a single, dedicated PC or laptop will be provided. Individual laptop computers may not be used. All presentations must be submitted in PowerPoint format only, with a 16:9 slide size required. The Speaker Ready Room is open during the following hours:

Friday, September 21, 9:00 am–5:00 pm
Saturday, September 22, 7:00 am–12:00 pm
Sunday, September 23, 7:00 am–10:30 am

Member Business Meeting (Members Only)
On Sunday, September 23rd, the Annual Business Meeting will be held from 7:30–8:15 am in the Grand Ballroom.

Welcome Reception
On Friday evening, September 21st, there will be a Welcome Reception held in the Ballroom Foyer of the hotel. Exhibitors are encouraged to attend this event. Badges will be required to attend the event.
President’s Reception & Dinner

On Saturday, September 22nd, the Society will hold its Annual President’s Reception & Dinner. Dress is business attire, the reception will be held on the Ballroom Balcony level and dinner will take place in the Grand Ballroom.

All registered physicians and spouses are required to wear badges to attend the event or present tickets if the event was purchased separately. Exhibitors may purchase additional tickets over and above their allotted two tickets. Additional tickets are available at the NESS Registration Desk.

Acknowledgments

Marketing & Exhibitor Support

The New England Surgical Society wishes to recognize and thank the following companies for their marketing support:

Army Health Care
BD
Johnson & Johnson/Ethicon US, LLC.
Mallinckrodt Pharmaceuticals
Medtronic
Stryker Endoscopy

The Exhibitor Program represents a valuable part of this meeting, and the Society urges registrants to visit the exhibits during regularly scheduled breaks. Continental breakfast will be available on Saturday and Sunday, with continuous beverage service available during the scheduled Exhibit hours. Exhibits are located in the Longfellow Room on the lower level of the hotel, and are open during the following hours:

Friday, September 21, 12:00 pm–3:00 pm
Saturday, September 22, 7:00 am–10:45 am
Sunday, September 23, 7:00 am–10:00 am
PAST AND PRESENT OFFICERS OF THE
NEW ENGLAND SURGICAL SOCIETY

PRESIDENTS

1916  Samuel J. Mixter, MD, Boston, Massachusetts
1917-19  John B. Wheeler, MD, Burlington, Vermont
1920  Homer Gage, MD, Worcester, Massachusetts
1921  John M. Gile, MD, Hanover, New Hampshire
1922  Charles A. Porter, MD, Boston, Massachusetts
1923  John F. Thompson, MD, Portland, Maine
1924  Fred B. Lund, MD, Boston, Massachusetts
1925  John W. Keefe, MD, Providence, Rhode Island
1926  William H. Bradford, MD, Portland, Maine
1927  Daniel F. Jones, MD, Boston, Massachusetts
1928  Robert B. Osgood, MD, Boston, Massachusetts
1929  Philemon E. Truesdale, MD, Fall River, Massachusetts
1930  David Cheever, MD, Boston, Massachusetts
1931  Alfred M. Rowley, MD, Hartford, Connecticut
1932  Frank H. Lahey, MD, Boston, Massachusetts
1933  Lyman Allen, MD, Burlington, Vermont
1934  Frederick B. Sweet, MD, Springfield, Massachusetts
1935  Peer P. Johnson, MD, Beverly, Massachusetts
1936  Daniel C. Patterson, MD, Bridgeport, Connecticut
1937  Lucius C. Kingman, MD, Providence, Rhode Island
1938  John M. Birnie, MD, Springfield, Massachusetts
1939  John Homans, MD, Boston, Massachusetts
1940  Carl M. Robinson, MD, Portland, Maine
1941  James B. Woodman, MD, Franklin, New Hampshire
1942-44  Walter G. Phippen, MD, Salem, Massachusetts
1945-46  James R. Miller, MD, West Hartford, Connecticut
1947  Thomas H. Lanman, MD, Boston, Massachusetts
1948  David W. Parker, MD, Manchester, New Hampshire
1949  Emery M. Porter, MD, Providence, Rhode Island
1950  Edward H. Risley, MD, Waterville, Maine
1951  W. Jason Mixter, MD, Boston, Massachusetts
1952  Charles P. Chandler, MD, Montpelier, Vermont
1953  John P. Bowler, MD, Hanover, New Hampshire
1954  Ashley W. Oughterson, MD, New Haven, Connecticut
1955  Irving J. Walker, MD, Boston, Massachusetts
1956  George W. Waterman, MD, Providence, Rhode Island
1957  Donald Munro, MD, Boston, Massachusetts
1958  Samuel R. Webber, MD, Calais, Maine
1959  Samuel F. Marshall, MD, Boston, Massachusetts
1960  Welles A. Standish, MD, Harford, Connecticut
1961  Grantley W. Taylor, MD, Weston, Massachusetts
1962  M. Dawson Tyson, MD, Hanover, New Hampshire
1963  Leland S. McKittrick, MD, Boston, Massachusetts
1964  Albert G. Mackay, MD, Burlington, Vermont
1965  Francis A. Sutherland, MD, Torrington, Connecticut
1966  George R. Dunlop, MD, Worcester, Massachusetts
1967  Marshall K. Bartlett, MD, Boston, Massachusetts
1968  Mark Hayes, MD, New Haven, Connecticut
<table>
<thead>
<tr>
<th>Year</th>
<th>Name and Location</th>
</tr>
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<tbody>
<tr>
<td>1969</td>
<td>Richard Warren, MD, Cambridge, Massachusetts</td>
</tr>
<tr>
<td>1970</td>
<td>Clinton R. Mullins, MD, Concord, New Hampshire</td>
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<tr>
<td>1971</td>
<td>Bentley P. Colcock, MD, Boston, Massachusetts</td>
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<td>1972</td>
<td>William W. Babson, MD, Gloucester, Massachusetts</td>
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<td>1973</td>
<td>J. Gordon Scannell, MD, Boston, Massachusetts</td>
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<tr>
<td>1974</td>
<td>Thomas Perry, Jr., MD, Providence, Rhode Island</td>
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<td>1975</td>
<td>John J. Byrne, MD, Boston, Massachusetts</td>
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<td>1976</td>
<td>Emerson H. Drake, MD, Portland, Maine</td>
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<td>1977</td>
<td>Gordon A. Donaldson, MD, Boston, Massachusetts</td>
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<td>1978</td>
<td>Frederick P. Ross, MD, Fitchburg, Massachusetts</td>
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<td>1979</td>
<td>John R. Brooks, MD, Boston, Massachusetts</td>
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<td>1980</td>
<td>John F. Reed, MD, Hartford, Connecticut</td>
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<td>1981</td>
<td>Earle W. Wilkins, Jr., MD, Boston, Massachusetts</td>
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<tr>
<td>1982</td>
<td>Walter B. Crandell, MD, Hanover, New Hampshire</td>
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<td>1983</td>
<td>Fiorindo A. Simeone, MD, Providence, Rhode Island</td>
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<tr>
<td>1984</td>
<td>William W.L. Glenn, MD, New Haven, Connecticut</td>
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<td>1985</td>
<td>John W. Braasch, MD, Burlington, Massachusetts</td>
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<td>1986</td>
<td>William V. McDermott, MD, Boston, Massachusetts</td>
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<td>1987</td>
<td>Joseph E. Murray, MD, Wellesley Hills, Massachusetts</td>
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<tr>
<td>1988</td>
<td>Clement A. Hiebert, MD, Portland, Maine</td>
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<tr>
<td>1989</td>
<td>James H. Foster, MD, Farmington, Connecticut</td>
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<td>1990</td>
<td>John F. Burke, MD, Boston, Massachusetts</td>
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<td>1991</td>
<td>H. Brownell Wheeler, MD, Worcester, Massachusetts</td>
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<td>1992</td>
<td>John H. Davis, MD, Burlington, Vermont</td>
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<td>1993</td>
<td>W. Hardy Hendren, MD, Boston, Massachusetts</td>
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<td>1994</td>
<td>Andrew L. Warshaw, MD, Boston, Massachusetts</td>
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<td>1995</td>
<td>Robert W. Crichlow, MD, Lebanon, New Hampshire</td>
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<td>1996</td>
<td>Blake Cady, MD, Boston, Massachusetts</td>
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<td>1997</td>
<td>Paul Friedmann, MD, Springfield, Massachusetts</td>
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<td>1998</td>
<td>Leslie W. Ottinger, MD, Boston, Massachusetts</td>
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<td>1999</td>
<td>Peter J. Deckers, MD, Farmington, Connecticut</td>
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<td>2000</td>
<td>Ashby C. Moncure, MD, Boston, Massachusetts</td>
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<td>2001</td>
<td>H. David Crombie, MD, Hartford, Connecticut</td>
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<td>2002</td>
<td>Roger S. Foster, Jr., MD, Shelburne, Vermont</td>
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<td>2003</td>
<td>Albert W. Dibbins, MD, Portland, Maine</td>
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<td>2004</td>
<td>Walter B. Goldfarb, MD, Portland, Maine</td>
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<td>2005</td>
<td>A. Benedict Cosimi, MD, Boston, Massachusetts</td>
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<td>2006</td>
<td>Robert M. Quinlan, MD, Worcester, Massachusetts</td>
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<td>2007</td>
<td>John P. Welch, MD, Hartford, Connecticut</td>
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<td>2008</td>
<td>Thomas A. Colacchio, MD, Lebanon, New Hampshire</td>
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<tr>
<td>2009</td>
<td>Francis D. Moore, Jr., MD, Boston, Massachusetts</td>
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<td>2010</td>
<td>Patricia K. Donahoe, MD, Boston, Massachusetts</td>
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<td>2011</td>
<td>James C. Hebert, MD, Burlington, Vermont</td>
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<td>2012</td>
<td>Thomas F. Tracy, Jr., MD, Providence, Rhode Island</td>
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<td>2013</td>
<td>Neil S. Yeston, MD, Hartford, Connecticut</td>
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<td>2014</td>
<td>Frederick R. Radke, MD, Portland, Maine</td>
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<td>2015</td>
<td>David L. Berger, MD, Boston, Massachusetts</td>
</tr>
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<td>2016</td>
<td>Michael J. Zinner, MD, Coral Gables, Florida</td>
</tr>
<tr>
<td>2017</td>
<td>Bruce J. Leavitt, MD, Burlington, Vermont</td>
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</tbody>
</table>
### VICE-PRESIDENTS

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>City, State</th>
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<tbody>
<tr>
<td>1917</td>
<td>John B. Wheeler, MD</td>
<td>Burlington, Vermont</td>
</tr>
<tr>
<td>1918-20</td>
<td>Homer Gage, MD</td>
<td>Worcester, Massachusetts</td>
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<tr>
<td>1921</td>
<td>William L. Cousins, MD</td>
<td>Portland, Maine</td>
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<td>1922</td>
<td>Seldom B. Overlock, MD</td>
<td>Pomfret, Connecticut</td>
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<td>1923</td>
<td>Herbert L. Smith, MD</td>
<td>Nashua, New Hampshire</td>
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<td>1924</td>
<td>Lyman Allen, MD</td>
<td>Burlington, Vermont</td>
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<td>1925</td>
<td>Frederick B. Sweet, MD</td>
<td>Springfield, Massachusetts</td>
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<td>1926</td>
<td>Alfred M. Rowley, MD</td>
<td>Hartford, Connecticut</td>
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<td>1927</td>
<td>Ralph H. Seelye, MD</td>
<td>Springfield, Massachusetts</td>
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<td>1928</td>
<td>William W. Townsend, MD</td>
<td>Burlington, Vermont</td>
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<td>1929</td>
<td>George C. Wilkins, MD</td>
<td>Manchester, New Hampshire</td>
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<td>1930</td>
<td>Willis E. Hartshorn, MD</td>
<td>New Haven, Connecticut</td>
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<tr>
<td>1931</td>
<td>Arthur T. Jones, MD</td>
<td>Providence, Rhode Island</td>
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<tr>
<td>1932</td>
<td>Thomas W. Luce, MD</td>
<td>Portsmouth, New Hampshire</td>
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<td>1933</td>
<td>Carl M. Robinson, MD</td>
<td>Portland, Maine</td>
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<td>1934</td>
<td>H. Gildersleeve Jarvis, MD</td>
<td>Hartford, Connecticut</td>
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<td>1935</td>
<td>Channing Simmons, MD</td>
<td>Boston, Massachusetts</td>
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<td>1936</td>
<td>William H. Townsend, MD</td>
<td>Burlington, Vermont</td>
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<td>1937</td>
<td>David W. Parker, MD</td>
<td>Manchester, New Hampshire</td>
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<td>Walter G. Phippen, MD</td>
<td>Salem, Massachusetts</td>
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<td>Carl M. Robinson, MD</td>
<td>Portland, Maine</td>
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<td>1940</td>
<td>James B. Woodman, MD</td>
<td>Franklin, New Hampshire</td>
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<td>1941</td>
<td>George M. Sabin, MD</td>
<td>Burlington, Vermont</td>
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<td>1942</td>
<td>Ernest L. Herk, MD</td>
<td>Worcester, Massachusetts</td>
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<tr>
<td>1943-44</td>
<td>Benjamin H. Alton, MD</td>
<td>Worcester, Massachusetts</td>
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<tr>
<td>1945-46</td>
<td>John H. Woodruff, MD</td>
<td>Barre, Vermont</td>
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<td>1947</td>
<td>John P. Bowler, MD</td>
<td>Hanover, New Hampshire</td>
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<td>1948</td>
<td>Edward R. Lampson, MD</td>
<td>Hartford, Connecticut</td>
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<td>1949</td>
<td>Herbert A. Durfee, MD</td>
<td>Burlington, Vermont</td>
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<td>1950</td>
<td>George M. Smith, MD</td>
<td>New Haven, Connecticut</td>
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<td>1951</td>
<td>James W. Jameson, MD</td>
<td>Concord, New Hampshire</td>
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<td>1952</td>
<td>Peirce Leavitt, MD</td>
<td>Brockton, Massachusetts</td>
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<td>1953</td>
<td>Ernest M. Daland, MD</td>
<td>Boston, Massachusetts</td>
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<td>1954</td>
<td>Stephen A. Cobb, MD</td>
<td>Sanford, Maine</td>
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<td>1955</td>
<td>Frederick S. Hopkins, MD</td>
<td>Springfield, Massachusetts</td>
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<td>1956</td>
<td>Thacher W. Worthen, MD</td>
<td>Hartford, Connecticut</td>
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<tr>
<td>1957</td>
<td>Charles C. Lund, MD</td>
<td>Boston, Massachusetts</td>
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<td>1958</td>
<td>William J. German, MD</td>
<td>New Haven, Connecticut</td>
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<td>1959</td>
<td>John W. Spellman, MD</td>
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1973  Walter B. Crandell, MD, White River Junction, Vermont
1974  Harold H. Hamilton, MD, Plymouth, Massachusetts
1975  Richard H. Thompson, MD, Salem, Massachusetts
1976  Radford C. Tanzer, MD, Hanover, New Hampshire
1977  Frank J. Lepreau, MD, Westport, Massachusetts
1978  William W.L. Glenn, MD, New Haven, Connecticut
1979  Charles F. Chandler, MD, Clinton, Massachusetts
1980  Fiorindo A. Simeone, MD, Providence, Rhode Island
1981  Lloyd Brown, MD, Blue Hills, Maine
1982  William T. Mosenthal, MD, Hanover, New Hampshire
1983  Chilton Crane, MD, Dover, Massachusetts
1984  Chester A. Wiese, Jr., MD, Hartford, Connecticut
1985  Robert W. Hopkins, MD, Providence, Rhode Island
1986  Clement A. Hiebert, MD, Portland, Maine
1987  H. Brownell Wheeler, MD, Worcester, Massachusetts
1988  Francis M. Woods, MD, Jaffrey Center, New Hampshire
1989  Ludwig J. Pyrtek, MD, Hartford, Connecticut
1990  James M. Shannon, MD, Marblehead, Massachusetts
1991  Charles L. Thayer, MD, Portsmouth, New Hampshire
1992  J. Robert Bowen, MD, Cumberland, Rhode Island
1993  C. Elton Cahow, MD, New Haven, Connecticut
1994  David B. Pilcher, MD, Burlington, Vermont
1995  Walter B. Goldfarb, MD, Portland, Maine
1996  Albert W. Dibbins, MD, Portland, Maine
1997  Eugene W. Grabowski, MD, Bennington, Vermont
1998  Parvis J. Sadighi, MD, Pittsfield, Massachusetts
1999  Peter B. Baute, MD, Warwick, Rhode Island
2000  Seth A. Resnicoff, MD, Concord, New Hampshire
2001  Barbara K. Kinder, MD, New Haven, Connecticut
2002  Jeremy R. Morton, MD, Portland, Maine
2003  Neil S. Yeston, MD, Hartford, Connecticut
2004  Nick P. Perencevich, MD, Concord, New Hampshire
2005  Robert J. Touloukian, MD, New Haven, Connecticut
2006  David W. Butsch, MD, Barre, Vermont
2007  Charles P. Shoemaker, Jr., MD, Newport, Rhode Island
2008  Jack M. Monchik, MD, Providence, Rhode Island
2009  Bruce J. Leavitt, MD, Burlington, Vermont
2010  Nicholas P.W. Coe, MD, Springfield, Massachusetts
2011  Lenworth M. Jacobs, Jr., MD, Hartford, Connecticut
2012  Michael R. Curci, MD, Cumberland, Maine
2013  Giles F. Whalen, MD, Worcester, Massachusetts
2014  Theresa A. Graves, MD, Providence, Rhode Island
2015  Michael P. Vezeridis, MD, Providence, Rhode Island
2016  Richard J. Barth, Jr., MD, Hanover, New Hampshire
2017  Anne C. Larkin, MD, Worcester, Massachusetts
### SECRETARIES

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<td>Frederick H. Bagley, MD</td>
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<td>Neil Hyman, MD</td>
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<td>David E. Clark, MD</td>
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### TREASURERS

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<td>Edward J. Ottenheimer, MD</td>
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<td>Douglas A. Farmer, MD</td>
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<td>Victor E. Pricolo, MD</td>
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<td>John E. Sutton, Jr., MD</td>
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RECORDERS

1922-23  John Bapst Blake, MD, Boston, Massachusetts
1924-36  Walter G. Phippen, MD, Salem, Massachusetts
1937-41  Thomas H. Lanman, MD, Boston, Massachusetts
1942    Henry H. Lanman, MD, Boston, Massachusetts
1942    A. William Reggio, MD, Boston, Massachusetts, pro tempore
1943-46  Ernest M. Daland, MD, Boston, Massachusetts
1947-51  Franklin G. Balch, Jr., MD, Boston, Massachusetts
1952-59  Bentley P. Colcock, MD, Boston, Massachusetts
1960-70  John J. Byrne, MD, Boston, Massachusetts
1971-76  Donald C. Nabseth, MD, Jamaica Plain, Massachusetts
1977-82  James H. Foster, MD, Farmington, Connecticut
1983-88  John F. Burke, MD, Boston, Massachusetts
1989-94  Blake Cady, MD, Boston, Massachusetts
1995-99  A. Benedict Cosimi, MD, Boston, Massachusetts
2000-2004 Thomas A. Colacchio, MD, Lebanon, New Hampshire
2010-2015 Richard J. Barth, Jr., MD, Lebanon, New Hampshire
2015-    Walter E. Longo, MD, New Haven, Connecticut
# Past Meetings of The New England Surgical Society

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<td>Omni Mount Washington Hotel, Bretton Woods, New Hampshire</td>
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NEW ENGLAND SURGICAL SOCIETY  
CONSTITUTION AND BY-LAWS  
ADOPTED 1961  

(Amended through November 2015)

The Society is constituted for the purpose of promoting the science of surgery and kindred arts and sciences and the welfare of the profession of surgery in New England; to hold professional and social meetings and to publish transactions.

ARTICLE I

The name by which the society shall be known is the NEW ENGLAND SURGICAL SOCIETY.

ARTICLE II

MEMBERSHIP

Section a. There shall be six types of membership: active, senior, honorary, associate, candidate, and affiliate.

Section b. Active membership shall be limited to 425 members. No more than 35 new Active members shall be elected in any single year. Honorary membership shall be limited to 5 members. There shall be no limitation for senior, associate, candidate, or affiliate members.

Section c. Qualifications for active membership: Applicants for Active Membership shall be residents of the New England States. Fellowship in the American College of Surgeons or certification by an ABMS surgical specialty board and an unrestricted license (or an inactive license due to retirement) to practice medicine and surgery in the state in which the member practices or resides, are prerequisites for membership.

Section d. Qualifications for candidate membership: Applicants for Candidate Membership shall be matched or enrolled in a surgical residency or fellowship education program within the New England States. Individuals who have completed their education in one of the above programs and are in the process of acquiring either Fellowship in the American College of Surgeons or certification by an ABMS surgical specialty board are also eligible to apply for Candidate membership. Candidate members shall have no rights to vote or hold office. Candidate membership shall end either when the Candidate becomes eligible for Active or Affiliate membership, at which time s/he is invited to apply for Active or Affiliate membership, or five years after completion of education in one of the above programs, whichever comes first.
Section e. Qualifications for affiliate membership for surgeons from geographic areas outside the New England states: Applicants for Affiliate Membership shall reside outside of the New England States and within either the United States or Canada. Prerequisites for membership include: Fellowship in the American College of Surgeons, fellowship in the Royal College of Physicians and Surgeons of Canada, or certification by an ABMS surgical specialty board or Canadian equivalent; and an unrestricted license (or an inactive license due to retirement) to practice medicine and surgery in the state or province in which the member practices or resides. Affiliate members have the right to vote but may not hold office. Upon taking up residence in the New England States, an affiliate member shall ipso facto transfer to active membership, providing s/he meets all qualifications for active membership.

Section f. Nominations for membership in the Society may be submitted by any Active or Senior member. On request to the Secretary of the Society, an appropriate application form and a statement for prospective applicants shall be made available to any Active or Senior member of the Society who wishes to serve as the primary sponsor of an applicant. It shall be the responsibility of the primary sponsor to review with the applicant the statement adopted by the Executive Committee and to insure that the applicant understands the purpose of the Society and intends to support them. For active, senior, and affiliate membership applicants, it shall be the responsibility of the primary sponsor to complete the application form, and it shall be the responsibility of the co-sponsors to write letters of support, which shall be submitted with the application form to the Secretary of the Society prior to January 1st of the calendar year in which the application is to be considered. It shall be the responsibility of each state representative to review the active, senior, and affiliate application forms of applicants from his or her state, to seek advice from other members of the state about the proposed applicant, and to present the composite recommendations from members of that state for consideration by the Executive Committee at its first meeting after January 1st. For candidate membership applicants, completed applications can be submitted at any time.

Section g. Procedure for nomination: The Secretary will furnish each member of the Society with copies of the master list. Election of active, senior, and affiliate applicants whose names have been selected from the master list by the Executive Committee shall be by vote of all voting members of the entire Society. The Secretary will distribute voting ballots to all voting members with valid email addresses. Completed ballots must be returned to the Society by April 15th to be considered eligible. The Executive Committee shall review the ballots received by April 15th and elect those active, senior, and affiliate applicants selected by the membership ballot vote. Twenty negative votes shall exclude an applicant from membership. For candidate membership applicants, the Graduate Medical Education & Candidate Membership Committee shall vet applicants as needed.
throughout the year; if the candidate applicant is in good standing in his/her program and approved by said committee, then s/he shall be elected to candidate membership.

Section h. An active, senior, or affiliate applicant’s name will remain on the master list and will automatically come up for consideration by the Executive Committee each year for a period of three years after which time if the applicant has not been selected for presentation for vote, his/her name will be deleted. The names of applicants deleted from the master list may be proposed a second time after an interval of one year. No applicant shall be proposed more than twice.

Section i. Honorary members shall be distinguished individuals in the field of surgery or the related sciences and shall be proposed and voted on by the Executive Committee. Honorary members shall not pay dues, nor shall they have the right to vote or hold office.

Section j. Senior membership will be automatic for all active, associate, and affiliate members the year following the year in which they reach the age of 65 prior to September 1st. Senior members shall be exempt from dues; furthermore, Senior members who reside within the New England States shall have all other rights and privileges of the Society including the right to vote and hold office.

Section k. Associate membership shall be accorded to active members upon change of residence to regions outside of the New England States. Associate members are exempt from dues and may not vote or hold office. Upon again taking up residence in the New England States, however, associate members shall ipso facto revert to active membership.

Section l. Any Active or Affiliate member who fails to actively participate in the Society for three years shall be automatically dropped from the membership. Active participation can be met by: 1) attendance at an annual meeting; 2) inclusion as an author of an abstract submitted for consideration for presentation at the annual meeting; 3) attendance at a Spring Resident research forum; 4) inclusion as an author of an abstract submitted for consideration for presentation at a Spring Resident research forum; or 5) participation in committees and/or performance of official business sanctioned by the Executive Committee.

Section m. Application blanks may be sent only to members for proposal of names for membership.

ARTICLE III
OFFICERS

Section a. The officers of the Society shall be a President, a President-Elect, a Vice-President, a Secretary, a Treasurer, and a Recorder. If a vacancy occurs in the Office of the President, the duties of the President shall be assumed by the
President-Elect for the remainder of the vacated term. The President-Elect may ask the Nominating Committee to select both a President for the succeeding year and a new President-Elect at the subsequent Annual Meeting of the Society. If the President becomes disabled, the duties of the President may be assumed by the President-Elect until the period of disability is over. If a vacancy occurs in the Office of President-Elect, the President may ask the Nominating Committee to select a new President-Elect and succeeding President-Elect at the next Annual Meeting of the Society.

If a vacancy or disability occurs in the Offices of Secretary, Recorder, or Treasurer the President may assume the responsibility of the Office until the Nominating Committee chooses a new Secretary, Recorder, or Treasurer at the next Annual Meeting of the Society. The President may ask the President-Elect to assume a portion of the responsibility by mutual agreement.

**Section b.** The officers of the Society shall hold office for one year or until their successors are elected or appointed.

**Section c.** The Executive Committee shall consist of the officers of the Society, the representative of the Society on the Board of Governors of the American College of Surgeons, the representative of the Society on the Advisory Council for Surgery of the American College of Surgeons, the designated representative of the Society on the American Board of Surgery, and six State Representatives, one from each of the New England States. The representative of the Society on the Board of Governors of the American College of Surgeons, and on the American Board of Surgery shall be nominated by the Executive Committee and approved by the Society. Membership on the Executive Committee shall be contingent upon the final acceptance of these nominees by the American College of Surgeons and the American Board of Surgery.

**Section d.** The Recorder shall act as the Necrologist of the Society. He shall obtain from the State representatives to the Executive Committee the names of all members who have died during the year and present them at the annual meeting. He shall be responsible for obtaining obituaries for inclusion in the *Transactions* of that year.

The Recorder shall have the proceedings of the annual business meeting and all discussions of papers presented at the scientific meeting properly recorded. He shall be responsible for having the *Transactions* published annually in such manner as the Society deems best.

**Section e.** Within a period of two months preceding the annual meeting, the President shall appoint an Auditing Committee of two, who shall audit the Treasurer’s account for the year and report to the Society at its annual meeting.
ARTICLE IV
ELECTION OF OFFICERS
The Officers shall be elected by ballot at the Annual Meeting. Within a period of two months preceding the Annual Meeting the President shall appoint a Nominating Committee which shall recommend to the Secretary a list of nominees to be placed before the Society for election at the Annual Meeting. The Nominating Committee shall be comprised of the three most immediate past Presidents currently residing in New England. The most senior of the three (in terms of service to the Society as President) shall serve as Chairman.

ARTICLE V
FEES AND DUES
The dues shall be determined annually by the Executive Committee. Any member who is in arrears in the payment of dues for two consecutive years shall, after due notice of the Treasurer, be dropped from the Society. The fiscal year of the Society shall end December 31.

ARTICLE VI
MEETINGS
The Society shall meet annually in the autumn. The time and place shall be determined by the Executive Committee. Application forms for new membership to the Society shall be distributed at the annual meeting. Special meetings may be held when ordered by the Executive Committee.

ARTICLE VII
PROGRAMS
The programs of all meetings shall be under control of the Executive Committee. All papers and discussions presented before the Society at its regular meetings shall become its property for publication in the Transactions and the official organ of the Society.
ARTICLE VIII
ARCHIVES

The archives of the Society will be assembled, maintained, and collated by the Archives Committee. The Chair of the Committee shall be appointed by the Executive Committee. Members of the Committee shall be chosen by the Chair. The Committee will prepare anniversary histories of the Society as appropriate.

ARTICLE IX
AMENDMENTS

The By-Laws may be repealed or amended and new By-Laws enacted by a two-thirds electronic vote of the membership within 30 days following the Annual Meeting of the Society when it has been proposed provided that the proposed alteration has been approved by the Executive Committee and electronically circulated to the Society at least 60 days preceding the vote.

ARTICLE X
DISTRIBUTION UPON DISSOLUTION

Upon the dissolution, termination, or cessation of the activities of the Society, any assets remaining in the name of the Society, after all obligations of the Society have been either paid or provided for, shall be distributed to an organization described in Section 501(c) (6) of the Internal Revenue Code of 1954, as amended, and the identity of such an organization shall be determined by a majority of the Executive Committee of the Society then in office. No amounts shall accrue to the benefit of the members or the officers of the Society.
INDOCTRINATION OF NEW MEMBERS
BY THE PRESIDENT

This charge is read by the President to the new members of the New England Surgical Society at the time of their induction. It is periodically reviewed and updated by the Executive Committee. The current statement was approved by the Executive Committee at its meeting on June 19, 1991.

As President of the New England Surgical Society, it is my pleasure to welcome you into active membership and to stress the obligations that you assume by such membership.

The New England Surgical Society was founded on February 5, 1916, by eighteen surgeons who were noted for their strength of character, as well as for their professional leadership. They limited the number of members in the Society solely to promote closer communication. Since its inception, the Society has provided a scientific forum and a meeting place for leaders in New England surgery, both from academic and community practice. The Society strives to increase knowledge of the art and science of surgery and to promote the welfare of surgical patients. It provides an environment where members may develop friendships with other New England surgeons who share their high professional standards. Membership is limited to surgeons who are not only leaders in their field, but who are also characterized by honesty, kindness, tolerance, equanimity, good manners and social consciousness. The Society expects its members to reflect these values in their practice and in their community. Members are also expected to support the Society through active participation in its meetings. It is in this spirit that we welcome each of you into our membership. We look forward to your own contributions to a proud tradition.

If you will exemplify the high ethical and professional standards of the New England Surgical Society in your practice of surgery, and if you will participate actively in the future meetings of this Society, please respond by saying, “I will.”

Since you have indicated your intent to become active and worthy members of the New England Surgical Society, and since you have been duly elected to membership therein, it is now my pleasure to present you each with a duly inscribed certificate of membership.

I now call upon the current members of the New England Surgical Society to rise and join me in welcoming our new colleagues.
REPORT OF THE SECRETARY

The ninety-eighth Meeting of the New England Surgical Society took place at the Omni Mount Washington Hotel in Bretton Woods, New Hampshire, September 8–10, 2017. The meeting attracted 141 members (including five Candidate members), 19 guest physicians, and 52 non-member residents, and was enhanced by the presence of 72 accompanying guests of the Society.

The academic program was thoughtfully prepared by the Program Committee under the direction of Dr. Dougald C. MacGillivray. One hundred abstracts had been submitted and 25 were selected for presentation in the traditional format, including one of the 2017 Research Presentation Day award winners. Thirteen additional papers were presented as three-minute presentations with directed discussion, and the Paper of the Year Award was presented. There were also an outstanding panel discussion entitled, “Surgeon Wellness,” and two breakfast sessions on “Resident Autonomy: Where We Are and Where We’re Going” and “New Changes to Maintenance of Certification (MOC).” Forty posters were reviewed, including three Research Day winners.

The Meeting’s Samuel Jason Mixter Lecture by Dr. John G. Meara was entitled, “Global Surgery 2030: Evidence and Solutions for Achieving Health, Welfare and Economic Development”, and Dr. Bruce J. Leavitt gave his Presidential Address, entitled “Zen and the Art of a New England Surgeon.”

The Society’s Executive Committee continues to meet three times a year, in September at the Annual Meeting, in January via conference call, and in May in Waltham, Massachusetts. The Committee carries out the business of the Society, coordinating the acceptance of new members, overseeing the finances, and working with the Program Committee. As of this writing, there are 344 Active, 406 Senior, 71 Associate, 20 Candidate, and 2 Honorary Members, which includes 22 Active members newly elected this year.

The NESS continues its support of the Annual Research Presentation Day in the spring, where residents from all the teaching programs in New England present their work.

Next year’s Annual Meeting of the Society will be:

2019 Annual Meeting, September 13–15, 2019
Montreal Marriott Château Champlain, Montreal, QC, Canada

The Executive Committee is most grateful to Dr. Robert J. Touloukian for his enthusiastic leadership as President through the past year, and looks forward to working with his successor, Dr. Richard J. Barth, Jr.

Respectfully submitted,
David E. Clark, MD
Secretary
REPORT OF THE REPRESENTATIVE TO THE AMERICAN BOARD OF SURGERY

Continuous Certification

With the new assessment program, diplomates will be required to take and pass an online, open book assessment every two years to continue their certification. The 10-year examination will still be offered in 2018, but the price of the examination will be considerably higher than the continuous certification assessment and it will not confer ten years of certification. Taking the traditional secure examination in 2018 will instead serve as an entry point to continuous certification. Surgeons that choose the secure examination will still be enrolling in continuous certification, having to meet all requirements immediately, including reporting CME activity, participation in a local, regional or national outcomes registry or database, taking the every other year at-home assessment, and annual fees.

The new general surgery assessment will cover both core surgical principles and a practice-related area of the diplomate’s choosing. Its focus will be on assisting diplomates in staying up to date in their area of practice.

References and a list of topics covered in the assessment will be shared with diplomates in advance, and they will receive immediate feedback with rationales when taking the assessment. Similar programs for other ABS specialties are in development for the coming years.

As part of its new direction, the ABS has changed its reporting cycle for the other requirements of continuing certification (CME, etc.) to every five years from every three years, and has reduced the amount of self-assessment required by 50%. Going forward, diplomates will be required to complete 150 Category 1 CME credits over a five-year cycle, of which 50 credits must include self-assessment (i.e., a quiz or test). Lowering the self-assessment requirement will allow diplomates more choice in selecting CME programs that best reflect their area of practice.

EPA Development

The ABS continues to work toward the development and implementation of Entrustable Professional Activities (EPAs) for surgical residents, with the participation of members of the Association of Program Directors in Surgery and ACGME Review Committee for Surgery.

Three committees have been formed for initial development—a Writing Committee, which generates the detail surrounding each of the EPAs; a Reactor Panel, which critiques the initial drafts of each EPA and provides reality testing as the criteria are developed; and an Implementation Committee, which is making plans and selecting residency programs for the pilot.
The five EPAs that have been chosen for initial development are:

- EPA 1: Evaluate and manage a patient with an inguinal hernia
- EPA 2: Evaluate a patient with right lower quadrant pain and manage appendicitis
- EPA 3: Evaluate and manage a patient with gallbladder disease
- EPA 4: Provide general surgical consultation to other health care providers
- EPA 5: Evaluation and initial management of a patient presenting with blunt or penetrating trauma

The pilot of the EPAs started in July 2018. More than 20 general surgery residency programs volunteered, encompassing small and large, community and academic, and geographically diverse programs.

**ABMS Activities**

The ABS remains actively engaged with the American Board of Medical Specialties (ABMS). ABS Executive Director Dr. Jo Buyske has been named to the planning committee of the ABMS Vision for the Future Initiative (visioninitiative.org), whose commission, once selected, will assess the current state of continuing board certification and envision a framework for its future.

The ABS also participated in a joint ABMS and Council of Medical Specialty Societies (CMSS) summit held in December 2017 to discuss continuous certification. The changes proposed by the ABS to its program were presented, which were favorably received by the attendees from surgical societies and state medical associations. The ACS has been publicly very supportive of continuous certification and professional self-regulation, and has posted a statement (www.facs.org/advocacy/state/moc) to that effect.

**Strategic Planning**

The ABS is undergoing a strategic planning process to better define its role and structure. A retreat was held at the January board meeting with all ABS directors and component board and advisory council members to review and discuss some of the findings from the initial external review. Input from all attendees was sought as to how the ABS can better serve its constituents and use its role to improve surgical care in the United States. The goal is a practical strategic plan, to be approved at the June board meeting, that will guide the ABS’ activities and decision making over the next five years.

Over the past academic year the Board worked with an independent firm to develop a strategic planning process to guide its activities over the next five year period and eventually culminate in a governance redesign for the Board. A retreat
on Sunday, June 24 was attended by the entire Board of Directors as well as the Board’s component Boards and committees to discuss and finalize this process. Among the developments that have come out of this year long planning process is the Board’s commitment to develop a structured research plan, to include the formation of a new research committee and goals using ABS data and focusing on education and certification processes.

The next step in the process will be to implement a governance redesign plan which will reorganize the Board’s infrastructure to better enable the Board to move forward to accomplish its goals and mission in the coming years.

**Specialty Continuous Certification**

Vascular, Pediatric, and Surgical Critical Care will begin their continuous certification programs next year, in 2019. Recertification examinations for these three certificates will be the traditional model secure examinations.

Respectfully Submitted,
James Whiting, MD
Representative to the American Board of Surgery
(through June 30, 2018)
REPORT OF THE REPRESENTATIVE TO THE
BOARD OF GOVERNORS OF THE
AMERICAN COLLEGE OF SURGEONS

The American College of Surgeons (ACS) Board of Governors Newsletter, The Cutting Edge, covers ACS news and events, special human interest stories, and Pillar updates; what follows are summaries of some recent Board activity.

Advocacy and Health Policy Pillar

Overall, the pillar’s aim is to address issues that relate to the following four core ACS principles:

- Quality and safety
- Patient access to surgical care
- Reduction of health care costs
- Medical liability reform

With respect to public policy, the College has engaged in a robust discussion of issues such as gun purchase, gun safety, and background checks.

Health Policy and Advocacy Workgroup

This workgroup seeks to advance issues that ACS members have at the state or specialty society level and to enhance the relationship with College leadership in the response to regulatory and legislative initiatives, and collaborate with College leadership and Regents to ensure that Fellows’ perspectives are available to help formulate College policies and positions.

Grassroots Advocacy Engagement Workgroup

The purpose of the Grassroots Advocacy Engagement Workgroup is to enhance bidirectional communication between the ACS leadership and members regarding important legislative and regulatory issues that affect surgical patients, surgeons and their practices, and society.

Communications Pillar

The Communications Pillar continues to focus on the bidirectional communication of the ACS, from the Fellows through the B/G to the Regents and, likewise, from the Regents through the B/G to the Fellows. This mission is accomplished via the Newsletter and Survey Workgroups.
**Education Pillar**

**Continuing Education Workgroup**

College leadership and American Board of Surgery (ABS) directors have engaged in discussions regarding the best way to recertify. The written exam every 10 years approach has come under scrutiny in the face of sub-specialization within surgery. Some acknowledge the value of reaffirming broad knowledge of the field, but others believe that the narrow field in which they practice should be the focus of recertification efforts. Those who have several years left before recertification will be grandfathered/grandmothered in.

**Patient Education Workgroup**

The Patient Education Workgroup has developed a presentation for Governors to provide communication back to their chapters or societies. In addition, the workgroup is working with the Young Fellows Association (YFA) and the Patient Education Committee to improve awareness of the patient education resources available to Fellows and their patients.

**Surgical Training Workgroup**

After seeking input from the Association of Program Directors in Surgery and the Association for Surgical Education, the members of the Surgical Training Workgroup finalized a standardized letter of recommendation for applicants to surgery training programs. Four educational modules for teaching faculty also are now available as the result of the efforts of this workgroup. The letter, modules, and other resources are available at [www.facs.org/about-acs/governance/board-of-governors/resources](http://www.facs.org/about-acs/governance/board-of-governors/resources).

The workgroup finalized a statement regarding medical student involvement in electronic health records and development of a billing and coding course for residents.

**Member Services Pillar**

In the last year, the Member Services Pillar has continued to strengthen both domestic and international chapters by updating resources, creating a chapter performance metric, and surveying all the chapters about their activities and needs.
Quality, Research, and Optimal Patient Care Pillar

Best Practice Workgroup

- Continues to review Evidence-Based Decisions in Surgery modules
- Developed standard template and timeline for creating annual guidelines
- Created new guidelines on perioperative anticoagulation management

Physician Competency and Health Workgroup

- Encouraged all workgroup members to serve on one of three subcommittees—ergonomics, disruptive surgeon, and wellness.

Surgical Care Delivery Workgroup

- Worked on a policy on maintaining surgical access with a locum tenens surgeon for review by the Board of Regents
- Updated the ACS Statements on the Rationale for Emergency Surgical Call, and on the Development and Use of Proprietary Guidelines for Accountable Patient-Centered Care

Respectfully Submitted,

David L. Berger, MD
Representative to the American College of Surgeons Board of Governors
REPORT OF THE REPRESENTATIVE TO THE
AMERICAN COLLEGE OF SURGEONS
ADVISORY COUNCIL FOR GENERAL SURGERY

The Advisory Council for General Surgery (ACGS) met at the American College of Surgeons (ACS) Clinical Congress 2017 in San Diego, California, and again at the ACS Leadership & Advocacy Summit 2018 in Washington, DC, to discuss topics and activities relevant to the practice of general surgery. The ACGS was updated on and discussed the following:

**Patient Education Committee**

The Advisory Council reviewed and provided feedback for a surgical patient education program document for Safe Pain Control After Surgery (www.facs.org/education/patient-education/medical-professionals/safe-pain-control) that was developed by a 30-surgeon panel. This patient education document was developed to introduce measures to reduce the existing opioid crisis and is now available.

Surgical Patient Education Program resources are available for management of surgical wounds and lacerations. Other skill kits available for patients include how to care for central lines, ostomies, and feeding tubes.

**Advocacy and Health Policy Updates**

Implementation of the Medicare Access and CHIP (Children’s Health Insurance Program) Reauthorization Act (MACRA), which focuses on value rather than volume, is proceeding. There were certain physician requirements for 2017 that are necessary to avoid future penalties. Cost measures were intended to represent 30 percent of a physician’s score by 2019. The ACS is leading an effort to develop an appropriate cost methodology prior to full implementation.

The College supports development of a bill for designating “areas of shortage” for general surgeons. There is congressional interest in defining what constitutes the appropriate number of general surgeons for a particular geographic area. This is also a major concern for the Association of American Medical Colleges.

A nationwide survey was conducted by the RAND Corporation on the level and intensity of postoperative evaluation and management included within the 90-day global codes bundles for the most commonly performed operations by individual surgeons. The survey results will have implications for surgeon reimbursement.

**ACS Board of Regents Update**

The Board of Regents has approved a number of ACS Statements on various topics, including injury prevention, post-traumatic stress disorder, cannabis use, diversity, and locum tenens.
A Statement on Social Media (www.facs.org/about-accs/statements/106-social-media) has been approved in collaboration with the Resident and Associates Society.

The ACS released a Statement on the Opioid Abuse Epidemic (www.facs.org/about-accs/statements/100-opioid-abuse) with a number of strategies including a prescription drug monitoring program, increased research regarding safe and effective prescription practices, establishing a program for at-risk veterans, and increased safety regulation for patients. The ACS also released a Statement on Opioids and Motor Vehicle Crash Prevention (www.facs.org/about-accs/statements/103-opiods-motor-vehicles).

A framework is being established by the ACS to eliminate duplication in the verification process of multiple programs at a single institution.

The American Board of Surgery (ABS) announced changes in the program on lifelong learning and continuous board certification, formerly known as Maintenance of Certification. These changes are based on feedback received from diplomates. The changes are intended to offer surgeons greater flexibility and more practice relevant options for continuing their certification, to support them in their goal of life-long learning, and high quality patient care. The new program will feature shorter, lower-stakes, open-book assessments required every two years, with immediate feedback. Diplomates will be able to take the assessment on their own computer, at a time and place of their choosing. There will be no need to travel to a testing center.

The general surgery assessments will have two sections. One section will cover core surgical principles common to all areas of surgery, and for the other, diplomates will select from a list of practice-related components. More component choices will be added as the program develops and the ABS will be engaging diplomates and surgical societies for their input.

**ACS Releases Optimal Resources for Surgical Quality and Safety**

The *Optimal Resources for Surgical Quality and Safety* (www.facs.org/quality-programs/about/optimal-resources-manual) manual is intended to serve as a trusted resource for surgical leaders seeking to improve patient care in their institutions, departments, and practices. The “red book” introduces key concepts in quality, safety, and reliability and explores the essential elements that all hospitals should have in place to ensure the delivery of patient-centered care.

Specific topics covered in the manual include the following: the domains and phases of surgical care, peer and case review, responsibilities of the surgical quality officer, institutional infrastructure, privileging and credentialing, and
more. The manual also includes a look at some of the “soft skills” that influence quality and safety in health care, as well as the individual surgeon’s responsibility to the patient, colleagues, and the next generation of surgeons.

**ACS Committee on Coaching the Next Generation**

A new initiative to create a mechanism for providing mentorship, the ACS Committee on Coaching the Next Generation, addresses support in practice, career development, transitioning through different career milestones, and providing practical advice regarding lifestyle issues. The committee is aiming to foster relationships between retiring or near-retiring surgeons and surgeons taking on new roles in their careers.

**ACS Membership and Recruitment**

During the 2018 Leadership & Advocacy Summit, the challenges of recruiting practicing surgeons and surgical trainees were discussed. The attrition of Associate Fellows from the resident ranks is also an issue that was addressed during the meeting. Some residency programs pay the annual $40 membership dues for Associates but the accompanying benefits of the ACS, such as disability insurance, may not be part of these offerings.

Potential strategies for membership were suggested by meeting attendees. Currently, each surgical specialty has a brochure promoting the benefits of membership (www.facs.org/member-services/benefits/specialty/general-surgery) to its constituents. These documents can be updated in real-time online.

ACS members are encouraged to share information with colleagues and attendings about how to become a Fellow and encourage them to apply.

**Preventing Chronic Opioid Use**

The Division of Education’s Patient Education Committee launched the Safe and Effective Pain Control After Surgery initiative in 2017. The goals of the program are to prevent chronic opioid use following surgery; reduce opioid distribution into the local communities through improved disposal and pursuit of opioid-sparing options; and to implement a patient-centered approach to safe opioid prescribing through the education of the patient, caregiver, and surgical professional. The Opioid Task Force, which includes members from all surgical specialties and several other external organizations, such as the U.S. Centers for Disease Control and Prevention and the Association of Hospital Pharmacists, has developed several pain control-related initiatives, including:

- A Statement on the Opioid Abuse Epidemic, which was published in the August 2017 issue of the Bulletin (http://bulletin.facs.org/2017/08/)
- Development of six professional e-learning programs (learning.facs.org)
- A dedicated web section, ACS Resources to Address Surgical Patient Opioid Use (www.facs.org/education/opioids)
• Creation of a patient handout on Safe and Effective Pain Control After Surgery available to all ACS members (www.facs.org/~media/files/education/patient%20ed/safe_pain_control.ashx)

At its February meeting, the ACS Board of Regents reviewed and approved policy statements on Credentialing and Privileging and Volume Performance Issues developed by the ACS Credentialing and Privileging and Volume Performance Issues Workgroup and Medical Student Use of the Electronic Health Record, developed by the ACS Board of Governors Surgical Training Workgroup. Both of these statements were published in the April issue of the Bulletin (http://bulletin.facs.org/2018/04/).

Stop the Bleed Campaign

Stop the Bleed (www.bleedingcontrol.org) is increasingly becoming part of the nation’s emergency preparedness consciousness, and the College’s role in the campaign has been prominently noted by the press. Numerous news stories describe bleeding control techniques, noting the contributions of the ACS, the Committee on Trauma, or the Hartford Consensus to this initiative.

National Accreditation Program for Rectal Cancer

The NAPRC (https://www.facs.org/quality-programs/cancer/naprc) was initiated in 2017 with surveyor training followed by the first surveys that took place in March and April of 2018.

Operating Room Attire

On February 27, 2018, the ACS convened a meeting of stakeholders to review the current evidence regarding health care-associated infections and operating room attire, including the following: the American Society of Anesthesiologists; the Association of periOperative Registered Nurses; the Association for Professionals in Infection Control and Epidemiology; the Association of Surgical Technologists; the Council on Surgical and Perioperative Safety; and The Joint Commission. A joint consensus statement was developed and approved by representatives from each participating group, with recommendations that focus specifically on ear and hair covering. The group reached the following conclusions in the statement:

• Evidence-based recommendations on surgical attire developed for peri-operative policies and procedures are best created collaboratively, with a multidisciplinary team representing surgery, anesthesia, nursing, and infection prevention.

• The requirement for ear coverage is not supported by sufficient evidence.
• At present, available scientific evidence does not demonstrate any association between the type of hat or extent of hair coverage and rates of surgical site infection. A recent study on head coverings (disposable bouffant or skullcap, cloth cap), identified that the commonly available disposable bouffant hat is the least effective barrier to transmission of particles.

For details, read the consensus statement at www.facs.org/about-acrs/consensus-statements/or-attire.

**Enhanced Surgical Care**

The ACS is now the new home for Strong for Surgery (www.facs.org/quality-programs/strong-for-surgery), and will administer and promote it as a quality initiative aimed at identifying and evaluating evidence-based practices to optimize the health of patients before surgery. Strong for Surgery empowers hospitals and clinics to integrate checklists into the preoperative phase of clinical practice for elective operations. The checklists target four areas known to be determinants of surgical outcomes: nutrition, glycemic control, medication management, and smoking cessation.

The ACS and the Johns Hopkins Armstrong Institute for Patient Safety and Quality have collaboratively launched the Agency for Healthcare Research and Quality Safety Program for Improving Surgical Care and Recovery (ISCR). At present, over 200 hospitals are participating in the implementation of a colorectal pathway and establishing systems for collecting data in the ISCR platform on compliance with the pathway processes and outcomes.

Respectfully Submitted,
Edward C. Borrazzo, MD
Representative to the American College of Surgeons
Advisory Council for General Surgery
MUSTAFA I. ADHAM, MD

1923–2017

Mustafa I. Adham, MD, died on April 15, 2017, at Baystate Medical Center in Springfield MA, at the age of 93. Dr. Adham was born in Baghdad, Iraq, in 1923. He was educated at the University of Baghdad, from which he received his medical degree in 1946. He completed a surgical residency at the University Hospital in Baghdad. He received a Mundt Fellowship and a Fulbright Fellowship to Harvard University in 1951, followed by another full residency in surgery at the Massachusetts Memorial Hospital. He took additional training in cancer surgery at the Western Massachusetts Hospital in Westfield, MA., which he completed in 1958. He was certified by the American Board of Surgery in 1957.

Following the completion of his surgical training, Dr. Adham joined the surgical staff at the Springfield Hospital, and remained on the staff there until his retirement in 1983. He eventually became the Chief of the General Surgical Services at the Springfield Hospital from 1964 to 1969. He became a member of the New England Surgical Society and the New England Cancer Society.

Dr. Adham was as an outstanding and caring surgeon, and an excellent teacher. Surgical residents looked forward to working with him because of his knowledge, skill and his teaching ability. He was committed to the education of medical students and surgical residents, and was appointed as Assistant Clinical Professor at Tufts University School of Medicine in recognition of that commitment.

Dr. Adham was a gracious, gentle and warm person, with a ready smile for everyone. He was beloved by residents, students, and by his patients as well. His colleagues admired him greatly. He had broad ranging interests beyond surgery, in fields as divergent as physics, chemistry, photography and electronics, in which he indulged during the course of his retirement. He also claimed to be a wise investor, and he loved to proclaim that he had never lost money on any investment he had ever made!

Dr. Adham was pre-deceased by his wife Eli, who died in 2008. He is survived by his daughter Yasmin and her husband, Stanley Padykula, and by his son Robert and his wife Patty.

P.F.
JOHN W. BRAASCH, MD, PHD

1922–2017

Dr. John William Braasch was born on December 11, 1922 and passed away on September 9, 2017.

He was born in Rochester, MN, the third child of Dr. William F. Braasch and Nellie Stinchfield Braasch. He was a graduate of Yale University (BA 1944), Harvard Medical School (MD 1946), the University Of Illinois College Of Medicine (MS in Physiology 1948) and the University of Minnesota (PhD in Surgery 1955). He served as a Captain in the U.S. Army from 1948–50. Following his father and grandfather who had successful practices in urology and internal medicine respectively, he completed his general surgery residency at the Mayo Clinic in Rochester, MN (1951–1955) where he was subsequently recognized for his numerous contributions to the field of surgery with the Distinguished Alumni Award.

Dr. Braasch spent the majority of his career at the Lahey Clinic in Boston and then Burlington, MA where he served as Chairman of the Department of General Surgery from 1971–1983. He was widely recognized not only for his technical expertise but also for his caring and compassion in addition to his, professionalism and mentorship to his many trainees. He had broad expertise in a wide range of general surgical conditions including the largest national and international experience with repair of biliary strictures (performing the final stricture repair on the British Prime Minister, Anthony Eden the Lord Avon), the use of pyloric saving pancreaticoduodenectomy for periampullary carcinoma and chronic pancreatitis, the early use of parietal cell vagotomy for peptic ulcer disease (which he declared “a wonderful operation until medical treatment became paramount!”) and the recognition and treatment of lobar and segmental hepatobiliary disease. He performed the first renal transplant at Lahey and the New England Deaconess Hospital and started the program for surgical treatment of obesity at Lahey in the 1970’s. From 1981–1993, he founded and served as the fellowship director of the gastric, hepatobiliary and pancreatic surgical fellowship program and in his later years founded and was the program director for the General Surgery Residency program from 1993–1996. A lifelong learner, he returned to the Ian Summerhayes Cell and Molecular Biology Laboratory at Lahey after his retirement from clinical practice and served as a clinical research associate from 1998–2002 learning about microarrays and a number of laboratory techniques.

His influence was felt nationally and internationally. He was the author of over 140 peer reviewed papers, was a highly sought after speaker and visiting professor throughout the world. He served as a Director of the American Board of Surgery, as President of the Boston Surgical Society and as President of the New England Surgical Society.
A devoted family man, he married Nancy King Braasch in Portland, Maine on March 21, 1946. They were married for 71 years. Spending time in Lincoln and Wellesley, Massachusetts and in Maine, they raised 4 children, Elizabeth B. Cech, William F. Braasch (Eugenia), Nancy B. Allen (Walter), Dr. Peggy B. Hasley (Steve) and were blessed with 11 grandchildren and 2 great grandchildren. He had a number of outside interests and was equally passionate about gardening (and particularly his roses), a game of bridge and a competitive singles tennis match as he was about surgery.

He was a master surgeon, an innovator, an educator and a lifelong learner who was a dedicated father and husband. An inspiration to his students, colleagues and family, he leaves a wonderful legacy and led a life for all of us to emulate which combined rich and rewarding work, meaningful relationships and training the next generation of surgeons and caregivers.

P.L.R.
MARTIN E. FELDER, MD, PHD

1930–2017

Dr. Martin E. Felder passed away at the age of 87 on December 31, 2017 in Carlsbad, CA where he had retired with his wife Velma. Born in Fall River, Massachusetts, Dr. Felder graduated from Brown University in 1952 and from the Tufts School of Medicine in 1956. Completing his surgical training at Ohio State University, Dr. Felder was a disciple of the late Robert M. Zollinger, MD – a relationship Dr. Felder cherished. Dr. Felder joined the US Public Health Service attaining the rank of lieutenant commander.

Upon returning to New England, Dr. Felder joined the staff of the Miriam Hospital in Providence, Rhode Island where he was instrumental in the birth of the medical program at Brown University, the expansion of the surgical service at Miriam Hospital and the growth of the nascent field of bariatric surgery. Dr. Felder was a co-founder of the preeminent Randall Surgical Group in Providence with the late Dr. Stanley Simon. Together Drs. Felder and Simon inspired legions of medical students and surgical residents with their peerless care of patients. Drs. Felder’s and Simon’s very different personalities but similarly unwavering commitment to excellence in surgical care proved to be the key factor in the decades’ long success of their practice.

Words cannot adequately express the commitment with which Dr. Felder dedicated his life to teaching the art and science of medicine in general and surgery in particular to myriad medical students, surgical residents, and colleagues. He inspired countless numbers to continually strive for improvement in whatever walk of life they stepped. Dr. Felder achieved the rank of professor of surgery at Brown University and was awarded emeritus status upon his retirement in 2003.

An oenophile, Silver Life Master in duplicate bridge and avid golfer Dr. Felder was the penultimate student and teacher. His dedication to his family including the love of his life Velma, two sons – Mark of Laveen, AZ and Lawrence of Scottsdale, AZ and his four grandchildren was boundless. Dr. Martin Felder’s legacy will prevail in the hearts and minds of countless patients and innumerable physicians.

M.C.
EUGENE W. GRABOWSKI, MD

1942–2018

Dr. Eugene W. Grabowski, 75, of Bennington, passed away on April 7, 2018, surrounded by his family, listening to family stories and watching his favorite Boston Red Sox. Gene was born in New Britain, Connecticut on April 11, 1942. He graduated from Berlin High School in 1960 and was a proud alumnus of Holy Cross College and Tufts University School of Medicine. He completed his surgical residency at the Maine Medical Center in Portland, Maine, before moving to Bennington and establishing a private practice at the Southwestern Vermont Medical Center. For over forty years, he served his patients with compassion and skill.

Gene served his community in a variety of leadership positions for many organizations including Vice-President of the New England Surgical Society, the Board of Trustees for Southern Vermont College, Chairman of the New England Society of Vascular Surgery and Chief of Surgery at Southwestern Vermont Medical Center. He enjoyed teaching future doctors at Williams College, the University of Vermont, and Albany Medical College. Gene served as the long time Medical Director for the Carthusian Monastery atop Mount Equinox. He greatly admired the monks who lived in seclusion and looked forward to visiting with them. Gene organized the multiple Emergency Response Simulations for the town of Bennington. He found great joy in coordinating with the local police, fire, rescue and hospital personnel to give the Bennington community the opportunity to practice for a possible future emergency event. Gene frequently recruited his children and friends to act as “victims” in simulated fires, bus accidents and airplane catastrophes.

Despite a busy professional life, Gene always found time for his family. He was a constant source of amusement for his family with his surprise visits and his curious habit of leaving birthday greetings in Polish on family answering machines. Gene enjoyed traveling, meeting new friends and learning languages. He climbed mountains on three continents including Kilimanjaro, Mt. McKinley, Mt. Blanc and the Matterhorn. When home, he tended to his birdhouses and watched for his favorite bluebirds. Gene enjoyed learning to drive stock cars and cruising around town in his Model A with grandchildren hanging out of the rumble seat.
Gene was active in the New England Surgical Society for many years, serving as Vice-President in 1997. He always enjoyed attending the annual meeting and reconnecting with old friends. Gene’s gentle nature and inviting attitude made him a magnet for new members of the Vermont chapter where he made countless new friends, both young and old. He will be missed by the many lives he touched in NESS and beyond.

E.B.
BENJAMIN T. JACKSON, MD

1929–2017

Ben Jackson, 88, died June 28, 2017. Ben was born in Jacksonville Florida and graduated from Duke University and its medical school in 1954 He met, and married, his wife of 46 years at Duke; she predeceased him. Their children, Ben Jr, Leigh (Heath), Kimberly (Dilanni), and Jillian (Walker) and several grandchildren survive.

Ben trained in surgery at the University of Minnesota and at the Virginia Commonwealth Medical School following Duke.

His clinical academic interests were in endocrinology and physiology, initially at the Medical College of Virginia, before moving to Boston University School of Medicine in 1964 to continue his research. He became Professor of Surgery at Brown Medical School and Chief of Surgery at the Providence VA hospital for 18 years until his retirement in 1998.

His research interests centered on fetal physiology, out of pure scientific curiosity, totally separate from his clinical practice. He even created an experimental co-arcation of the aorta in fetal lambs. Over many years he was responsible for almost $10M in NIH grants to Brown, a good measure of his scientific accomplishments and peer recognition.

He had served in the US Army prior to his academic career.

Ben, always the Southern gentleman, was a cultured man with interests in wine, gourmet cooking, opera and ballet, and world travel, and was a devoted family man, gardening with his wife, and spending time with his children in music, sports, and hiking.

B.C. & F.L.
MARTIN J. KOPLEWITZ, MD

1928–2017

Dr. Martin J. Koplewitz was a beloved husband, parent, healer, guide, and a man of great wisdom, whose skilled hands and gracious heart helped many to heal and recover from illness and injury. Marty lived with his wife Judith (1929–2013), and three children, Jane, Laura, and Paul, first in St. Albans, VT, and then in South Burlington, VT.

Marty had a private practice in general medicine and surgery in St. Albans, and focused on gastrointestinal and abdominal surgery working at the Aesculapius Medical Center in South Burlington, and as faculty member in the Department of Surgery of the University of Vermont School of Medicine. Martin’s love of medicine was of the truest kind, he cared for each and every patient as a whole person. He believed deeply in ethics, and in living according to the highest principles in daily life. Martin became a mentor and guide to several generations of physicians, who now work in Vermont and throughout the country. He always expressed gentleness of spirit along with his skills as a healer.

Marty was born March 24, 1928, in Far Rockaway, New York. He grew up in a lively, multi-generational household with his 4 elder sisters. He attended Brooklyn College, graduated summa cum laude, and then attended the University of Vermont School of Medicine, where he later served on ethics committees and was a very active member of the teaching community as a surgeon. His interest in helping the next generation of doctors continues in an annual scholarship which he supports for a UVM medical student.

Marty’s love of family was always a centerpiece of his life. Whether spending time in the kitchen helping his mother, Mary, make kreplach; sharing adventures with his 4 elder sisters, as they doted on their little brother, or playing with his many nieces and nephews. Marty shared his joy of living with humor, kindness, and grace from childhood throughout his life.

He loved going to the Vermont Symphony and Craftsbury Chamber Players, and his love of music was beyond measure.

Marty was a long-time member of the New England Surgical Society, and he enriched the lives of all who knew him, both in NESS and in general.

E.B.
The success of novel surgical procedures today is, in large part, due to the pioneers of the recent past. Dr. Samuel S. Schuster, a pediatric surgeon for over three decades at Boston Children’s Hospital, was one of those pioneers. Dr. Schuster specialized in pediatric chest and abdominal surgeries. Throughout his surgical career, his curiosity and commitment led him to perform laboratory research and seek out advancements in surgical techniques. As a result, he developed a revolutionary surgical procedure for repairing an omphalocele, a pre-natal birth defect in which a small portion of the intestine or most of the abdominal organs protrude outside of an incompletely formed abdominal wall.

Dr. Schuster’s surgical skills were admired by his colleagues for their “elegant economy and precision.” In addition to his groundbreaking procedure for repairing an omphalocele, Dr. Schuster was the first surgeon to place a pacemaker in an infant and was a leader in the surgical treatments of colitis, ileitis, and cystic fibrosis. His skills and surgical innovations drew people of all faiths and walks of life from around the world to receive his care at Children’s Hospital.

Dr. Schuster was a first generation American, born October 31, 1921 in Youngstown, Ohio. His parents, Jacob and Anna (Mackovitch) Schuster immigrated to the United States from Austria. He had four older sisters. Dr. Schuster was brought up in Cleveland. He graduated from Baldwin-Wallace College in Berea, Ohio. His medical studies were delayed by World War II. He later completed his surgical residency at Johns Hopkins University.

Dr. Schuster enlisted in the Navy shortly after the Pearl Harbor attack and served as a Lt. (J.G.) aboard the USS Myles C. Fox, a destroyer. He was present for the Japanese surrender in Tokyo harbor when the Fox detected a submerged “phantom” image that for a brief period of time was suspected to be a Japanese submarine that either had not heard of the surrender or was a renegade intent on wreaking havoc on the unsuspecting American fleet. Fortunately, the “phantom” turned out to be nothing more than that and no sighting was confirmed. Later in life, Dr. Schuster, a fan of the military thriller novelist Tom Clancy, a resident of Annapolis, had a secret ambition to write his own novel about this episode in Tokyo Harbor.

Dr. Schuster was a gentle and genial man with a winning smile no doubt the result of a loving upbringing by his parents, not to mention the doting attention of his four older sisters. He was a devoted family man. Despite long stressful hours in surgery, and evenings interrupted by medical emergencies, he never missed an opportunity to be present at family events, and to encourage and support his children in their varied pursuits. He even participated in their athletic activities despite having limited abilities himself, occasionally with unfortunate results for himself including, in one instance, a broken back. With four children
and friends, he was frequently seen tending to aches and pains or stitching a
wound in impromptu surgery at the kitchen table or acting as a team physician
at a hockey game.

He tried to pass on his own values of dedication, compassion and sacrifice by
bringing his children with him on week-end rounds at the hospital, sometimes
dressing them in scrubs, and setting them on a stool to witness surgical proce-
dures in the operating room. He routinely provided pro-bono care for patients in
need and opened his home to a friend of one of his children whose parents were
killed in an accident.

Education was a paramount value to Dr. Schuster. He had high standards and set
an example of the importance of self-education and improvement by voracious
reading, traveling, curiosity and embracing challenges.

In his laboratory research, he often used dogs, but always with love and respect
for the animals. On one occasion, he was brought an English Mastiff. He refused
to use the dog for his research and brought it home, raising and showing his next
Mastiff to the AKC champion level. He served as secretary of the AKC American
Mastiff Association. His daughter, Debbie, carries on his interest in the breed.

In the 1970’s, Dr. Schuster befriend a visiting surgeon, Dr. Harry Icaza of
Guayaquil, Ecuador. The friendship led to numerous exchanges—trips, lectures,
assistance—that benefited the medical community in Guayaquil. He was made
an honorary staff physician and received a key to the city.

In addition to his surgical duties at Children’s, Dr. Schuster was an Associate
Professor at Harvard Medical School and served on the Admissions Committee.
He lectured widely at medical conferences around the world on pediatric surgery
and was a prolific contributor to medical journals, including the Journal of the
American College of Surgeons, the New England Journal of Medicine, and the
Journal of the American Medical Association. He was a member of the American
College of Surgeons, the American Association of Thoracic Surgery, the Ameri-
can Pediatric Surgical Association, and the New England Surgical Society.

Dr. Schuster died on July 29, 2012. He is survived by his four children: Jill
Schuster of Basking Ridge, NJ, Dr. Jonthan Schuster of Hopkinton, MA, David
Schuster of West Tisbury, MA, and Debbie Schuster McGoldrick of Westport,
CT, and his former wife, Merrian Schuster. He is also survived by nine grand-
children who referred to him as “Pop-Pop.”

W.H.H.
ANNUAL SAMUEL JASON MIXTER LECTURE
IN HONOR OF
SAMUEL JASON MIXTER, MD

Sponsored by the NESS Scholars Foundation

Samuel Jason Mixter was chosen President of the newly formed New England Surgical Society in 1917, just one year before he was elected President of the American Surgical Association. Born in Western Massachusetts in Hardwick (1855), he was educated at the Massachusetts Institute of Technology (1875) and Harvard Medical School (1879). After serving as West Surgical House Officer at the Massachusetts General Hospital, he studied anatomy and the new science of microscopic anatomy in Vienna which he brought back to the Harvard Medical School Department of Anatomy. He soon changed careers and became surgeon at the Carney Hospital and the Massachusetts General Hospital and finished his surgical career as Chief of the West Surgical Service at the Massachusetts General Hospital. His anatomical skills and mechanical ingenuity made him a surgical genius and his innate honesty and sound judgment made him a great physician. He was the first in America to successfully resect a Zenker’s diverticulum of the esophagus, pioneered in Gasserian ganglion surgery and performed one of the first successful hypophysectomies. He helped to develop the new frontiers of abdominal surgery and was skilled in surgery of bones and joints, head and neck, breast tumors and pediatrics.

Dr. Mixter’s kind, gentle and hospitable nature was felt when he guided visiting surgeons, as well recorded by William Mayo, to operative clinics and staff meetings at the hospital and when his many guests shared the happiness of his home. His non-surgical interests had to do with life in the open air with sports, gardening, and breeding Guernsey cattle.

A rich and rewarding family life followed his marriage in 1879 to Wilhelmina Galloupe (1879) of Swampscott. The marriage was blessed with four sons, two of whom—William Jason Mixter and Charles Galloupe Mixter—were members of the New England Surgical Society as was his grandson, Charles G. Mixter, Jr., and is his great-grandson, Charles G. Mixter, III.

His loyalty to his country was demonstrated in World War I when, incensed by the German brutality, he left a life of complete retirement to join the Medical Reserve Corps. As a consultant he made numerous tours of the Eastern military camps. He remained in the Medical Reserve Corps, attaining the rank of Colonel one year before his death.

Dr. Mixter died in 1926, a scant year after the death of his wife. His life exemplified in all respects the qualities that our Society demands of its new members: “surgeons with the attributes of a gentleman, i.e., basic honesty, kindness, tolerance, equanimity, good manners and social consciousness.”
1985  Lord Rodney Smith, Marlow, England
1986  Martin Adson, MD, Rochester, Minnesota
1987  Joseph P. Vacanti, MD, Boston, Massachusetts
1988  F. Griffith Pearson, MD, Toronto, Ontario, Canada
1989  Alexander Walt, MD, Huntington Woods, Michigan
1990  Professor Peter Morris, Oxford, England
1991  Lazar J. Greenfield, MD, Ann Arbor, Michigan
1992  Paul A. Ebert, MD, Chicago, Illinois
1993  Thomas E. Starzl, MD, Pittsburgh, Pennsylvania
1994  John E. Niederhuber, MD, Stanford, California
1995  Jonathan E. Rhoads, MD, Philadelphia, Pennsylvania
1996  M. Judah Folkman, MD, Boston, Massachusetts
1997  Samuel A. Wells, Jr., MD, St. Louis, Missouri
1998  Paul S. Russell, MD, Boston, Massachusetts
1999  Bernard Fisher, MD, Pittsburgh, Pennsylvania
2000  John L. Cameron, MD, Baltimore, Maryland
2001  Glenn D. Steele, Jr., MD, Chicago, Illinois
2002  Thomas J. Krizek, MD, Wesley Chapel, Florida
2003  David L. Nahrwold, MD, Chicago, Illinois
2004  Irving L. Kron, MD, Charlottesville, Virginia
2005  Patricia K. Donahoe, MD, Boston, Massachusetts
2006  Murray F. Brennan, MD, New York, New York
2007  Andrew L. Warshaw, MD, Boston, Massachusetts
2008  Lucian L. Leape, MD, Boston, Massachusetts
2009  Atul A. Gawande, MD, Boston, Massachusetts
2010  David H. Sachs, MD, Boston, Massachusetts
2011  David B. Hoyt, MD, Chicago, Illinois
2012  Barry Mills, Brunswick, Maine
2013  Peter J. Deckers, MD, Farmington, Connecticut
2014  Thomas H. Cogbill, MD, La Crosse, Wisconsin
2015  Dorry L. Segev, MD, Baltimore, Maryland
2016  Atul A. Gawande, MD, Boston, Massachusetts
2017  John G. Meara, MD, DMD, MBA, Boston, Massachusetts
NEW ENGLAND SURGICAL SOCIETY’S
DISTINGUISHED SERVICE AWARD IN HONOR
OF
NATHAN SMITH

Sponsored by the NESS Scholars Foundation

Nathan Smith, the first all-New England surgeon, was one of the most remarkable men ever to adorn the American surgical profession. Born in 1762 in Rehoboth, Massachusetts, his only education was from his parents, his father being a farmer-surveyor and his mother a midwife; from Doctor Josiah Goodhue, a prominent surgeon of the upper Connecticut Valley, and from the Harvard Medical School near the time of its inception. In addition he accomplished a period of eight months of study in Edinburgh and London.

During his long career, he was a major force in the establishment and development of Dartmouth Medical School while he developed an extensive surgical practice in the upper Connecticut Valley. Success in upper New England was followed by an appointment in the new Yale Medical School, where he made contributions as a surgeon, teacher and practitioner with attention to the necessary requirements of politics. He further directly contributed to the establishment of the new medical school at Bowdoin College and to the new medical school at the University of Vermont.

During this time his contributions to the practice of surgery were of great importance. Essays on typhus (typhoid) fever, on the pathology and treatment of necrosis (osteomyelitis) and in the performance of ovarian cystectomy were no-table. Other reports described new methods for fashioning skin flaps following amputation and the use of various apparatus for the treatment of fractures of the extremities. His record in urinary lithotomy was enviable.

No evaluation of this remarkable man would be complete without mention of his family. All four of his sons graduated from Yale Medical School and nine grandsons, six great-grandsons and at last count one great-great grandson entered medicine.

In the New England area and perhaps in the country, no man contributed more than did Nathan Smith, not only to the birth of surgery as a specialty, but to the early evolution of the medical teaching institution. As a surgeon, as a teacher and as a person of high intellectual and moral quality, there is no one who surpasses him.

Gordon A. Donaldson, MD
Presidential Address, New England Surgical Society, 1977
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<tr>
<th>Year</th>
<th>Name</th>
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<td>Claude E. Welch, MD</td>
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<td>George R. Dunlop, MD</td>
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<td>John F. Burke, MD</td>
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<td>Frank J. Lepreau, Jr., MD</td>
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<td>Harry C. McDade, MD</td>
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<td>John H. Davis, MD</td>
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<td>Charles L. Thayer, MD</td>
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<td>W. Gerald Austen, MD</td>
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<td>Susan Briggs, MD</td>
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<td>Michael R. Curci, MD</td>
<td>Portland, Maine</td>
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<td>Erwin F. Hirsch, MD</td>
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<td>Richard W. Dow, MD</td>
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<td>2010</td>
<td>Grant V. Rodkey, MD</td>
<td>West Roxbury, Massachusetts</td>
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<td>Stanley J. Dudrick, MD</td>
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<td>2016</td>
<td>H. David Crombie, MD</td>
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<td>2017</td>
<td>Thomas A. Colacchio, MD</td>
<td>Norwich, Vermont</td>
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INSTRUCTIONS TO AUTHORS FOR MANUSCRIPTS SELECTED FOR PRESENTATION AT THE ANNUAL MEETING

The *Journal of the American College of Surgeons (JACS)* is the official publication of the New England Surgical Society. Podium Presentations require manuscript submission to the *JACS*; Brief Reports are strongly encouraged to submit manuscripts but not required to do so; likewise, Poster Presentations are encouraged but not required to submit manuscripts. In order for these papers to be published in the *JACS*, whether in the NESS Annual Meeting issue or later, these guidelines for submission must be followed closely and carefully:

1. Do **not** submit your manuscript to *JACS* before the meeting. Your manuscript must be submitted to *JACS by October 23, 2018* (within four weeks after the Annual Meeting).

2. For **formatting and style requirements**, follow “Manuscript Preparation Details” at [http://www.journalacs.org/authorinfo](http://www.journalacs.org/authorinfo).


4. The corresponding author must complete and submit an Author Contributions form, and each author must complete the *JACS* Disclosure form. These forms (available as Word documents at [http://www.journalacs.org/authorinfo](http://www.journalacs.org/authorinfo)) must be uploaded with the manuscript submission.

5. Make all revisions to the paper **before** submitting to *JACS*. Again, **October 23, 2018, is the deadline** for uploading your paper.

6. **Register and log-on** at [http://editorialmanager.com/jacs/](http://editorialmanager.com/jacs/) and follow instructions for uploading the manuscript.

7. **PLEASE NOTE:** Be certain to scroll down and choose “New England Surgical Society” from the “article type” drop-down menu. Do **not** select “original scientific article.”
RESIDENT AWARD RECIPIENTS
Sponsored by the NESS Scholars Foundation

1987 Predicting Hospital Charges for Trauma Care
Susan E. Pories, MD, Burlington, VT

1988 Liver Abscess – The Need for Complete Gastrointestinal Evaluation
Jeffrey L. Cohen, MD, Burlington, MA

1989 Albumin Therapy in the Critically Ill: A Prospective Randomized Trial
Eugene F. Foley, MD, Boston, MA

1990 Patterns of Venous Incompetence in Patients with Varicose Veins
Lawrence M. Hanrahan, MD, Boston, MA

1991 Preliminary Assessment of a Basic Science Curriculum in a Surgical Residency Program
David B. Safran, MD, Hartford, CT

1992 Continuous Arteriovenous Hemofiltration Attenuates Polymorphoneuclear Leukocyte Phagocytosis in Porcine Intra-Abdominal Sepsis
Anthony W. DiScipio, MD, Lebanon, NH

1993 Parastomal Hernia: Is Stoma Relocation Superior to Fascial Repair?
Marc S. Rubin, MD, Boston, MA

1994 Prostaglandin Protects Renal Cortical Blood During Infrarenal Aortic Clamping
Elias J. Arbid, MD, Boston, MA

Timothy M. Farrell, MD, Lebanon, NH
1996

First Place
The Impact of Histopathology on Nodal Mestastases in Minimally Invasive Breast Cancer
Isha A. Mustafa, MD, Providence, Rhode Island

Second Place
The Use of Authentic Angiotensin II in the Treatment of Refractory Septic Shock
Mary B. Harler, MD, Providence, Rhode Island

Third Place
Gastrointestinal Complications are Predictable Following Cardiac Surgery
Richard A. Perugini, MD, Worcester, Massachusetts

1997

First Place
Effect of Delayed Fluid Resuscitation on Cerebral Hemodynamics in a Swine Model of Head Injury and Simulated Uncontrolled Hemorrhagic Shock
Paul R. Bourguignon, MD, Burlington, Vermont

Second Place
Influence of Peritoneal Cytology on Treatment of Patients with Pancreatic Cancer
Martin A. Makary, Boston, Massachusetts

Third Place
Neoadjuvant Chemo-Radiotherapy for Esophageal Cancer. Is it Worthwhile?
Wael Z. Tamin, MD, Worcester, Massachusetts

1998

First Place
Does Uninjured Skin Release Pro-Inflammatory Cytokines Following Trauma and Hemorrhage?
Robert A. Catania, MD, Providence, Rhode Island

Second Place
Percutaneous Sclerosis of Recurrent Thyroid Cysts
Sara W. Mayo, MD, Portland, Maine

Third Place
Extracorporeal Membrane Oxygenation for Non-Neonatal Acute Respiratory Failure
Peter T. Masiakos, MD, Boston, Massachusetts
1999

First Place
Mechanisms of the Salutary Effects of Dehydroepiandrosterone Following Trauma-Hemorrhage: Direct or Indirect Effects on Cardiac and Hepatocellular Functions
Doraid Jarrar, MD, Providence, Rhode Island

Second Place
Impact of Laparoscopic Staging in the Treatment of Pancreatic Carcinoma
Ramon E. Jimenez, MD, Boston, Massachusetts

Third Place
Is Admission for Pediatric Trauma Patients with Isolated Head Injury and Normal Head CT Scan Necessary?
Bernard Benedetto, MD, Springfield, Massachusetts

2000

First Place
Ten-Year Experience with 734 Pancreatic Resections: Changing Indications, Older Patients, and Decreasing Length of Hospitalization
James H. Balcom, IV, MD, Boston, Massachusetts

Second Place
Repair of Pectus Excavatum Deformities in Children: A New Perspective of Treatment Using Minimal Access Surgical Technique
Peter C. Wu, MD, Hartford, Connecticut

Third Place
The Effect of Grade and Surgery on Outcome of Gastrointestinal Stromal Tumors
Jean-Pierre E.N. Pierie, MD, PhD, Boston, Massachusetts

2001

First Place
Abnormal Motility in Ulcerative Colitis: Role of Inflammatory Cytokines
Matthew D. Vrees, MD, Providence, Rhode Island

Second Place
Late Outcomes After Laparoscopic Surgery for Gastroesophageal Reflux Disease
Jean Y. Liu, MD, White River Junction, Vermont
Third Place
Hand-Assisted Laparoscopic Liver Surgery
Marc Anotonetti, MD, Hartford, Connecticut

2002
First Place
MEN2: Genotype-Phenotype Analysis
Lin wah Yip, MD, Houston, Texas

Second Place
Casting Type Calcifications with Invasion and High-Grade DCIS: A More Aggressive Disease?
Raul G. Zunzunegui, MD, Providence, Rhode Island

Third Place
Minimally Invasive Collis Gastroplasty: Institutional Experience
David H. Rothstein, MD, Portland, Maine

Third Place
Management of Adult Splenic Injury: A 20-year Perspective
Kimberly L. Hartnett, MD, Portland, Maine

2003
First Place
Major Lower Extremity Amputation: Outcome of a Modern Series
Bernadette Aulivola, MD, Boston, Massachusetts

Second Place
Is Completion Lymphadenectomy Following a Positive Sentinel Lymph Node Biopsy for Malignant Cutaneous Melanoma Always Necessary?
Nathel Elias, MD, Boston, Massachusetts

2004
First Place
Poly ADP-Ribose Polymerase (PARP) Inhibition Modulates Skeletal Muscle Injury Following Ischemia Reperfusion
Hong T. Hua, MD, Boston, MA

Second Place
Carotid Endarterectomy in 1650 Patients Under 60 Years Old: Implications for Screening
Desarom Teso, MD, Waterbury, Connecticut
**Third Place**
Localizing Colorectal Cancer by Colonoscopy: Are We Missing the Boat?
Nicole P. Piscatelli, MD, Burlington, Vermont

2005

**First Place**
Neoadjuvant Therapy and Local Recurrence in Pancreatic Adenocarcinoma
Sarah E. Greer, MD, Lebanon, New Hampshire

**Second Place**
Risk Factors for the Development of Abdominal Abscess Following Operation for Perforated Appendicitis: A Multi-Center Case Control Study
Marion C.W. Henry, MD, New Haven, Connecticut

**Third Place (tie)**
Is Right Hemicolecction for 2.0 cm Appendiceal Carcinoids Justified
Zubin M. Bamboat, MD, Boston, Massachusetts

Women in Surgery: Do We Really Understand the Deterrents?
Debra A. Gargiulo, MD, Burlington, Vermont

2006

**First Place**
Evolving Patterns in the Detection of Pancreatic Neuroendocrine Tumors (PNETs): The Massachusetts General Hospital Experience from 1977 – 2005
Parsia A. Vagefi, MD, Boston, Massachusetts

**Second Place**
Improved Outcome Following Colectomy for Fulminant Pseudomembranous Colitis (PMC)
Syed O. Ali, MD, Hartford, Connecticut

**Third Place**
Endoscopically Assisted Laparoscopic Resections of Submucosal Gastric and GE Junction Tumors: A Novel Approach to Resection Based on Tumor Location
Alicia Privette, MD, Burlington, Vermont
2007

First Place
Improving Communication in the Surgical Intensive Care Unit: A Prospective Trial
Mallory Williams, MD, Boston, Massachusetts

Second Place
Do All Patients Undergoing Parathyroidectomy Require Additional Neck Exploration When Intraoperative PTH Levels Do Not Decrease Appropriately?
Patrick B. O’Neal, MD, Boston, Massachusetts

Third Place
Angiographic Embolization for Gastroduodenal Hemorrhage: Safety, Efficacy, and Predictors of Outcome
George A. Poultsides, MD, Farmington, Connecticut

2008

First Place
Extracorporeal Membrane Oxygenation for Non-neonatal Acute Respiratory Failure: The Massachusetts General Hospital Experience from 1990 to 2008
Deepika Nehra, MD, Boston, Massachusetts

Second Place
Fulminant Clostridium Difficile Colitis: Patterns of Care and Predictors of Mortality
Elizabeth A Sailhamer, MD, Boston, Massachusetts

Third Place
Outcomes Following Thyroidectomy and Parathyroidectomy in Pregnant Women in the US
SreyRam Kuy, MD, New Haven, Connecticut

2009

First Place
Family and Gender Impact Career Goals: Results of a National Survey of 4586 Surgery Residents
Kate V. Viola, MD, Yale University School of Medicine, New Haven, Connecticut

Second Place
Surgery and Radiation Therapy for Abdominal and Retroperitoneal Sarcoma: Both Necessary and Sufficient?
Jessica P. Simons, MD, University of Massachusetts Medical School, Worcester, Massachusetts
Third Place
Pre-Operative Predictors of Positive or Close Margins Following Initial Partial Mastectomy for Breast Cancer
Alicia R. Privette, MD, University of Vermont/Fletcher Allen Health Care, Burlington, Vermont

2010
First Place
Acute Cholecystitis in the Elderly. Is Cholecystectomy Necessary?
Edward McGillicuddy, MD, Yale University School of Medicine

Second Place
The CT Diagnosis of Pneumatosis Intestinalis: Clinical Measures Predictive of the Need for Surgical Intervention
Vincent Duron, MD, Brown Medical School

Third Place
Aeromedical Transport of Patients With Traumatic Injuries: Discharge Within 24 Hours
Meredith Sorensen, MD, Dartmouth Hitchcock Medical Center

2011
First Place
The Clinical and Economic Impact of a Sustained Program in Global Plastic Surgery: Valuing Cleft Care in Resource-Poor Settings
Christopher D. Hughes, MD, University of Connecticut School of Medicine

Second Place
Join the Club: Impact of Resident and Attending Social Interactions on Overall Satisfaction Among 4,390 General Surgery Residents
Michael C. Sullivan, MD, Yale School of Medicine

Third Place
Variability in Utilization of Neoadjuvant Chemotherapy in Treatment of Women with Invasive Breast Cancer Eligible for Breast Conservation Therapy
Jill K. Onesti, MD, Grand Rapids Medical Education Partners
2012

First Place
Graduating Surgical Resident Operative Confidence: Insights into Residency Training Environment
Annabelle L. Fonseca, MD, Yale University School of Medicine, Department of Surgery

Second Place
Secondary Overtriage: The Burden of Unnecessary Interfacility Transfers in a Rural Trauma System
Meredith J. Sorensen, MD, Dartmouth Hitchcock Medical Center

Third Place
Impact of Immuno-compromised Status on Outcomes in Patients with Necrotizing Soft Tissue Infection
Emily K. Zeung, MD, Brigham and Women’s Hospital

2013

First Place
Reducing Postoperative Venous Thromboembolism Complications with a Standardized Risk-Stratified Protocol and Mobilization Program
Michael R. Cassidy, Boston University Medical Center

Second Place
Epidemiology and Outcomes of C. Difficile Infections in the Elderly
Courtney Collins, University of Massachusetts

Third Place
Impact of Insurance Type on Pancreatic Cancer Outcomes: A Decade in Review
Mariam Eskander, Beth Israel Deaconess Medical Center

2014

First Place (tie)
Peri-Operative Bundle Reduces Post-Operative Hepatic Surgery Infections
Maureen V. Hill, MD, Dartmouth Hitchcock Medical Center

The Liver Transplant Timeline: A Comparison of Patients with and without Hepatocellular Carcinoma from Listing to Post-Transplant Care
Madhukar S. Patel, MD, Massachusetts General Hospital/Harvard Medical School
First Place
Suboptimal Compliance with NCCN Melanoma Guidelines: Who Is at Risk?
Andrew M. Blakely, MD, Rhode Island Hospital/Brown University

Second Place
Operative vs. Non-Operative Management of Pediatric Blunt Pancreatic Trauma: Evaluation of the National Trauma Data Bank
Maria Carmen Mora, MD, Baystate Medical Center, Tufts University School of Medicine

Clinical Science Award
Single Incision Pediatric Endoscopic Surgery with a Glove Access Technique Versus Multiport Laparoscopic Appendectomy in Children: A Retrospective Study
Maria Carmen Mora, MD, Baystate Medical Center

Basic Science Award
Vascular Endothelial Growth Factor Accelerates Compensatory Lung Growth by Increasing Alveolar Units
Duy Dao, MD, Boston Children’s Hospital

Historical Award
William W.L. Glenn: Surgeon-Scientist, Inventor, and NESS President
Andrew C.W. Baldwin, MD, Yale School of Medicine

Clinical Science Awards
The Impact of Race on the Surgical Management of Adhesive Small Bowel Obstruction
Alexander S. Chiu, MD, Yale School of Medicine

A Guideline for Discharge Opioid Prescriptions After Inpatient General Surgical Procedures
Maureen Hill, MD, Dartmouth-Hitchcock Medical Center

The Impact of an Acute Care Surgery Model on the General Surgery Service Revenue Stream
Adam N. Paine, MD, University of Vermont Medical Center

Basic Science Award
Tissue Engineering Approaches for Treating Long Gap Esophageal Atresia
Ishna Sharma, MD, UConn Health
NEW MEMBER AWARD RECIPIENTS

Sponsored by the NESS Scholars Foundation

2003

(Tie)
The Cost of Operative Training for Residents
Timothy J. Babineau, MD, Boston, Massachusetts

Renal Transplant Survival from Older Donors: A Single Center Experience
Paul E. Morrissey, MD, Providence, Rhode Island

2004

Reduction of Hyperglycemia and Nosocomial Infections in a General-Surgical Intensive-Care Unit
George A. Perdrizet, MD, Hartford, Connecticut

2005

Treatment of Hepatic Abscess
David A. Iannitti, MD, Providence, Rhode Island

2006

Enhancing Compliance with Medicare Guidelines for Surgical Infection Prevention (SIP): An Institutional Experience with a Cross Disciplinary Quality Improvement Team
Laurence E. McCAhill, MD, Burlington, Vermont

2007 –

2010

No award given.

2011

Long Term Complications After MammoSite Brachytherapy Compared to Whole Breast Radiation Therapy
Kari M. Rosenkranz, MD, Lebanon, New Hampshire

2012 –

2015

No award given.

2016

Surgical Technique and Time to Adjuvant Chemotherapy in Breast Cancer Patients
Anees B. Chagpar, MD, MBA, MPH, Yale University, New Haven, Connecticut

2017

Pregnancy and Motherhood During Surgical Training: Results of a Nationwide Survey of General Surgery Residents
Erika L. Rangel, MD, Brigham and Women’s Hospital, Boston, Massachusetts
BEST POSTER AWARD RECIPIENTS

Sponsored by the NESS Scholars Foundation

2005  Decellularized Ovine Arterial Tissue: A Three-Dimensional Tubular Scaffold For Tissue Engineering Small Diameter Vascular Conduits
Matthew P. Brennan, MD, Yale University, New Haven, Connecticut

2006  A Simplified Technique for Single Stage Breast Reconstruction
William G. Austen, Jr., MD, Massachusetts General Hospital, Boston, Massachusetts

2007  Clinical Outcomes in Patients With Severe Diabetic Foot Ulcers Treated With and Without Hyperbaric Oxygen
George A. Perdrizet, MD, University of Connecticut, Hartford Hospital, Hartford, Connecticut

2008  Immunohistological Characterization of Tissue Engineered Graft Remodeling in Severe Combined Immunodeficient/Beige (SCID/bg) Mouse Model
Rajendra F. Sawh-Martinez, BS, Yale University School of Medicine

2009  N-acetyl-L-cysteine (NAC) Reduces Intraabdominal Adhesion Formation Through The Upregulation of Peritoneal Fibrinolytic Activity And Antioxidant Defenses
Daniel I. Chu, MD, Boston University School of Medicine

2010  Oral Resvaratrol Supplementation Reverses Glucose Intolerance: The Role of Skeletal Muscle and the Liver
Michael P. Robich, MD, Beth Israel Deaconess Medical Center, Boston, MA

2011  Photochemical Tissue Bonding Improves Colonic Anastomotic Strength
Prabhu Senthil-Kumar, MD, Massachusetts General Hospital
<table>
<thead>
<tr>
<th>Year</th>
<th>Title</th>
<th>Author</th>
<th>Institution</th>
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<tbody>
<tr>
<td>2012</td>
<td>Colon Cancer Metastases Are Not Infiltrated by Favorably Prognostic T Cells: Evidence for the Escape Phase of the Cancer Immunoediting Hypothesis in Humans</td>
<td>Bryan P. Stanifer, MD, Dartmouth Hitchcock Medical Center</td>
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<tr>
<td>2013</td>
<td>A Novel Approach to Targeted Oncologic Therapy – Co-Culture Viability of Polymer Prodrug Conjugation to Mesenchymal Stem Cells</td>
<td>Kaitlyn Wong, Baystate Medical Center</td>
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<td>2014</td>
<td>Effective Triage of Early Stage Lung Cancer Patients in Community Hospitals Yields Low Surgical Mortality</td>
<td>Christopher T. Ducko, Brigham and Women’s Hospital</td>
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</tr>
<tr>
<td>2015</td>
<td>Improving Perioperative Counseling for Emergency Abdominal Surgery: Creation of a Scoring Tool to Predict One-Year Mortality in the Elderly</td>
<td>Olubode A. Olufajo, MD, Brigham and Women’s Hospital, Boston, Massachusetts</td>
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<tr>
<td>2016</td>
<td>Analysis of Trends of Breast Cancer Recurrence Detection</td>
<td>Trishul Kapoor, MD, University of Vermont, College of Medicine, Burlington, Vermont</td>
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<tr>
<td>2017</td>
<td>Local Excision Versus Radical Resection for 1 to 2 cm Carcinoid Tumors of the Rectum: A National Cancer Database Analysis</td>
<td>Adam C. Fields, MD, Brigham and Women’s Hospital, Boston, Massachusetts</td>
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ACS/NESS HEALTH POLICY AND MANAGEMENT SCHOLARSHIP RECIPIENTS

Sponsored by the NESS Scholars Foundation

The American College of Surgeons and the New England Surgical Society Scholars Foundation offer an annual scholarship to subsidize attendance and participation in the Executive Leadership Program in Health Policy and Management at Brandeis University in Waltham, Massachusetts. The award is in the amount of $8,000, to be used toward the cost of tuition, travel, housing, and subsistence during the period of the course.

2012 Joel D. Lafleur, MD, Rockport, Maine
2013 Michael P. Hirsh, MD, Northboro, Massachusetts
2014 David McAneny, MD, Boston, Massachusetts
2015 Neal E. Seymour, MD, Springfield, Massachusetts
2016 Christopher S. Muratore, MD, Providence, Rhode Island
2017 Alik Farber, MD, Boston, Massachusetts
2018 John R. Romanelli, MD, Springfield, Massachusetts
SCHOLARS RESEARCH GRANT RECIPIENTS

Sponsored by the NESS Scholars Foundation

The Scholars Research Grant allows the recipient to pursue research in diverse areas of medicine. The purpose of the Scholars Research Grant is to advance innovative surgical research via multiyear support. The recipient of this grant will be awarded $10,000 in the initial year; the grant can then be renewed by review of the NESS Scholars Foundation Board of Trustees for a succeeding year, for up to an additional $10,000.

2014  The Role of Neuropilin-1 (NRP1) on Dendritic Cells in the Tolerogenic Liver Environment
      Heung Bae Kim, MD, Children’s Hospital, Boston, Massachusetts

2015  Documentation of Enteric Neurogenesis in an In Vivo Murine Model
      Robert A. Cowles, MD, Yale University, New Haven, Connecticut

2016  Assessment of the Correlation Between Gastric Morphology, Gastric Emptying, Post Prandial GLP-1 Response, and Hunger Scores Following Longitudinal Sleeve Gastrectomy
      Richard A. Perugini, MD, University of Massachusetts Memorial Medical Center, Worcester, Massachusetts

2017  The Role of Intestinal Immunity in the Anti-Diabetic Effects of Sleeve Gastrectomy
      Eric G. Sheu, MD, Brigham and Women’s Hospital, Boston, Massachusetts
NEW ENGLAND SURGICAL SOCIETY

2018 ANNUAL MEETING

SEPTEMBER 21 – SEPTEMBER 23, 2018

WESTIN PORTLAND HARBORVIEW
PORTLAND, MAINE

FRIDAY, SEPTEMBER 21, 2018

9:00 AM – 5:00 PM  REGISTRATION
Lobby Foyer

9:00 AM – 5:00 PM  SPEAKER READY ROOM
Lobby Foyer

9:00 AM – 5:00 PM  POSTER OF DISTINCTION SET-UP
Longfellow (Lower Level)

12:00 PM – 3:00 PM  EXHIBIT HALL HOURS
Longfellow (Lower Level)
Scientific Session I
1:00 PM – 2:30 PM
Grand Ballroom (Main Level)

Co-Moderators: Robert J. Touloukian
Kari Rosenkranz

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

1. Identifying Preoperative Predictors of Weight Loss and Weight Regain After Roux-en-Y Gastric Bypass: A Prospective Human Study
*Hassan Aliakbarian, *Keyvan Heshmati, Eric Sheu, Ali Tavakkoli
Brigham and Women's Hospital, Boston, MA

2. Subtotal Parathyroidectomy Versus Total Parathyroidectomy with Autotransplantation for Secondary Hyperparathyroidism in Dialysis Patients: Short and Long-Term Outcomes
*Polina Zmijewski1, *Jonathan Staloff2, *Madeline Wozniak1, Peter J. Mazzaglia1
1Rhode Island Hospital, Providence, RI; 2Alpert School of Medicine, Providence, RI

1Saint Mary's Medical Center, Lewiston, ME; 2Tufts University Medical Center Maine Medical Center, Portland, ME

+ RPE Eligible Papers
* NESS Non-Members
4. Improving Patient Centered Outcomes with Robotic Hepatic Resection for Liver Tumors in a Tertiary Academic Transplant Center  
Lahey Clinic, Burlington, MA

5. Surgical Repair of Enterotomies Using Three-Dimensional Printed Biopatches in a Rat Model  
*Renee M. Maina1, *Taras Lysyy1, *Peter Geibel1, *Maria J. Barahona1, *Michele Finotti1,2, David Mulligan1, *John P. Geibel1  
1Yale School of Medicine, New Haven, CT; 2University of Padua, Transplant and Hepatobiliary Surgery, Padua, Italy

Brief 1. Improved Utilization of Kidney Allografts from Deceased Donor with High Kidney Donor Profile Index in Select Candidates  
Massachusetts General Hospital, Boston, MA

Brief 2. Impact of Autologous Blood Transfusion on Survival and Recurrence for Patients Undergoing Hepatectomy for Colorectal Cancer Liver Metastases  
*Ravinder Kang1, *Bronte E. Seath2, *Viola Huang1, Richard J. Barth Jr.1  
1Dartmouth Hitchcock Medical Center, Lebanon, NH; 2Geisel School of Medicine at Dartmouth, Hanover, NH

Brief 3. Hospital Operative Volume Is an Essential Quality Indicator for General Surgery Operations Performed Emergently in Geriatric Patients  
*Robert D. Becher1, *Michael P. DeWane1, *Nitin Sukumar1, *Marilyn J. Stolar1, *Thomas M. Gill1, Robert M. Becher2, Adrian A. Maung1, Kevin M. Schuster1, Kimberly A. Davis1  
1Yale School of Medicine, New Haven, CT; 2Park Surgical Associates, Brockton, MA

* NESS Non-Members
Brief 4.  Training Surgeons with Organs Unfit to Transplant  
*Adam Petchers¹, *Sheila Russell¹, *Fuyuki Hirashima²,  
Mitchell Norotsky², Carlos Marroquin²  
¹University of Vermont, Burlington, VT; ²University of Vermont  
Medical Center, Burlington, VT

Brief 5.  Impact of Race, Insurance Status, and Primary  
Language on Patients with Pancreatic  
Adenocarcinoma at an Urban, Academic,  
Safety-Net Medical Center  
*Praveen Sridhar, *Priya Misir, David B. McAneny,  
*Susanna de Geus, Jennifer F. Tseng, *Teviah E. Sachs  
Boston University, Boston, MA

2:30 PM – 3:00 PM  
COFFEE BREAK: VISIT  
EXHIBITS & POSTERS OF  
DISTINCTION/E-POSTERS  
Longfellow (Lower Level)

* NESS Non-Members
Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

+6. Practice Patterns and Guideline Non-Adherence in Surgical Management of Appendiceal Carcinoid Tumors
*Yale University School of Medicine, New Haven, CT

+7. Clinical Outcomes Following Identification of Tip Appendicitis on Ultrasonography and CT Scan
*Brian Leung, *Nikhil Madhuripan, *Katharine Bittner, *Vida Rastegar, David Tashjian, Kevin Moriarty,
*Stanley Polansky, Michael Tirabassi
*Baystate Medical Center, Springfield, MA

8. An Interdisciplinary Care Pathway for Frail Geriatric Trauma Patients
*Meghan McDonald, Ali Salim, *Zara Cooper
*Brigham and Women’s Hospital, Boston, MA

+ RPE Eligible Papers
* NESS Non-Members
9. Atrial Fibrillation After Anatomic Lung Resection: Amiodarone Prophylaxis and Risk Stratification

*Eleah Porter¹, *Kayla Fay¹, *Emlyn Diakow², *Timothy Millington¹, *David Finley¹, *Joseph Phillips¹

¹Dartmouth-Hitchcock Medical Center, Lebanon, NH; ²Geisel School of Medicine, Hanover, NH

10. Early Postoperative Death in Extreme-Risk Patients: A Perspective on Surgical Futility

*Alexander Chiu, Raymond A. Jean, Kevin Y. Pei

Yale School of Medicine, New Haven, CT

11. Frailty Costs: The Economic Impact of Frailty in the Elective Surgical Patient


Maine Medical Center, Portland, ME

12. 53% Decline in Rhode Island Invasive Breast Cancer Mortality Since 1987: Mammography Prevents Mortality

Blake Cady¹, *John P. Fulton²

¹Harvard Medical School, Brookline, MA; ²Rhode Island Cancer Registry, Providence, RI

13. Intimate Partner Violence Screening Training for Surgical Residents

*Ishna Sharma¹, Christine Finck²

¹University of Connecticut, Farmington, CT; ²Connecticut Children’s Medical Center, Hartford, CT

Institute 6. Defining Consult Competence: A Novel Tool for Evaluating the Surgical Consult Entrustable Professional Activity (EPA)

*Ryland S. Stucke¹, Meredith J. Sorensen¹, *Alexandra Rosser², *Sarah Sullivan²

¹Dartmouth-Hitchcock Medical Center, Lebanon, NH; ²University of Wisconsin-Madison, Madison, WI

+ RPE Eligible Papers
* NESS Non-Members
Brief 7.  A Comparison of Partial and Total Colectomy in the Surgical Management of Clostridium Difficile Colitis
*David Peprah, *Alexander S. Chiu, Raymond A. Jean, Kevin Y. Pei
* Yale School of Medicine, New Haven, CT

Brief 8.  Implementation of Enhanced Recovery After Surgery Decreases the Length of Stay Following Living Kidney Donor Nephrectomy
* Massachusetts General Hospital, Boston, MA

5:00 PM – 5:45 PM  STATE CAUCUS MEETINGS
Connecticut – Winslow Homer
Maine – Rines A
Massachusetts – Grand Ballroom
New Hampshire – Rines B
Rhode Island – Hawthorne
Vermont – Marsden Hartley (Mezz Level)

6:00 PM – 7:00 PM  WELCOME RECEPTION
Ballroom Pre-Function

* NESS Non-Members
SPECIALTY GROUP BREAKFASTS
7:00 AM – 7:45 AM
Winslow Homer Ballroom
Navigating the Medicolegal Climate for Residents and Young Surgeons
Moderator: Walter E. Longo
Faculty: Mark G. Lavoie, Attorney
Anne C. Larkin
Longfellow (Lower Level)
Posters of Distinction Session for Best Poster Award
Moderator: Kari S. Rosenkranz
Scientific Session III
7:45 AM – 8:40 AM
Grand Ballroom
Co-Moderators: Brigid K. Killelea
Matthew A. Conway

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

Roger Williams Medical Center, Providence, RI

15. Burden of Emergency Pediatric Surgical Procedures in Uganda: A Possible New Metric for Health System Performance in Resource-Limited Settings
¹University of Virginia, Charlottesville, VA; ²Yale University, New Haven, CT; ³Makerere University, Kampala, Uganda

16. Decreased Post-Surgical Opioid Prescribing Does Not Affect Provider Satisfaction Scores
*Christopher E. Louie, *Julia L. Kelly, Richard J. Barth, Jr.
Dartmouth-Hitchcock Medical Center, Lebanon, NH

+ RPE Eligible Papers
* NESS Non-Members
+17. Impact of Hepatectomy First in Management of Stage IV Colon Cancer with Synchronous Liver Metastases
   *Yale College of Medicine, New Haven, CT

8:40 AM – 8:55 AM  INTRODUCTION OF NEW MEMBERS
   Grand Ballroom

Paper of the Year & Scientific Session IV
8:55 AM – 10:15 AM
   Grand Ballroom
   Co-Moderators: Timothy L. Fitzgerald
   Jennifer LaFemina

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

18. Paper of the Year Award: Genomic Responses in Mouse Models Poorly Mimic Human Inflammatory Diseases
   Ronald G. Tompkins
   *Massachusetts General Hospital, Boston, MA

   *Yale University, New Haven, CT
+20. **Does Overlapping Surgery Result in Worse Surgical Outcomes? A Systematic Review and Meta-Analysis**


¹Department of Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA; ²Department of Orthopedic Surgery, Harvard Medical School, Boston, MA; ³Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA; ⁴Department of Surgery, Division of Urology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA; ⁵Lawrence Center for Quality and Safety, Massachusetts General Hospital and Massachusetts General Physicians' Organization, Boston, MA; ⁶Department of Orthopedic Surgery, Boston Children's Hospital, Harvard Medical School, Boston, MA

21. **Volume-Outcome Relationship in Portoenterostomy for Biliary Atresia in the United States**

*Nathan Maassel, *Alex S. Chiu, Robert A. Cowles, Peter S. Yoo, *Daniel G. Solomon

Yale University School of Medicine, New Haven, CT

22. **Safety of Radiation Therapy Following Mastectomy with Immediate Reconstruction for Breast Cancer**

*Lauren A. Gamble, *Julia Kelly, *Lesley Jarvis, Kari Rosenkranz, Christina Angeles

Dartmouth-Hitchcock Medical Center, Lebanon, NH

Brief 9. **Contemporary Management of Spontaneous Retroperitoneal and Rectus Sheath Hematomas**

*Michael Warren, Bishwajit Bhattacharya, Adrian Maung, Kimberly Davis

Yale School of Medicine, New Haven, CT

Brief 10. **Driving Safety Among Surgical Residents in the Era of Duty Hour Restrictions**


Yale University School of Medicine, New Haven, CT

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+ RPE Eligible Papers
* NESS Non-Members

86
Brief 11. Perioperative Outcomes After Thyroidectomy: Does the Level of the First Assist Matter?
*Ravinder Kang¹, *Jesse A. Columbo¹, *Niveditta Ramkumar², *Spencer W. Trooboff¹, *Mark Eid¹, *David T. Hughes³, Meredith J. Sorensen¹

¹Dartmouth Hitchcock Medical Center, Lebanon, NH; ²The Dartmouth Institute, Hanover, NH; ³University of Michigan Medical

10:15 AM – 10:45 AM COFFEE BREAK: VISIT EXHIBITS & POSTERS OF DISTINCTION/E-POSTERS
Longfellow (Lower Level)

* NESS Non-Members
POSTERS OF DISTINCTION & E-POSTERS

*POD1.  Clinical Science Second Place Award – NESS Resident and Fellow Research Day
Preemptive Analgesia Decreases Pain Following Anorectal Surgery: A Prospective, Randomized, Double-Blinded, Placebo-Controlled Trial
*Justin T. Van Backer¹,², *Matthew R. Jordan², *Danielle T. Leahy³, Jesse S. Moore⁴, *Peter Callas⁴,⁵, *Timothy Dominick³, *Peter A. Cataldo⁴
¹Department of General Surgery, Albany Medical Center, Albany, NY; ²Department of Emergency Medicine, Naval Medical Center, Portsmouth, VA; ³Department of Anesthesiology, University of Vermont Medical Center, Burlington, VT; ⁴Department of Surgery, University of Vermont Medical Center, Burlington, VT; ⁵Department of Statistics, University of Vermont, Burlington, VT

*POD2.  Basic Science First Place Award – NESS Resident and Fellow Research Day
Programmed Cell Death Receptor-1 (PD-1)’s Effects on Innate Immune Cells: Unraveling Lung Injury After Neonatal Intra-Abdominal Sepsis
Brown University/Rhode Island Hospital, Providence, RI

*POD3.  Clinical Science First Place Award – NESS Resident and Fellow Research Day
What Is the Risk of Anal Carcinoma in Patients with Anal Intraepithelial Neoplasia III?
*Grace C. Lee¹, Hiroko Kunitake¹, *Holly Milch¹, *Lieba R. Savitt¹, *Caitlin Stafford¹, Liliana G. Bordeianou¹, *Todd D. Francone², Rocco Ricciardi¹
¹Massachusetts General Hospital, Boston, MA; ²Newton Wellesley Hospital, Newton, MA

* Poster of Distinction
* NESS Non-Members
**POD4.**  Basic Science Second Place Award – NESS Resident and Fellow Research Day

DNA Damage Response Genes Differentiate Colitis from Neoplasia in Colitis-Associated Colon Cancer


¹Department of Surgery, Albany Medical Center, Albany, NY; ²Department of Immunology and Microbial Disease, Albany Medical College, Albany, NY; ³Albany Medical College, Albany, NY; ⁴Department of Comparative Medicine, Yale University, New Haven, CT

**POD5.**  Multicenter Experience with Valve-in-Valve Transcatheter Aortic Valve Replacement Compared with Primary, Native Valve Transcatheter Aortic Valve Replacement


¹Maine Medical Center, Portland, ME; ²University of Vermont Medical Center, Burlington, VT; ³Dartmouth-Hitchcock Medical Center, Lebanon, NH; ⁴Catholic Medical Center, Manchester, NH; ⁵Eastern Maine Medical Center, Bangor, ME; ⁶Dartmouth-Hitchcock Medical Center, Lebanon, NH

**POD6.**  Surgery’s #Metoo Movement – Results of a Sexual Harassment Survey in an Academic Institution

Jacqueline Wu, *Susan Kartiko, *Aditi Kapil

Baystate Medical Center, Springfield, MA

* Poster of Distinction
* NESS Non-Members
• POD7.  Delay in Operation for Hirschsprung Disease Decreases Length of Stay: A 5-Year Analysis of NSQIP Data
Yale School of Medicine, New Haven, CT

• POD8.  Medicare Beneficiaries with Rectal Cancer in Regions with Lower Colorectal Surgeon Density Have Higher Rates of Abdominoperineal Resection: A Dartmouth Atlas Study
Dartmouth Hitchcock Medical Center, Lebanon, NH

• POD9.  Understanding Entrustment Decision Making By Surgical Program Directors
*Samantha L. Ahle1, *Katherine Gielissen1, *Danya E. Keene2, *Justin D. Blasberg1
1Yale School of Medicine, New Haven, CT; 2Yale School of Public Health, New Haven, CT

• POD10.  Robotic-Assisted Liver Resection for Metastatic Colorectal Cancer: A Multicenter Evaluation of Long-Term and Oncologic Outcomes
1Rhode Island Hospital, Alpert Medical School of Brown University, Providence, RI; 2University of Pittsburgh Medical Center, Pittsburgh, PA; 3City of Hope National Medical Center, Duarte, CA; 4Memorial Sloan-Kettering, New York, NY; 5Cleveland Clinic, Cleveland, OH; 6Carolina Medical Center, Charlotte, NC; 7Ghent University Hospital Medical School, Ghent, Belgium; 8Tulane University, New Orleans, LA
P11. Alginate Microparticles Loaded with Basic Fibroblast Growth Factor Induce Tissue Coverage in a Rat Model of Myelomeningocele


¹Yale University School of Medicine, New Haven, CT; ²Department of Biomedical Engineering, School of Engineering and Applied Science, Yale University, New Haven, CT; ³Yale University School of Medicine, Department of Biomedical Engineering, School of Engineering and Applied Science, Yale University, New Haven, CT


Massachusetts General Hospital, Boston, MA

P13. Bioengineered Nanofiber Scaffold Loaded with Resveratrol Improves Cardiac Function Following Myocardial Infarction After Four Weeks


University of Connecticut Health Center, Farmington, CT

P14. Developing a Blood Biomarker Model for Predicting Multiple Infection Episodes Following Blunt Trauma


¹Massachusetts General Hospital/Harvard Medical School/Shriners Hospitals for Children-Boston, Boston, MA; ²Bern University Hospital, Bern, Switzerland; ³Massachusetts General Hospital/Shriners Hospitals for Children-Boston, Boston, MA; ⁴University of Massachusetts, Amherst, Amherst, MA; ⁵Massachusetts General Hospital, Boston, MA; ⁶Massachusetts General Hospital/Harvard Medical School, Boston, MA

* NESS Non-Members
P15. Accuracy of MELD-Na As a Predictor of Morbidity and Mortality in Cirrhotic Patients with Ascites Undergoing General Surgical Procedures
*Nathan L. Maassel¹, *Matthew M. Fleming¹, *Jiajun Luo², *Yawei Zhang²,³, Kevin Y. Pei¹
¹Yale, New Haven, CT; ²Section of Surgical Outcomes and Epidemiology, Department of Surgery, Yale School of Medicine, New Haven, CT; ³Department of Environmental Health Sciences, Yale School of Public Health, New Haven, CT

*Muhammad Anwer¹,², Pramod Bonde³,⁴
¹Yale New Haven, Woodbridge, CT; ²Yale New Haven Hospital, New Haven, CT; ³Yale New Haven, New Haven, CT; ⁴Yale New Haven Hospital, New Haven, CT

P17. Sociodemographic Predictors of Inpatient Costs for Solid Organ Transplants
Raymond A. Jean, *Alexander S. Chiu, Peter S. Yoo
Yale School of Medicine, New Haven, CT

P18. Withdrawn

P19. The Geriatric Nutritional Risk Index Is a Powerful Predictor of Adverse Outcome in the Elderly Emergency Surgery Patient
Massachusetts General Hospital, Boston, MA

* NESS Non-Members
P20. Does BMI Predict Outcomes in Emergency General Surgery?
*Matthew M. Fleming¹, *Jiajun Luo², *Yawei Zhang²,³, Kevin Y. Pei¹
¹Yale School of Medicine, Department of Surgery, New Haven, CT; ²Section of Surgical Outcomes and Epidemiology, Department of Surgery, Yale School of Medicine, New Haven, CT; ³Department of Environmental Health Sciences, Yale School of Public Health, New Haven, CT

P21. KCC4/IGF1 Dysregulation: A Novel Signaling Hallmark of Non-Functional Adrenocortical Carcinomas
*Taylor C. Brown¹, *Norman G. Nicolson¹, *Adam Stenman², *Christofer C. Juhlin², *Courtney E. Gibson¹, Glenda G. Callender¹, Tobias Carling¹
¹Yale University School of Medicine, Department of Surgery, New Haven, CT; ²Department of Oncology-Pathology, Karolinska Institutet, Stockholm, Sweden

P22. The Risk of Delayed Adjuvant Chemotherapy with Immediate Breast Reconstruction
*Amulya C. Alapati, *Aaron Fleishman, Ted A. James
Beth Israel Deaconess Medical center, Boston, MA

P23. Transurethral Thulium Laser Prostatectomy in the Outpatient Setting: Benefits and Outcomes at a Single Center in the United States
University of Vermont, Burlington, VT

P24. Protection from Ischemic Injury in the Small Intestine Using Nutraceutical Nanoparticles in a Rat Model
*Vanessa Baratta¹, *Maria J. Barahona¹, *Michele Finotti¹,², *Renee M. Maina¹, *Giorgio Caturegli¹, *Taras Lysyy¹, *Francesco D’Amico¹,², David C. Mulligan¹, *John P. Geibel¹
¹Yale, New Haven, CT; ²University of Padua, Padua, Italy

* NESS Non-Members
P25.  Assessing Cost-Effectiveness of Admission and Interval Imaging to Improve Outcome After Delayed Traumatic Intracranial Hemorrhage: A Decision-Analytical Model
*Norman G. Nicolson, Kevin Y. Pei
Yale School of Medicine, Department of Surgery, New Haven, CT

University of Massachusetts Medical School, Worcester, MA

P27.  Probing the Portal System As the Source of Inflammation in An Acute Systemic Burn Model
*Fatemeh Adiliaghdam, *Florian Kuehn, *Laurence Rahme, Richard Hodin
Massachusetts General Hospital, Boston, MA

P28.  Increasing Incidence of Stage IV Breast Cancer Since 2002
*Danielle R. Heller¹,², *Brigid K. Killelea¹,³, *Christos Hatzis¹,³, *Lajos Pusztai¹,³, Donald R. Lannin¹,³
¹Yale University School of Medicine, New Haven, CT; ²Yale-New Haven Hospital Department of Surgery, New Haven, CT; ³Yale Cancer Center, New Haven, CT

P29.  Correlating Screening and Ductal Carcinoma in Situ Incidence Rates in the U.S.
*Biqi Zhang¹, Tawakalitu S. Oseni², Suzanne B. Cooper², *Michele A. Gadd², *Kevin S. Hughes², *David C. Chang²
¹Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, Boston, MA

P30.  Adrenocortical Suicide Gene CYP4B1 Promotes Adrenocortical Carcinoma Cell Death by Dysregulating the TNF Signaling Pathway
*Norman G. Nicolson, Glenda G. Callender, *Courtney E. Gibson, *Reju Korah, Tobias Carling
Yale School of Medicine, Department of Surgery, New Haven, CT

* NESS Non-Members
P31. Readmission Risk After Operative Management of Empyema
Raymond A. Jean¹, *Alexander S. Chiu¹, *Daniel J. Boffa¹, Anthony W. Kim², *Frank C. Detterbeck¹, *Justin D. Blasberg¹
¹Yale School of Medicine, New Haven, CT; ²Keck School of Medicine at USC, Los Angeles, CA

P32. Early Diagnosis of Hepatic Artery Thrombosis (Hat) Post Liver Transplant Prevents Graft Loss
Hartford Hospital, Hartford, CT

P33. Opioid Prescribing Practices and Patient Use in Minimally Invasive Surgery
*Danielle T. Friedman, *Saber Ghiassi, *Matthew Hubbard, Andrew J. Duffy
Yale University, New Haven, CT

*William O’Brien, *Kalpana Gupta, Kamal M.F. Itani
VA Boston Healthcare System, Boston, MA

P35. Do Trauma Severity Scores Successfully Predict Hypersusceptibility to Infections in Trauma Patients?
¹Massachusetts General Hospital/Harvard Medical School/Shriners Hospital for Children, Boston, Boston, MA; ²Massachusetts General Hospital/Harvard Medical School, Boston, MA

* NESS Non-Members
P36. Association of Alcohol Intoxication with Better Outcomes and Relation with Hypothermia After Traumatic Brain Injury Depends on Differences in Patient and Trauma Characteristics
*Suzanne F. van Wijck1,2, Napaporn Kongkaewpaisan1, Ahmed I. Eid1, Kelsey R. Han1, Zhenyi Jia1, Karien Meier1, Nikolaos Kokoroskos1, Manasnum Kongwibulwut1, Jae Moo Lee1, Ask T. Nordestgaard1, Gabriel E. Rodriguez1, Haytham M. Kaafarani1, David R. King1, George C. Velmahos1, Gwendolyn M. Van der Wilden2, Pieta Krijnen2, Inger B. Schipper2
1Massachusetts General Hospital, Harvard Medical School, Boston, MA; 2Leiden University Medical Center, Leiden, Netherlands

P37. An Assessment of Fine Surgical Knot Tying
*Robert Cortez
Brown University/Rhode Island Hospital, Providence, RI

P38. Predictors of Delay to Venous Thromboembolism Prophylaxis in Patients with Traumatic Brain Injury: an Analysis of the Trauma Quality Improvement Program (TQIP)
*Matthew M. Fleming1, Yuehong Liu2, Yawei Zhang2,3, Kevin Y. Pei1
1Yale School of Medicine, Department of Surgery, New Haven, CT; 2Section of Surgical Outcomes and Epidemiology, Department of Surgery, Yale School of Medicine, New Haven, CT; 3Department of Environmental Health Sciences, Yale School of Public Health, New Haven, CT

P39. Predicting Workload and Stress on Academic Surgical Services
*Lane Curran1, Brittany Misercola2, David Clark2, Julianne Ontenengo2, James Whiting2
1Albany Medical College, Albany, NY; 2Maine Medical Center, Portland, ME

* NESS Non-Members
P40. Role of Novel Immunotherapy in Recurrent Thick and Ultra-Thick Melanoma
*Joshua Cohen, *Andrew M. Blakely, *Danielle S. Comissiong, Michael P. Vezeridis, Thomas J. Miner
Rhode Island Hospital, Providence, RI

P41. Bowel Function After Oncologic Resection for Colon Cancer: The Colon Does Not Matter
Dartmouth Hitchcock, Lebanon, NH

P42. When Not Winning Means Losing: Underrepresentation of Women Surgeons in Recognition Awards at a Single Institution
Brigham and Women’s Hospital, Boston, MA

P43. Opioid Requirements After Bariatric Surgery
*Deanna Palenzuela¹, *Karan Chhabra², *Robert Matthews², *Jason Pradarelli², Ali Tavakkoli²
¹Harvard Medical School, Boston, MA; ²Brigham and Women’s Hospital, Boston, MA

P44. Trends in Routine and Complex Hepatobiliary Surgery Among General and Pediatric Surgical Residents: What Is the Next Generation Learning and Is It Enough?
*Christine J. Park, *Sarah J. Armenia, Robert A. Cowles
Yale University, New Haven, CT

University of Massachusetts Medical School, Worcester, MA

* NESS Non-Members
P46. September 1918: An Unforgettable Month for New England Surgeons 100 Years Ago
David E. Clark
Maine Medical Center, Portland, ME

David E. Clark¹, *Gwendolyn Fulton², *Julianne B. Ontengco¹, *Tammy Lachance³, John E. Sutton, Jr.²
¹Maine Medical Center, Portland, ME; ²Dartmouth-Hitchcock Medical Center, Lebanon, NH; ³Central Maine Medical Center, Lewiston, ME

P48. Emergency General Surgery Operations in the Homeless: Marginal Access to Care and Poor Outcomes
*Michael P. DeWane, Adrian A. Maung, Kevin M. Schuster, Kimberly A. Davis, *Robert D. Becher
Yale School of Medicine, New Haven, CT

P49. Ten-Year Trends in Post-Mastectomy Reconstruction: A Community-Based Experience
Stamford Hospital, Stamford, CT

P50. Effect of Limited English Proficiency on Outcomes Following Cancer Operations
Boston Medical Center/Boston University, Boston, MA

P51. Community Collaboration and Explainer Videos for Opioid Education
*Colleen Kerrigan
University of Vermont Medical Center, Burlington, VT

* NESS Non-Members
P52. **Wellbeing Program Demonstrates Early Improvement in General Surgery Residency**  
Ryan J. Hendrix, *Jorind Beqari, *Michael Winton,  
*Jennifer Davids, *Ulises Torres, Anne Larkin, Jennifer LaFemina  
*University of Massachusetts Medical School, Worcester, MA

P53. **Characterizing Colonic Migrating Motor Complexes (CMMCs) Using a Novel Method in Ex Vivo Mouse Colon**  
*John R. Konen¹,², *Emily J. Joyce², *Colleen B. Kerrigan¹,²,  
*Gary M. Mawe², *Grant W. Hennig²  
¹Department of Surgery, The University of Vermont Medical Center, Burlington, VT; ²Department of Neurological Sciences, University of Vermont, Burlington, VT

P54. **National Trends in the Management of Traumatic Pediatric Abdominal Vascular Injury**  
*Katharine R. Bittner, *Erica D. Kane, *Jane Garb,  
*Ashwini S. Poola, David B. Tashjian, *Briana Leung,  
Gregory T. Banever, Kevin P. Moriarty, Michael V. Tirabassi  
Baystate Medical Center, Springfield, MA

10:45 AM – 10:50AM  **CONFERMENT OF THE NATHAN SMITH AWARD**  
John P. Welch

* NESS Non-Members
Panel – New Frontiers in Surgical Oncology

10:50 AM – 12:15 PM

Grand Ballroom

Moderator: Richard Barth

Faculty: The Local Option: The Rational Use of Local Therapy in Patients at High Risk of Dying from Metastatic Progression
Daniel J. Boffa

Neoadjuvant Therapy/Novel Imaging
Mehra Golshan

Melanoma: Translational Science and Immunotherapy Outperform
Giles F. Whalen

12:00 PM – 4:00 PM

AFTERNOON TICKETED ACTIVITIES

(*Separate Ticket Required)

Portland Art Museum/Winslow Homer Studio Tour

$32 per person

Includes a docent-led tour of the Portland Art Museum (PAM); transportation to/from the Winslow Homer Studio; and docent-led tour of the Winslow Homer Studio. Two groups will rotate between PAM and the Studio, with both groups meeting at the PAM Welcome Center. Lunch and snacks will NOT be included; breaks will be provided during the tour to purchase snacks/drinks.
12:15 PM – 1:45 PM  WOMEN IN SURGERY LUNCHEON
$30 per person (includes a boxed lunch)
Winslow Homer Ballroom

2:00 PM – 4:00 PM  LUCKY CATCH LOBSTER CHARTER
*SOLD OUT
Visit the NESS Registration desk for a waitlist
Includes a 90-minute charter lobster tour (lunch and drinks on own), located a 1/2 mile from the hotel and you will either need to walk or drive to the wharf.

6:15 PM – 7:00 PM  NEW MEMBERS PRE-RECEPTION (INVITATION ONLY)
Winslow Homer Ballroom

7:00 PM  PRESIDENT’S RECEPTION & DINNER
Business Attire
Guest Speaker: Andrew J. Pershing
Ocean Ecology, Gulf of Maine Research Institute
Lessons from the Gulf of Maine
Reception: Ballroom Balcony
Dinner: Grand Ballroom

7:00 PM – 9:30 PM  KIDS BANQUET
Hawthorne
SUNDAY, SEPTEMBER 23, 2018

7:00 AM – 11:00 AM  REGISTRATION
Lobby Foyer

7:00 AM – 10:00 AM  EXHIBIT HALL HOURS
Longfellow (Lower Level)

7:00 AM – 10:30 AM  SPEAKER READY ROOM
Lobby Foyer

7:00 AM – 8:00 AM  CONTINENTAL BREAKFAST
Longfellow (Lower Level)

7:30 AM – 8:15 AM  ANNUAL BUSINESS MEETING
(MEMBERS ONLY)
Grand Ballroom

Scientific Session V
8:15 AM – 9:20 AM
Grand Ballroom
Co-Moderators: Ali Tavakkoli
Jesse S. Moore

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

23.  Complete Neoadjuvant Treatment for Rectal Cancer
(CONTRE) Study: Long Term Results
*Yaphet Tilahun, *Howard Safran, *Matthew Vrees,
Adam Klipfel, *Leslie Roth, Steven Schechter, *Justin Yu,
*Kayla Rosati, *Thomas Dipetrillo, Nishit Shah
Warren Alpert Medical School, Providence, RI

* NESS Non-Members
+24. Transferred Emergency General Surgery Patients Are at Increased Risk of Death  
*Manuel Castillo-Angeles, *Tarsicio Uribe-Leitz,  
*Molly Jarman, *Timothy Feeney, Ali Salim,  
Joaquim M. Havens  
Brigham and Women’s Hospital, Boston, MA

25. Outcomes of Extended Lymphadenectomy (LAD) for Gastroesophageal Carcinoma (GEC): A Large Western Series  
*Selena Li¹, *Christina L. Costantino², David W. Rattner²,  
John T. Mullen³  
¹Harvard Medical School, Boston, MA; ²Massachusetts General Hospital, Boston, MA

+26. Outcomes of Bariatric Surgery in Patients with Inflammatory Bowel Disease  
*Keyvan Heshmati, *David A. Harris, Ali Tavakkoli,  
Eric G. Sheu  
Brigham and Women’s Hospital, Boston, MA

Brief 12. Development and Implementation of a Surgical Quality Improvement Pathway for Pediatric Intussusception Patients  
*Alexander V. Chalphin, *Stephanie K. Serres,  
*Rosella Micalizzi, *Michele Dawson, *Caitlin Phinney,  
*Angeline Hrycko, *Ariel Martin-Quashie, *Michael Pepin,  
Charles J. Smithers, Shawn Rangel, Catherine Chen  
Boston Children’s Hospital, Boston, MA

*Jahnavi Kakuturu¹, *Natalie Pozzi¹, *Ann Friedrich¹,  
*Rachelle Damle², *Allison Wyman¹, Demetrius Litwin¹,  
Mitchell Cahan¹  
¹University of Massachusetts, Worcester, MA; ²Saint Louis University, St. Louis, MO

+ RPE Eligible Papers  
* NESS Non-Members
9:20 AM – 10:05 AM  34TH ANNUAL SAMUEL JASON MIXTER LECTURE  
Sponsored by the NESS Scholars Foundation  
Grand Ballroom  
Pancreatic Cancer: Current Outcomes – Is There Hope on the Horizon?  
Keith D. Lillemoe

10:05 AM – 10:10 AM  INTRODUCTION OF PRESIDENT  
Grand Ballroom  
Richard S. Swanson

10:10 AM – 11:00 AM  PRESIDENTIAL ADDRESS  
Grand Ballroom  
The Surgical Mentorship of John Homans by Harvey Cushing: The Untold Story  
Robert J. Touloukian

11:00 AM  ADJOURN
NEW ENGLAND SURGICAL SOCIETY
2018 ANNUAL MEETING

SEPTEMBER 21 – SEPTEMBER 23, 2018

WESTIN PORTLAND HARBORVIEW
PORTLAND, MAINE

FRIDAY, SEPTEMBER 21, 2018

9:00 AM – 5:00 PM  REGISTRATION
Lobby Foyer

9:00 AM – 5:00 PM  SPEAKER READY ROOM
Lobby Foyer

9:00 AM – 5:00 PM  POSTER OF DISTINCTION SET-UP
Longfellow (Lower Level)

12:00 PM – 3:00 PM  EXHIBIT HALL HOURS
Longfellow (Lower Level)
Scientific Session I

1:00 PM – 2:30 PM

Grand Ballroom (Main Level)

Co-Moderators: Robert J. Touloukian
Kari Rosenkranz

Podium papers (8-minute presentation/5-minute discussion).

Brief papers (3-minute presentation/2-minute discussion).

+1. Identifying Preoperative Predictors of Weight Loss and Weight Regain After Roux-en-Y Gastric Bypass: A Prospective Human Study

*Hassan Aliakbarian, *Keyvan Heshmati, Eric Sheu, Ali Tavakkoli
Brigham and Women’s Hospital, Boston, MA

Objective: Variability of weight loss and concern about subsequent weight regain are major concerns for patients considering bariatric surgery. Our goal is to evaluate the role of pre-operative hormones in predicting maximal total body weight Loss (%TBWL_max) and risk of Weight Regain (WR) after Roux-en-Y Gastric Bypass surgery (RYGB).

Design: Prospective cohort study.

Setting: Tertiary academic medical center.

Patients: 101 adult obese patients undergoing RYGB with 3-year follow-up data.

Interventions: Recording baseline demographics and measurement of fasting glucose, HbA1c, insulin, glucagon, ghrelin, leptin, GLP-1 and GIP levels on day of surgery.

Main Outcome Measures: %TBWL_max was calculated using lowest recorded weight in the 2-years after surgery. WR was defined as percentage of %TBWL_max that was regained during the 3 operative years.

+ RPE Eligible Papers
* NESS Non-Members
Results: The cohort had a mean age of 44.5 ± 1.3 years, initial-BMI of 45.3 ± 0.7 kg/m². There was expected variation in weight loss outcomes (Figure 1). On stepwise multivariate regression, higher fasting ghrelin (p < 0.05) and lower age (p < 0.01) were associated with greater %TBWL_max. In sub-group multivariate analysis of T2D patients, baseline glucagon levels were also associated with %TBWL_max.

![Graph showing weight change over time](image)

**Figure 1.** Average total body weight change (%) following Roux-en-Y gastric bypass in overall cohort, top 3rd (greater %TBWL) and bottom 3rd (lower %TBWL; The bars show standard errors).

Following similar analysis, lower leptin, lower %TBWL_max and lower GIP were risk factors for greater WR (p < 0.05). T2D patients on insulin pre-surgery had lower risk of WR than those on oral medication.

Conclusions: Higher fasting ghrelin levels and lower age are predictors of greater %TBWL_max after RYGB. Lower leptin, %TBWL_max and GIP are risk factors for later WR. Such markers can help develop models to better inform patients about their anticipated %TBWL_max and chances of WR.
+2. **Subtotal Parathyroidectomy Versus Total Parathyroidectomy with Autotransplantation for Secondary Hyperparathyroidism in Dialysis Patients: Short and Long-Term Outcomes**

*Polina Zmijewski¹, *Jonathan Staloff², *Madeline Wozniak¹, Peter J. Mazzaglia¹

¹Rhode Island Hospital, Providence, RI; ²Alpert School of Medicine, Providence, RI

**Objective:** Compare the immediate and long-term outcomes of subtotal parathyroidectomy (SPTX) vs. total parathyroidectomy with autotransplantation (TPTX-AT) for dialysis patients with secondary hyperparathyroidism.

**Design:** Retrospective review.

**Setting:** 719 bed tertiary care academic medical center.

**Patients:** 48 dialysis patients undergoing parathyroidectomy between 2006 and 2017.

**Interventions:** 25 had SPTX and 23 had TPTX-AT.

**Main Outcome Measures:** Post-operative day 1 calcium and PTH, hospital length of stay, duration and severity of postoperative hypocalcemia, and reoperation for recurrence, long term hypoparathyroidism.

**Results:** Pre-operative age, calcium and PTH were similar. Post-op day 1 calcium and PTH values were 8.3 ± 1 and 31.5 ± 48.9 for SPTX, and 8.1 ± 1.3 and 16.5 ± 25.3 for TPTX-AT (p > .05). Hospital length of stay was 2.2 ± 1.6 days for SPTX and 3.2 ± 3 days for TPTX-AT (p = .07). Total gland weight submitted to pathology was 1.997 ± 1.6 gm for SPTX and 4.43 ± 5.19 gm for TPTX. The required doses of calcium and calcitriol at discharge did not significantly differ. Most recent PTH > 6 months post-op was 99.8 ± 103 for SPTX and 48.1 ± 64 for TPTX-AT (p = .02), and simultaneous calcium was 8.9 ± 1.7 for SPTX and 8.5 ± 1.9 for TPTX-AT (p = .6). Re-operation for recurrence was required in 3 SPTX and no TPTX-AT. PTH values < 15 at long term follow up occurred in 12% of SPTX and 47.8% of TPTX-AT. Long term serum calcium value < 8 occurred in 8% of SPTX and 47.8% of TPTX-AT.
**Conclusions:** In dialysis patients undergoing parathyroidectomy, both SPTX and TPTX-AT are curative. The long-term control of PTH elevation and avoidance of recurrent disease is improved with TPTX-AT, but comes at the expense of longer length of stay and higher risk of long-term hypoparathyroidism requiring calcium and calcitriol supplementation.
Changing Paradigms in Locally Advanced Pancreatic Cancer: Better Defining the Role of Neoadjuvant Radiation


1Saint Mary’s Medical Center, Lewiston, ME; 2Tufts University Medical Center Maine Medical Center, Portland, ME

**Objective:** To better define the role of preoperative radiation (RAD) in addition to multi-agent neoadjuvant therapy (NAT) in the treatment of borderline-resectable pancreatic cancer.

**Design:** Retrospective cohort study using the National Cancer Database (2006–2014).

**Setting:** Commission on Cancer-accredited facilities.

**Patients:** T3 and T4 pancreatic adenocarcinoma undergoing surgery.

**Interventions:** None.

**Main Outcome Measure:** Overall survival.

**Results:** A total of 4091 patients were included; 3390 had T3 and 697 had T4 tumors. 1067 (26.1%) received RAD. Median follow-up was 22.3 months. Over the study period, there was increased use of NAT, but not RAD (Figure). Although RAD increased 30-day (2.47% vs. 0.86%, p < 0.0001), and 90-day mortality (5.24% vs. 2.03%, p = 0.0152), individuals receiving RAD had improved overall survival on univariable (30.8 vs 23.4 months, p < 0.0001), and multivariable analyses (HR 0.80 [CI 0.73–0.88] p < 0.0001). Time to definitive surgery was also increased by RAD (203.8 vs 70.51 days, p < 0.0001). Receiving RAD was associated with increased pathologic downstaging in T4 (89.1% vs. 72.5%) (OR 1.92 [CI 1.15–3.20] p = 0.013) and T3 tumors (32.8% vs. 8.4%)(OR 4.84 [CI 3.84–6.08] p < 0.0001); complete pathologic response (5.5% vs. 0.8%) (OR 6.09 [CI 3.70–10.03] p < 0.0001), and increased R0 resection rates (85.8% vs. 72.1%) (OR 2.24 [CI 1.84–2.73] p < 0.0001).

* NESS Non-Members
Conclusions: The use of neoadjuvant therapy is increasing for the treatment of locally advanced pancreatic cancer. The addition of radiation to NAT, is associated with improved antineoplastic effectiveness (downstaging and complete pathologic response), surgical resection (R0 rates), and overall survival for this patient population.
4. Improving Patient Centered Outcomes with Robotic Hepatic Resection for Liver Tumors in a Tertiary Academic Transplant Center


Lahey Clinic, Burlington, MA

**Objective:** Robotic techniques can improve patient centered metrics in hepatic resection.

**Design:** Retrospective cohort study comparing open versus robotic hepatic resection.

**Setting:** Tertiary care academic transplant center.

**Patients:** Analysis of data from consecutive robotic liver resections (RLR) since the initiation of our HPB robotic program in 2017 were analyzed and compared to consecutive open resections (OLR) from 2016. Exclusion criteria included combined liver and bowel resection, liver resection requiring biliary reconstruction, hepatectomy for living donation, and cyst fenestration. Twenty-seven liver resections were performed in 2016 (89% open, 11% laparoscopic, 0% robotic) and 34 in 2017 (53% open, 0% laparoscopic, 47% robotic). A total of 24 OLR were compared to 16 RLR. Mean age and BMI were similar between the two groups.

**Intervention:** Robotic liver resection.

**Main Outcome Measures:** Patient-centric metrics including narcotic usage, length of stay, procedural time, and complications were compared between the two groups.

**Results:** Robotic patients had a higher proportion of Childs A cirrhosis (RL 50%, OL 8.3%; p = 0.003). Resection rates for malignancy were similar (RL 81%, OL 83%). Procedural time was significantly longer in robotic cases (246 vs. 153 minutes; p = 0.003). Duration of postoperative narcotic requirement (epidural and intravenous) was shorter in RL patients (40 vs. 82 hours; p = 0.012). Correspondingly, length of stay in RL patients was shorter (4.5 days) compared to OL patients (7.3 days). Clavien III-V complications (16.7% OL vs. 6.2% RL; p = 0.212) & readmission rates were similar.

* NESS Non-Members
Conclusion: Utilization of robotic techniques for liver resection offers patients a significant benefit in the postoperative period with diminished narcotic requirements and shortened length of stay without compromising complication and readmission rates.
5. Surgical Repair of Enterotomies Using Three-Dimensional Printed Biopatches in a Rat Model

*Renee M. Maina¹, *Taras Lysyy¹, *Peter Geibel¹,
*Maria J. Barahona¹, *Michele Finotti¹², David Mulligan¹,
*John P. Geibel¹

¹Yale School of Medicine, New Haven, CT; ²University of Padua, Transplant and Hepatobiliary Surgery, Padua, Italy

Objective: In patients with loss of functional intestine due to ischemic or traumatic injury, intestinal transplant is an effective treatment option. However, it is rarely available as a therapeutic option because the need for allografts outweighs their availability. We demonstrate the feasibility of three-dimensional (3D) bioprinted patches as conduits for repair of intestinal injuries.

Design: Patches were printed on an Organovo MMX 3D bioprinter using rat vascular smooth muscle and fibroblast cells encapsulated in a crosslinked hyaluronic acid and gelatin matrix. The prints were resected along the transverse axis to allow access to the apical surface, and sized to form 7–10 mm patches. 4–6 mm enterotomies were made an inch away from the ileocecal junction in rats, the apical side of the biopatches was placed over the enterotomies, and cyanoacrylate surgical adhesive was used to seal the patches in place.

Setting: This study was conducted in a BSL-2 laboratory and appropriate animal facilities.

Patients: Male Wistar rats.

Interventions: Small intestine enterotomy patch repair.

Main Outcome Measures: The animals were monitored daily and sacrificed at post-op day 7, 14, 21, and 30. Blinded histopathological analysis was conducted to compare the patch segments to native intestine.

Results: The animals had normal activity, weight gain, and stool output. Histopathological examination of the explanted segments at 7, 14, and 21 days showed progressive villi and crypt formation. At 30 days, the endothelium had grown back fully and the patch was indistinguishable from native intestine.

Conclusions: Bioprinted intestinal patches can successfully be used to seal enterotomies in vivo and fully integrate into the native intestine. 3D printed biopatches are thus a novel option for the surgical repair of intestinal injuries.

* NESS Non-Members
Brief 1. Improved Utilization of Kidney Allografts from Deceased Donor with High Kidney Donor Profile Index in Select Candidates


Massachusetts General Hospital, Boston, MA

Objective(s): Increase consent to, and transplantation of high Kidney Donor Profile Index (KDPI >85%) allografts, and assess outcomes.

Design: Interventional, before-after trial. 2014 deceased donor kidney transplant (DDKT) allocation considered KDPI, a comparative percentile signifying donor factors affecting allograft function. KDPI >85% kidneys provide 5.6 years average function but are available earlier, and informed consent is mandatory to receive them.

Setting: Tertiary referral hospital/transplant center.

Patients: Waitlist candidate selection: age >65, Estimated Post-Transplant Survival (EPTS) in the lowest quintile, or significant co-morbidities. 236 candidates without KDPI >85% consent fit our criteria; 193 by age, 124 by EPTS >80%. 75 consented following intervention.

Interventions: 1) Revised “KDPI >85% education/consent”, 2) Assessed KDPI >85% informed consent and transplant rate, and 3) Patients re-education.

Main Outcome Measure(s): UNOS benchmark report KDPI >85% consent and transplant rate, and KDPI >85% allografts transplanted and their outcomes.

Results: Comparing January 2017 and 2018 UNOS benchmark reports; KDPI > 85% consent and transplant rate increased >2.5 times (Table). We transplanted 27 KDPI >85% kidneys (1/1/15–12/31/17). Two grafts failed. 52% had delayed graft function, 1-year graft survival for 2015–2016 was 86%, and 2-year graft survival for 2015 of 86%. Median KDPI was 91% and median 1-year creatinine was 1.33 mg/dL (2015) and 1.38 mg/dL (2016).

* NESS Non-Members
### Acceptance and Transplant Rate Comparison

<table>
<thead>
<tr>
<th></th>
<th>Hospital</th>
<th>Region</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance—Jan 2017</td>
<td>8.74%</td>
<td>47.71%</td>
<td>40.67%</td>
</tr>
<tr>
<td>Acceptance—Jan 2018</td>
<td>21.91%</td>
<td>49.01%</td>
<td>40.51%</td>
</tr>
<tr>
<td>Transplant—Jan 2017</td>
<td>5.48%</td>
<td>6.03%</td>
<td>7.90%</td>
</tr>
<tr>
<td>Transplant—Jan 2018</td>
<td>15.25%</td>
<td>7.65%</td>
<td>7.20%</td>
</tr>
</tbody>
</table>

**Conclusion:** KDPI >85% utilization, although risks shorter longevity, is appropriate for select candidates awaiting transplantation. An educational quality initiative doubled the consent and transplantation rate of these organs with excellent graft survival. Selecting donor and recipient combinations, maximizes the utilization benefit of these kidneys for specific candidates. Further analysis is needed to assess long term function.
Brief 2. Impact of Autologous Blood Transfusion on Survival and Recurrence for Patients Undergoing Hepatectomy for Colorectal Cancer Liver Metastases

*Ravinder Kang\textsuperscript{1}, *Bronte E. Seath\textsuperscript{2}, *Viola Huang\textsuperscript{1}, Richard J. Barth Jr.\textsuperscript{1}

\textsuperscript{1}Dartmouth Hitchcock Medical Center, Lebanon, NH; \textsuperscript{2}Geisel School of Medicine at Dartmouth, Hanover, NH

**Objective:** Autologous transfusion has long been considered unsafe in major oncologic surgery due to a theoretic risk of spreading metastatic disease, however, little data supports this assumption. Our objective was to challenge this assumption by evaluating the risk of recurrence and overall survival in patients receiving autologous transfusions during liver resection for colorectal metastases.

**Design:** Retrospective cohort study.

**Setting:** Academic medical center.

**Patients:** 140 adults undergoing liver resections for colorectal metastases.

**Interventions:** N/A.

**Main Outcome Measure(s):** Overall survival (OS) and recurrence-free survival (RFS) at 10 years using Kaplan-Meier survival curves and adjusted Hazard Ratio for OS and RFS.

**Results:** 67 patients received an autologous transfusion and 73 received no transfusion. Those receiving a transfusion had greater blood loss, larger surgical resections, and longer procedures. There was no difference in age, sex, proportion colon vs rectal cancer or Fong clinical risk score. Median follow-up was 44 months. The OS was similar among those who received and didn’t receive a transfusion (p = 0.85, Figure 1). Even after adjusting for age, sex, Fong score, extent of resection and blood loss, no difference in OS was noted (hazard ratio (autologous vs no-transfusion) 0.60 (95% confidence interval (CI): 0.32–1.12; p = 0.11). RFS was also similar in the two groups (p = 0.22). The adjusted hazard ratio for RFS was 1.01 (95% CI: 0.58–1.77; P = 0.96).

\* NESS Non-Members
Conclusions: Autologous blood transfusion is not associated with increased recurrence risk or higher mortality rate. Surgeons performing liver resections for patients with colorectal cancer metastases can safely transfuse filtered autologous blood.
Objective: Within the growing geriatric population, there is an increasing need for emergency operations. Optimizing outcomes for this demographic may require a structured system of surgical care. To study this, we sought to answer two questions. First, to what degree does hospital emergency operative volume impact mortality for geriatric patients undergoing common emergency general surgery (EGS) operations? Second, at what procedure-specific hospital volume-thresholds will geriatric patients undergoing an emergency operation realize the average mortality risk?

Design: Retrospective cohort study; employed a novel use of ecological analysis with beta regression.

Setting: Acute care hospitals.

Patients: Patients (≥65 years) who underwent one of ten EGS operations identified from the California State Inpatient Database (2010–2011).

Main Outcome Measures: In-hospital risk-adjusted mortality. Hospital operative volume benchmarks.

Results: 41,860 surgeries were evaluated at 299 hospitals (Table for all data). For each operation, beta regression models confirmed that mortality was significantly reduced as hospital emergency operative volume increased (p < 0.001 for each). Absolute differences in mortality between the highest- and lowest-volume hospitals varied substantially. Procedure-specific hospital volume-thresholds which optimize survival varied widely, as did the percentage of hospitals meeting these benchmarks.

Conclusions: Across the spectrum of EGS, survival rates for geriatric patients were significantly improved when emergency operations were performed at hospitals with higher emergency geriatric operative volumes. Consistent with all Quality Programs of the American College of Surgeons, hospital operative volume appears to be an important metric of surgical quality for older patients undergoing emergency operations. Geriatric patients may benefit from a formal system of surgical care.

* NESS Non-Members
<table>
<thead>
<tr>
<th>Operation</th>
<th>Number of Hospitals</th>
<th>Number of Operations</th>
<th>Beta Regression Estimate</th>
<th>p-value</th>
<th>Mortality Rate, Lowest Volume Hospitals</th>
<th>Mortality Rate, Highest Volume Hospitals</th>
<th>Average Mortality Rate</th>
<th>Hospital Volume to Optimize Survival*</th>
<th>% Hospitals Achieving Optimal Volume</th>
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</thead>
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<tr>
<td>Appendectomy</td>
<td>267</td>
<td>4857</td>
<td>0.39</td>
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<td>22.0%</td>
<td>0.7%</td>
<td>5.4%</td>
<td>11</td>
<td>65%</td>
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<td>Cholecystectomy</td>
<td>298</td>
<td>17427</td>
<td>0.53</td>
<td>&lt;0.001</td>
<td>18.2%</td>
<td>0.7%</td>
<td>3.9%</td>
<td>28</td>
<td>70%</td>
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<tr>
<td>Colectomy</td>
<td>274</td>
<td>6727</td>
<td>0.86</td>
<td>&lt;0.001</td>
<td>36.4%</td>
<td>11.5%</td>
<td>17.9%</td>
<td>38</td>
<td>24%</td>
</tr>
<tr>
<td>Inguinal Hernia Repair</td>
<td>222</td>
<td>1978</td>
<td>0.45</td>
<td>&lt;0.001</td>
<td>23.3%</td>
<td>2.9%</td>
<td>9.8%</td>
<td>8</td>
<td>52%</td>
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<tr>
<td>Lysis of Adhesion</td>
<td>252</td>
<td>3910</td>
<td>0.61</td>
<td>&lt;0.001</td>
<td>31.4%</td>
<td>4.1%</td>
<td>11.5%</td>
<td>12</td>
<td>51%</td>
</tr>
<tr>
<td>NSTI Excision</td>
<td>131</td>
<td>666</td>
<td>0.53</td>
<td>&lt;0.001</td>
<td>37.0%</td>
<td>10.9%</td>
<td>20.7%</td>
<td>7</td>
<td>23%</td>
</tr>
<tr>
<td>Repair Perforated Viscus</td>
<td>156</td>
<td>871</td>
<td>0.64</td>
<td>&lt;0.001</td>
<td>40.8%</td>
<td>14.4%</td>
<td>25.5%</td>
<td>8</td>
<td>19%</td>
</tr>
<tr>
<td>Small Bowel Resection</td>
<td>256</td>
<td>4008</td>
<td>0.74</td>
<td>&lt;0.001</td>
<td>37.6%</td>
<td>7.2%</td>
<td>17.3%</td>
<td>19</td>
<td>32%</td>
</tr>
<tr>
<td>Umbilical Hernia Repair</td>
<td>62</td>
<td>268</td>
<td>0.40</td>
<td>&lt;0.001</td>
<td>24.3%</td>
<td>7.3%</td>
<td>13.5%</td>
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<td>36%</td>
</tr>
<tr>
<td>Ventral Hernia Repair</td>
<td>170</td>
<td>1148</td>
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<td>19.2%</td>
<td>4.0%</td>
<td>11.2%</td>
<td>6</td>
<td>51%</td>
</tr>
</tbody>
</table>

Abbreviations: NSTI, Necrotizing Soft Tissue Infection

*Hospital operative volume that optimizes probability of survival for a given operation, defined as the 2-year volume above which 95% of hospitals have better than average risk-adjusted mortality.
Brief 4. Training Surgeons with Organs Unfit to Transplant

*Adam Petchers¹, *Sheila Russell¹, *Fuyuki Hirashima², Mitchell Norotsky², Carlos Marroquin²

¹University of Vermont, Burlington, VT; ²University of Vermont Medical Center, Burlington, VT

**Objective:** Our goal is to create a novel surgical simulation model using donor organs rejected for transplantation. This will allow training programs to improve surgical resident comfort and performance in complex open surgeries.

**Design:** Proof of concept study demonstrating feasibility, reproducibility and use of a novel surgical simulation model.

**Setting:** The University of Vermont General Surgery Residency Training Program.

**Participants:** Recovered organs deemed unfit for transplant are donated by local Organ Procurement Organizations. Surgical residents and attending surgeons participate in the simulation.

**Intervention:** Un-transplantable allografts are sewn in-line with roller pumps to major vessels, creating a closed circuit. They are perfused with a pigmented blood substitute, and surgical procedures are performed. Simulations are also performed on fixed and fresh/frozen cadavers under similar operative conditions for comparison.

**Main Outcome Measures:** We assessed the visual and haptic fidelity and application of surgical exercises and technical skills.

**Results:** We found the simulation to have realistic anatomic landmarks, appearance, texture, and vascular flow. The simulation of blood pressure, tissue perfusion, and bleeding during injury provides an ideal environment for development of technical skills with no risk to living patients. This was superior to either cadaver model tested. Residents performed tissue and vascular dissection, mobilization of structures, vessel repair and ligation, surgical injury repair, and vascular anastomosis using standard open surgical techniques with appropriate tissue response.

**Conclusion:** Utilizing organs unfit for transplantation allows near-realistic operative experience and an optimal paradigm to prepare trainees for challenging operative cases. This proposed simulation optimizes surgical training while preserving the public trust that surgical trainees are prepared in advance of operating on living patients.

* NESS Non-Members
Impact of Race, Insurance Status, and Primary Language on Patients with Pancreatic Adenocarcinoma at an Urban, Academic, Safety-Net Medical Center


Boston University, Boston, MA

Objective: To examine the impact of demographics and socioeconomic status (SES) on pancreatic adenocarcinoma (PA) patients in a unique setting.

Design: Demographics, tumor characteristics, treatment, and survival were analyzed for patients diagnosed with PA (1/2006–12/2017). Chi square and Kaplan Meier survival analysis were employed.

Setting: Patients were diagnosed and treated for PA at a single, high minority, urban, safety-net hospital.

Patients: We identified 240 patients, of whom 48% were minority race, 22% were non-English speaking and 84.5% had Medicaid/Medicare insurance.

Interventions: Patients were treated using chemotherapy, radiation therapy, curative surgery, and palliative therapy or surgery.

Main Outcome Measures: Overall survival, stage at presentation, time-to-intervention were examined.

Results: More black patients than white patients were enrolled in Medicaid (61% vs 31%; P < .01). Half of patients (47%) were Stage IV, of whom 15% declined treatment. One-third (29.3%) underwent surgical resection (Stage I: 15%, Stage II: 80%) while 21.8% with early stage tumors were medically unfit or declined surgery. Neoadjuvant therapy was given to 27% of patients. Minority patients presented at similar stage as white patients. More privately insured patients (43%) presented at early stage than did Medicaid (28%) or Medicare (34%) patients, though not statistically significant (p = .342). Insurance status (Medicare, Medicaid or Private) played no role in rates of resection (31%/23.7%/35%; P = .86) or adjuvant therapy (89%/72.3%/100%; P = .26). Neither stage-specific survival nor time-to-intervention differed based on race, ethnicity, insurance or language.

* NESS Non-Members
Conclusions: We found no differences in the timing and delivery of care or survival, even with a high volume of racial minority and non-English speaking patients. Further evaluation of other safety-net hospitals may improve the overall care of disadvantaged patients.

2:30 PM – 3:00 PM

COFFEE BREAK: VISIT EXHIBITS & POSTERS OF DISTINCTION/E-POSTERS
Longfellow (Lower Level)
Scientific Session II
3:00 PM – 5:00 PM
Grand Ballroom (Main Level)
Co-Moderators: Antonia E. Stephen
Peter S. Yoo

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

+6. Practice Patterns and Guideline Non-Adherence in Surgical Management of Appendiceal Carcinoid Tumors

*Danielle R. Heller*, Raymond A. Jean, *Vadim Kurbatov,
Yale University School of Medicine, New Haven, CT

**Objectives:** Surgical management of appendiceal carcinoid tumors is heavily debated, despite NCCN guidelines recommending aggressive resection of tumors >2 cm. We sought to investigate national practice patterns and the factors associated with guideline non-adherence.

**Design:** Retrospective analysis of national database, queried for cases of appendiceal carcinoids from 2004–2015 treated with either appendectomy or hemicolecctiony. Multivariable logistic regression identified significant associations with hemicolecctiony versus appendectomy among patients stratified by tumor size ≤2 cm and >2 cm. Overall survival (OS) was compared using Kaplan-Meier curves.

**Setting:** NCDB, representing >70% incident malignancies nationwide.

**Interventions:** Appendectomy vs. hemicolecctiony.

**Outcome Measures:** Frequency of appendectomies for tumors >2 cm; frequency of hemicolecctionies for tumors ≤2 cm; predictive factors for treatment deviation.

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* RPE Eligible Papers
* NESS Non-Members
Results: Of 3,198 cases of appendiceal carcinoids, 1,893 appendectomies and 1,305 hemicolec- 
tomies were performed. In conflict with NCCN guidelines, 33.7% of tumors >2 cm were treated with definitive 
appendectomy, while 32.4% of tumors ≤2 cm were treated with hemicol- 
tomy. On regression analysis, no predictors for resection type were 
found for tumors >2 cm; however, for tumors ≤2 cm, hemicol- 
tomy was associated with age >60 years (OR 1.7, 95% CI 1.3–2.2), diagnosis 
before 2011 (OR 2.2, 95% CI 1.7–2.8), and history of other malignancies 
(OR 2.0, 95% CI 1.5–2.5). [Table] There was no significant difference in 
OS between appendectomy and hemicolotomy for both small and large 
tumors (log-rank p = 0.06).

<table>
<thead>
<tr>
<th></th>
<th>Hemicolotomy: Tumors ≤2 cm</th>
<th>Appendectomy: Tumors &gt;2 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
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<td>11–20</td>
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</tr>
<tr>
<td>21–30</td>
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<td>31–40</td>
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<td>Medicaid/Medicare/Government</td>
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<td>Income Quartile ($)</td>
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<td>63,000+</td>
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continued
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<tr>
<th></th>
<th>Hemicolecotomy: Tumors ≤2 cm</th>
<th>Appendectomy: Tumors &gt;2 cm</th>
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<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
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<tr>
<td>No High School</td>
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<td>7.0–12.9</td>
<td>0.7</td>
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<td>4+</td>
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Conclusions: Despite well-known size-based treatment guidelines for appendiceal carcinoids, one-third of surgeons in the U.S. still perform appendectomy on large tumors and hemicolecctomy on small tumors. Guideline non-adherence, however, does not appear to impact survival. Reasons for these practice patterns should be explored, and the guidelines revisited.
Clinical Outcomes Following Identification of Tip Appendicitis on Ultrasonography and CT Scan


Baystate Medical Center, Springfield, MA

Objective: To determine whether ultrasound or CT findings of tip appendicitis truly correlate with a pathologic diagnosis of appendicitis.

Design: Retrospective cohort study.

Setting: Academic medical center, major referral hospital.

Patients: Our radiology database was mined for reports with a diagnosis of tip appendicitis between January 2013 and June 2017. The criteria for diagnosis were enlarged tip $\geq 6$ mm with remainder of appendix of normal caliber, and findings including free fluid, wall thickening, hyperemic vascularity, appendicoliths and non-compressibility. Exclusion criteria included obvious signs of complicated appendicitis on imaging such as phlegmon or abscess. 102 patients met inclusion criteria; 56 of whom were pediatric patients ($<18$ years old).

Main Outcome Measures: To determine what proportion of patients had appendiceal disease that was appropriate to manage with surgery. Patients managed nonoperatively (without antibiotics) and those with negative pathology were considered to not have appendicitis. Secondary measures included demographic and clinical data, and clinical outcomes. Fisher’s exact test (alpha $<0.2$) was used to evaluate associations between certain factors and a diagnosis of appendicitis.

Results: 73 (71.6%) patients with tip appendicitis on ultrasonography or CT ultimately did not have appendicitis. 46 patients underwent appendectomy; 29 (63%) of whom had pathologic evidence of appendicitis. 4 patients managed nonoperatively required readmission, but not secondary to a missed diagnosis of appendicitis. Subjective RLQ pain (p = 0.023), presence of RLQ tenderness to palpation (p = 0.012), and elevated CRP (p = 0.013) were associated with a pathologic diagnosis of appendicitis.

Conclusions: Ultrasound and CT findings of tip appendicitis should be considered an equivocal finding, and not solely diagnostic of appendicitis. Clinical judgment can dictate appropriate management since typical clinical signs and symptoms of appendicitis correlated with the diagnosis.

+ RPE Eligible Papers
* NESS Non-Members
8. **An Interdisciplinary Care Pathway for Frail Geriatric Trauma Patients**

*Elizabeth A. Bryant*, *Sami Tulebaev*, *Manuel Castillo-Angeles*, *Steven S. Senglaub*, *Lynne O’Mara*, *Meghan McDonald*, *Ali Salim*, *Zara Cooper

*B Brigham and Women’s Hospital, Boston, MA*

**Objective:** Frailty is a well-established measure of poor outcomes in geriatric trauma patients. There is little evidence that frailty interventions improve outcomes in this population. Our goal was to determine if an interdisciplinary care pathway for frail trauma patients reduces complications and 30-day readmission.

**Design:** Retrospective cohort study.

**Setting:** Academic, urban level I trauma center.

**Patients:** Trauma patients ≥65 years who screened positive for frailty and admitted to the trauma service between 2015–2017. Patients transferred to other services or died within the first 24 hours were excluded.

**Interventions:** An interdisciplinary protocol for frail trauma patients including early ambulation, bowel/pain regimens, non-pharmacological delirium prevention, nutrition/physical therapy consults, and geriatrics assessments was implemented in 2016.

**Main Outcome Measures:** Delirium, any complication, and 30-day readmission were compared one year before (pre-cohort) and one year after (post-cohort) protocol implementation.

**Results:** There were 127 and 148 frail patients in the pre- and post-cohorts, respectively. There were no significant demographic differences between the two groups. For the entire cohort, mean age was 83.55 (SD 7.16), 60.50% were female, and median ISS was 10 (IQR 8–14). While there was no significant difference in complications (28.4% vs. 30.4%, p = 0.79), there was a trend towards decreasing delirium incidence (21.3% to 13.5%, p = 0.08). 30-day readmission significantly decreased 9.5% to 2.7% (p = 0.02). After adjusting for patient characteristics, post-cohort patients had lower delirium (Odds Ratio [OR] 0.49, 95% CI 0.25–0.95, p = 0.037) and 30-day readmission rates (OR 0.25, 95% CI 0.07–0.83, p = 0.025), compared with pre-cohort patients.

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* NESS Non-Members
**Conclusions:** An interdisciplinary care protocol for frail geriatric trauma patients significantly decreases their delirium and 30-day readmission risk. Implementing pathways standardizing care for these vulnerable patients could improve their outcomes following trauma.
Atrial Fibrillation After Anatomic Lung Resection: Amiodarone Prophylaxis and Risk Stratification

*Eleah Porter¹, *Kayla Fay¹, *Emlyn Diakow²,
*Timothy Millington¹, *David Finley¹, *Joseph Phillips¹
¹Dartmouth-Hitchcock Medical Center, Lebanon, NH;
²Geisel School of Medicine, Hanover, NH

Objective: Post-operative atrial fibrillation (POAF) is a known complication that occurs in ~16% after anatomic lung resection. Currently, no formal recommendations exist for prophylaxis. In this study, we identify trends in outcomes and preoperative risk factors at a single center that implemented a protocol of amiodarone prophylaxis.

Design: Retrospective chart review.

Setting: Single tertiary referral center.

Patients: All patients who underwent anatomic lung resection from January 2015 through April 2017.

Interventions: Those ≥65 years of age, or at the discretion of the Attending Surgeon, were selected to receive a post-operative amiodarone bolus 300 mg IV over 1 hour followed by 400 mg PO TID × 3 days.

Main Outcome Measures: Post-operative atrial fibrillation within 30 days.

Results: A total of 227 patients underwent anatomic lung resection and 27 (11.9%) experienced POAF. Over 80% were ≥65 (n = 22) and of those, 86% had received amiodarone. Of the 5 patients <65 who developed POAF, none received amiodarone. Compared to published reports of POAF, our number needed to treat was 25. In our study, those who developed POAF were more likely to be older (71.1 vs 65.0, p = 0.001), have a history of Afib (p = 0.019), have undergone a lower lobe lung resection (p = 0.002), and/or have had an open procedure (p = 0.037). POAF significantly increased the post-operative length of stay (6.8 vs 4.4 days, p = 0.004).

Conclusions: Post-operative atrial fibrillation continues to be a challenging problem after anatomic lung resection. Our data suggest that POAF is more common in older patients, those with a history of a-fib, patients undergoing a lower lobe resection, and those having an open procedure. Our study also reveals that Amiodarone prophylaxis can result in a risk reduction of 4%.

+ RPE Eligible Papers
* NESS Non-Members
Early Postoperative Death in Extreme-Risk Patients: A Perspective on Surgical Futility

*Alexander Chiu, Raymond A. Jean, Kevin Y. Pei

Yale School of Medicine, New Haven, CT

Objective: Surgical futility is poorly defined. However, there are patients with extremely high preoperative risk who receive surgery and die in the immediate postoperative period, suggesting futile care. To explore the concept of surgical futility, we examined the incidence and factors associated with high-risk patients undergoing emergency general surgery (EGS) with early death.

Design: Retrospective study using the American College of Surgeons National Surgical Quality Improvement Project (NSQIP).


Patients:Patients undergoing emergent colectomy, small bowel resection, control of bleeding ulcer, lysis of adhesion, and exploratory laparotomy. Extreme-risk patients were defined as an estimated mortality >75% using the NSQIP mortality-risk calculator.

Interventions: N/A.

Main Outcome Measures: Trends, mortality rate, and timing of death of extreme-risk patients were evaluated. Clinical factors associated with operations on extreme-risk patient who died within 48 hours were identified utilizing logistic regression.

Results: Of 94,227 EGS patients, 1.9% had a preoperative mortality risk >75% (extreme-risk). Over time, the percent of operative EGS patients who were extreme-risk has declined (2.2% 2007–2009 vs. 1.6% 2013–2015, p < .01). Among extreme-risk patients, 30-day mortality was 71.2%, with 31.6% of all extreme-risk patients dying within 48 hours. Patients who were >80 years (OR 6.2 vs. 40–65 95% CI 4.65–8.7), septic (OR 3.4 95% CI 2.4–4.6), ventilator dependent (OR 6.1 95% CI 4.6–8.0), or with ascites (OR 3.3 95% CI 2.6–4.2) had the highest odds of being extreme-risk and dying within 48 hours.

Conclusions: A significant number of EGS operations were on extreme-risk patients who suffered early death, representing essentially futile care. Future studies aimed at factors influencing these surgical decisions, as well as their implications on cost-effectiveness, are needed.
+11. Frailty Costs: The Economic Impact of Frailty in the Elective Surgical Patient

*Justin Wilkes, *Jessica Evans, *B. Stephen Prato,
*Steven Hess, Dougald MacGillivray, Timothy Fitzgerald

Maine Medical Center, Portland, ME

Objective: Frailty is associated with increased morbidity, mortality, and failure-to-rescue. There is little understanding of the economic impact.

Design: A modified version of the Risk Analysis Index was utilized to classify a prospective database of elective surgery patients as not frail (RAI = 0), somewhat frail (RAI = 1–10), or significantly frail (RAI >11).

Setting: Academic medical center.


Interventions: None.

Main Outcome Measure: Cost.

Figure: Total Cost of frail patients (RAI >11) compared to non-frail patients (odds ratio on logarithmic scale, * = p < 0.05).
Results: Frail patients were more likely older (50 vs 65, p < 0.001) and inpatient (19% vs 36%, p < 0.001). On univariate analysis, frail patients were more likely to die (0% vs 0.4%, p < 0.001), have increased LOS (0.8 vs 2.1 days, p < 0.001), higher total cost ($6,934 vs $13,319), and lower net hospital income ($5,447 vs $3,129, p < 0.001). On multivariate analysis, frailty is independently associated with direct cost (OR 2.2, p < 0.001), indirect cost (OR 1.9, < 0.001), total cost (OR 2.2, p < 0.001), and net income (OR 0.8, p < 0.001). In analysis by service line and inpatient versus outpatient status, frailty continues to be associated with increased direct cost, indirect cost, total cost, and decreased hospital income (Figure).

Conclusion: Frailty, independent of age, has a detrimental financial impact on cost and hospital income in the elective surgery patient.
12. **53% Decline in Rhode Island Invasive Breast Cancer Mortality Since 1987: Mammography Prevents Mortality**

**Blake Cady¹, *John P. Fulton²**

¹Harvard Medical School, Brookline, MA; ²Rhode Island Cancer Registry, Providence, RI

**Objective:** In invasive breast cancer, understanding relationship between improved size, grade, and lymph node metastases from extensive mammographic screening to simplified surgery and decreased mortality.

**Design:** Rhode Island (RI) cancer registry (RICR) data utilized regarding mammography rates, invasive breast cancer size, lymph node metastases, grade, primary surgical procedures, and mortality between 1987 and 2015.

**Setting:** RICR data on female invasive breast cancer at diagnosis in RI with one of the highest screening rates in the U.S.

**Patients:** All RI women diagnosed with invasive breast cancer over 28 years.

**Interventions:** None.

**Main Outcome Measures:** Mortality decline and modified initial surgery related to decreases in size, grade, and node metastases, resulting from high screening rates.

**Results:** Over 28 years, statistically significant improvements occurred at breast cancer diagnosis: mean and median size decreased from 23.9 mm to 19.6 mm, and 20 mm to 15 mm, respectively. Grade 3 cancers decreased, 57% to 28%, while grades 2 and 1 increased, 26% to 50%, and 12% to 22% respectively. Patients with axillary lymph node metastases decreased, from 37% to 26%; patients with >3 node metastases decreased, 17% to 4%. 56% of patients with node metastases had only one positive node by 2014. Breast conservation increased, from 28% to 70%, median number of lymph nodes removed by axillary surgery decreased from 14 to 3, both changes associated with greatly reduced surgical morbidity. Mortality dropped 53%, the largest decline of any state.

**Conclusions:** Earlier presentation at diagnosis by mammographic screening, not systemic therapy, accounts for most of the 53% RI mortality decline from invasive breast cancer between 1987 and 2015.

* NESS Non-Members
+13. Intimate Partner Violence Screening Training for Surgical Residents
*Ishna Sharma1, Christine Finck2
1University of Connecticut, Farmington, CT; 2Connecticut Children’s Medical Center, Hartford, CT

Objective(s): Intimate partner violence (IPV) is a significant health issue, affecting 25% of U.S. women. IPV costs healthcare $5.8 billion/year, with increased medical care and productivity loss. IPV is especially difficult to screen, as it is not more prevalent in any particular demographic group. Studies show 95% of women prefer disclosing IPV to healthcare providers, compared to friends or family. Formal screening training for providers could increase use of effective IPV screening.

Design: N/A.

Intervention Study: Before-After Trial: Pre-Post Survey.

Setting: General surgery residents at one academic center.

Patients: Volunteer sample of residents who attended the training anonymously participated in pre- and post-training surveys.

Intervention(s): 1 hour IPV screening training for residents was designed in conjunction with the state anti-IPV coalition. Residents attended this during their weekly residency didactics conference.

Main Outcome Measure(s): Pre- and post-training questionnaires included 3 demographic questions and 4 questions to assess prior IPV screening or training experience. 7 questions used a scale of 1 to 5 to assess comfort with IPV screening topics. SPSS 16.0 software provided descriptive statistical analysis.

Results: 19 residents participated, with mean age 30 years and 74% PGY1–2. 42% had no prior training. 36.8% had no prior screening experience. 89.4% stated they would use IPV screening during residency, and 84.2% after residency. The post-survey scaled question portion demonstrated a mean of 1.01 improvement across all questions, with highest improvement in ability to refer a positively screened patient to local IPV resources.

Conclusions: IPV is a prevalent health concern, and healthcare providers have the potential to be effective screeners. Formal training for surgical residents can be effective in increasing their understanding of IPV and comfort level with screening.

+ RPE Eligible Papers
* NESS Non-Members
*Ryland S. Stucke*¹, Meredith J. Sorensen¹, *Alexandra Rosser*²,  
*Sarah Sullivan*²  
¹Dartmouth-Hitchcock Medical Center, Lebanon, NH;  
²University of Wisconsin – Madison, Madison, WI

**Objective:** The American Board of Surgery has proposed a residency redesign, which relies on entrustable professional activities (EPAs). Entrustable professional activities are holistic descriptions of behaviors and performance standards to be met by the end of residency. Accurate and meaningful tools for evaluation and feedback of EPAs are lacking. No framework or tool exists to evaluate surgical consultation, one of the five proposed initial EPAs.

**Design:** Qualitative methods (cognitive task analysis, semi-structured interviews, focus groups) with key teaching faculty. Results were systematically analyzed. Evaluation tool was created, piloted, and refined.

**Setting:** Two academic centers in distinct geographic regions (New England, Mid-West).

**Participants:** 19 key teaching faculty participated in qualitative interviews. Additional faculty and resident participation in focus groups and pilot testing.

**Main Outcome Measure:** Critical procedural steps and performance traits of a consult were identified. These were combined with recently published standards from the American Board of Surgery’s (ABS) EPA working group to crate the evaluation tool.

**Interventions:** N/A.

**Results:** Qualitative interviews yielded discreet consult procedural steps and performance traits with good thematic saturation and inter-institutional consistency. Results were merged with newly published recommendation from the ABS EPA working group. A competence scale was developed based on clinical narratives. The scale ranges from critically deficient (level 0) to competent (level 4). The tool also captures a synopsis of feedback given to the resident and rationale for why a particular performance level was chosen. Pilot testing demonstrated good feasibility and acceptability of the tool.

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* NESS Non-Members
**Conclusions:** Accurate evaluation tools are needed to make appropriate entrustment decisions for surgical trainees. This evidence-based tool is the first of its kind to evaluate a surgical consult performed by residents.
Brief 7.  A Comparison of Partial and Total Colectomy in the Surgical Management of Clostridium Difficile Colitis

*David Peprah, *Alexander S. Chiu, Raymond A. Jean, Kevin Y. Pei

Yale School of Medicine, New Haven, CT

**Objective:** Surgical management can be indicated for severe, complicated Clostridium Difficile Associated Disease (CDAD). Practice guidelines suggest that sub-total colectomy should be the mainstay of surgical treatment, given the widespread involvement of colonic structures. However, small studies have suggested partial colectomy may provide equivalent outcomes. We compared the outcomes of partial and sub-total colectomy for CDAD in a nationwide database.

**Design:** Retrospective study using the American College of Surgeons National Surgical Quality Improvement Project (NSQIP).

**Setting:** NSQIP hospitals between 2007–2015.

**Patients:** Patients with a primary diagnosis of Clostridium Difficile colitis who underwent an emergent sub-total or partial colectomy.

**Interventions:** None.

**Main Outcome Measures:** Postoperative mortality rate, complication rate, and length of stay.

**Results:** There were 733 colectomies for CDAD identified, of which 151 (20.6%) were partial colectomies. There was no significant difference in patient demographics or clinical status of those receiving partial or sub-total colectomies, and no difference in days from admission to surgery (4.6 days for partial vs. 5.0 for sub-total, p = 0.70). Logistic regression controlling for patient demographics and clinical factors demonstrated there was no statistically significant difference for partial colectomy in 30-day mortality (OR 1.21 95% CI 0.76–1.96) or complication rate (OR 0.92 95% CI 0.51–1.62) compared to total colectomy. Sub-total colectomy trended towards longer postoperative stay (18.0 vs. 15.1 days for partial, p = 0.08).

**Conclusions:** In a national database, a significant percent of patients with CDAD underwent partial colectomies, against guideline recommendations. There were no significant differences found in mortality or complications between partial and sub-total colectomy for CDAD.

* NESS Non-Members
Brief 8. Implementation of Enhanced Recovery After Surgery Decreases the Length of Stay Following Living Kidney Donor Nephrectomy


Massachusetts General Hospital, Boston, MA

Objective(s): Evaluation of Enhanced Recovery after Surgery (ERAS) protocol on length of stay (LOS) and readmission of Living kidney donors (LKD)

Design: Non-randomized intervention study with historic control. The study was initiated in January 2013 and continued through December 2017. The control group were the prior LKD performed in 2010–2012.

Setting: A tertiary referral hospital, with experience in laparoscopic living donor nephrectomy and kidney transplantation.

Patients: LKD are healthy volunteers, who undergo nephrectomy to provide an important treatment option to benefit patients with end-stage renal disease. The intervention included 231 LKD: 76 men; 155 women (age range 21–73), the control group was 106 LKD: 39 men and 67 women (age range 21–66). All LKD performed at our center were included in the study.

Interventions: A multidisciplinary transplant team developed and introduced a new ERAS-like pathway. The revised pathway included: 1) Preoperative bowel regimen 2) Postoperative plan for activity progression and 3) Pain management protocol. A peripheral nerve block was placed in the OR followed by IV patient-controlled analgesia. On POD 1, Foley catheter was removed; oral pain management and ambulation were initiated.

Main Outcome Measure(s): LOS and readmission rates.

Results: The mean LOS (standard deviation) for LKD between 2007–2012: 2.53 (0.78); between 2013–2017: 2.24 (0.54) which was statistically significant P = 0.0009. An analysis of 30, 60, 90-day readmission rates remained unchanged.

* NESS Non-Members
Conclusions: Implementation of a standardized pathway is effective in reducing LOS for LKD without affecting readmission rates. Improved pain management with early ambulation appears to have the greatest influence.

5:00 PM – 5:45 PM  STATE CAUCUS MEETINGS
Connecticut – Winslow Homer
Maine – Rines A
Massachusetts – Grand Ballroom
New Hampshire – Rines B
Rhode Island – Hawthorne
Vermont – Marsden Hartley (Mezz Level)

6:00 PM – 7:00 PM  WELCOME RECEPTION
Ballroom Pre-Function
SATURDAY, SEPTEMBER 22, 2018

7:00 AM – 12:00 PM  REGISTRATION
Lobby Foyer

7:00 AM – 12:00 PM  SPEAKER READY ROOM
Lobby Foyer

7:00 AM – 10:45 AM  EXHIBIT HALL HOURS
Longfellow (Lower Level)

SPECIALTY GROUP BREAKFASTS

7:00 AM – 7:45 AM
Winslow Homer Ballroom
Navigating the Medicolegal Climate for Residents and Young Surgeons
Moderator: Walter E. Longo
Faculty: Mark G. Lavoie, Attorney
Anne C. Larkin
Longfellow (Lower Level)
Posters of Distinction Session for Best Poster Award
Moderator: Kari S. Rosenkranz

7:00 AM – 8:00 AM  CONTINENTAL BREAKFAST
Longfellow (Lower Level)
**Scientific Session III**  
*7:45 AM – 8:40 AM*  
Grand Ballroom  
**Co-Moderators:** Brigid K. Killelea  
Matthew A. Conway

Podium papers (8-minute presentation/5-minute discussion).  
Brief papers (3-minute presentation/2-minute discussion).

14. **Should Neoadjuvant Chemoradiotherapy Be Eliminated in Elderly Rectal Cancer Patients? A Review of the NCDB**  
*Ayana Allard-Picou, *Shiva K. Mukkamalla,  
*John Hardaway, *Ritesh Rathore, N. Joseph Espat,  
Ponnandai Somasundar  
Roger Williams Medical Center, Providence, RI

**Objective:** Standard of care for locally advanced rectal cancer (T3-4 or N1-2) includes neoadjuvant chemoradiotherapy (CRT) and surgical resection. Elderly patients (≥65 years) comprise majority of new rectal cancers but many are unable to tolerate neoadjuvant CRT resulting in delays to surgery. We evaluate the impact of neoadjuvant CRT on elderly rectal cancer patients.

**Design:** Retrospective review. Patients receiving preoperative CRT were compared to those receiving postoperative CRT and those receiving surgery alone. Subgroup analyses were performed on elderly and very elderly (≥75 years). Statistical analyses performed using Pearson Chi-square and multivariate logistic regression.

**Setting:** We utilized data from NCDB, including various institution types (community and academic programs in rural and urban settings).

**Patients:** All patients with rectal cancer who underwent surgical resection from 2006–2009, with 8,656 patients meeting criteria. Excluded patients with stage IV disease.

* NESS Non-Members
Interventions: N/A.

Main Outcome: Overall Survival.

Results: Overall, 64.6% patients received chemotherapy (58.1%: multi-drug regimen), 32.7% of patients received radiotherapy. Very elderly patients exhibited worse OS compared to elderly (HR 0.58), and to patients 18–64 years (HR 0.36), p < 0.0001. Patients who underwent treatment with systemic chemotherapy (single/multi-agent) demonstrated better OS compared to surgery alone patients (HR multi-agent: 0.56, p = 0.001; single agent: 0.61, p = 0.006). On multivariate, patients receiving preoperative CRT exhibited worse OS compared to those receiving postoperative CRT (HR 0.64, p < 0.0001) (Figure 1). Radiation did not have a significant survival impact (HR 0.98, p.32).

![Figure 1. Effect of Preoperative vs Postoperative CRT on Overall Survival in Elderly Patients](image)

Conclusion: Consideration should be given to eliminating neoadjuvant CRT in the elderly and when administered, should be done with caution.
15. Burden of Emergency Pediatric Surgical Procedures in Uganda: A Possible New Metric for Health System Performance in Resource-Limited Settings

*David F. Grabski*, *Maija Cheung*, *Nasser Kakembo*, *Anne Shikanda*, *Phyllis Kisa*, *Arlene Muzira*, *Martin Situma*, *John Sekabira*, *Doruk Ozgediz*

1University of Virginia, Charlottesville, VA; 2Yale University, New Haven, CT; 3Makerere University, Kampala, Uganda

**Objective:** The significant burden of emergent operations in low and middle-income countries (LMICs) may overwhelm surgical capacity. This can lead to backlogs of elective surgical cases with an associated increase in morbidity.

**Design:** Retrospective review of two independent and prospectively collected databases on pediatric surgical admissions.

**Setting:** Mulago National Referral Hospital and the Mbarara Regional Referral Hospital in Uganda.

**Patients:** Patients (age <14 years) admitted to the pediatric surgical service of either hospital between October 2015–June 2017.

**Interventions:** None.

**Main Outcome Measures:** Ratio of elective to emergent operations.

**Results:** 1,930 patients with sufficient clinical information were treated at both hospitals. 1,110 surgical procedures occurred over the time period (627 at Mulago and 483 at Mbarara). There were 564 emergent cases (50.9%), 113 urgent cases (10.2%) and 431 elective cases (38.9%). 62.7% of cases were emergent or urgent. By hospital site, Mulago had 396 emergent (63.2%), 58 urgent (9.3%) and 172 elective (27.5%) cases. Comparatively, Mbarara had 168 emergent (34.9%), 55 urgent (11.4%) and 259 elective (53.7%) cases. There was a statistically significant difference in the ratio of emergent and urgent to elective cases between the hospitals (Fisher’s Exact p < 0.0001). Most common cases include-intussusception (n = 112) and colostomy creation for anorectal malformations (n = 106) (emergent operations); sacrococcygeal teratomas (n = 28) and Wilms tumor (n = 18) (urgent operations); inguinal hernia repair (n = 104) and umbilical hernia repair (n = 48) (elective operations). 47/151 (31.3%) of inguinal hernias were treated as incarcerated or strangulated.

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* NESS Non-Members
**Conclusions:** The appropriate ratio of elective to emergent surgical cases in LMICs is unknown. However, emergent and urgent operations utilize the majority of operative resources. Pediatric surgical capacity should be increased to prevent backlogs of elective cases.
16. Decreased Post-Surgical Opioid Prescribing Does Not Affect Provider Satisfaction Scores
*Christopher E. Louie, *Julia L. Kelly, Richard J. Barth, Jr.
Dartmouth-Hitchcock Medical Center, Lebanon, NH

**Objective:** To determine if decreased opioid prescribing is associated with a decrease in provider satisfaction scores.

**Design:** Retrospective analysis of opioid prescribing and routine patient survey results.

**Setting:** Academic medical center.

**Patients:** Eleven surgeons performed 5 common outpatient general surgical operations on 996 total patients in Timeframe A (5/1/15–12/31/15) and Timeframe B (7/1/16 – 6/30/17).

**Interventions:** N/A.

**Main Outcome Measures:** 1) Opioid prescriptions 2) Patient reported “overall satisfaction rating” of provider (scale 1–10), collected by a routine general institutional survey of approximately 15% of all outpatient encounters.

**Results:** Comparing timeframe A to B, the percentage of patients prescribed opioids decreased from 90.2% to 72.8% (p < 0.0001) and the mean number of opioid pills per prescription decreased from 28.3 to 13.3 (p < 0.0001). The mean number of opioid pills prescribed significantly decreased for each of the 11 surgeons.

One hundred five of these 996 patients responded to the survey. There was no difference in the mean provider satisfaction ratings from timeframe A (9.70) vs B (9.65).

Across the two timeframes there were 640 total surveys collected referencing these 11 providers (including outpatient encounters associated with operations other than the 5 index cases). There was no difference in the mean satisfaction ratings from timeframe A (9.55) and B (9.59). One provider had a slightly higher and one a slightly lower satisfaction score in timeframe B vs A; there was no difference in the scores of the other 9 individual providers.

* NESS Non-Members
**Conclusions:** Despite a marked decrease in the percentage of patients receiving opioids, and a greater than 50% reduction in the number of pills per prescription, there was no significant change in provider satisfaction ratings.
Impact of Hepatectomy First in Management of Stage IV Colon Cancer with Synchronous Liver Metastases

Yale College of Medicine, New Haven, CT

Objectives: Patients with resectable synchronous colon liver metastasis (SCLM) can be surgically managed with different approaches. No level 1 data shows which approach equates to best clinical outcomes. In this study, we evaluate which treatment approach equates to the best clinical outcome for patients who present with SCLM.

Design: The National Cancer Database was queried from 2004–2015 for stage IV colon adenocarcinoma. Patients with isolated SCLMs who underwent hepatectomy were divided into 2 groups: hepatectomy-first and either colectomy-first or simultaneous colectomy and hepatectomy.

Main Outcome Measures: Clinical characteristics and survival were compared between each group.

Results: Of 508,820 patients diagnosed with colon adenocarcinoma, 32,476 (63.8%) had SCLMs. Of these, 4138 (5%) were treated with a hepatectomy-first approach. On Chi Square analysis, these patients more likely to possessed the following clinicopathologic features: age <60 years (P < 0.0001), non-white (P < 0.0001), primary tumor size <4 cm (P < 0.0001), no lymph node metastases (p < .0001), received chemotherapy (P < 0.0001), and treated at an academic center (p < .05). After adjusting for patient, treatment and tumor characteristics, individuals treated with a hepatectomy-first approach were less likely to die than those who underwent a colectomy-first or simultaneous hepatectomy and colectomy approach, with respective 5-year survivals of 47% vs. 29% (HR: 0.64 (95CI: 0.61–0.68) P < 0.0001). [Figure 1].

+ RPE Eligible Papers
* NESS Non-Members
Conclusions: In the United States, a hepatectomy-first approach to managing SCLM is infrequently used even though it is associated with increased survival, particularly when subsequent colectomy is completed. There is a need for better understanding of the biological underpinnings which may explain these results.

8:40 AM – 8:55 AM  INTRODUCTION OF NEW MEMBERS

*Grand Ballroom*
Paper of the Year & Scientific Session IV
8:55 AM – 10:15 AM
Grand Ballroom
Co-Moderators: Timothy L. Fitzgerald
Jennifer LaFemina

Podium papers (8-minute presentation/5-minute discussion).
Brief papers (3-minute presentation/2-minute discussion).

18. Paper or the Year Award: Genomic Responses in Mouse Models Poorly Mimic Human Inflammatory Diseases
Ronald G. Tompkins
Massachusetts General Hospital, Boston, MA

A cornerstone of modern biomedical research is the use of mouse models to explore basic pathophysiological mechanisms, evaluate new therapeutic approaches, and make go or no-go decisions to carry new drug candidates forward into clinical trials. Systematic studies evaluating how well murine models mimic human inflammatory diseases are nonexistent. Here, we show that, although acute inflammatory stresses from different etiologies result in highly similar genomic responses in humans, the responses in corresponding mouse models correlate poorly with the human conditions and also, one another. Among genes changed significantly in humans, the murine orthologs are close to random in matching their human counterparts (e.g., R2 between 0.0 and 0.1). In addition to improvements in the current animal model systems, our study supports higher priority for translational medical research to focus on the more complex human conditions rather than relying on mouse models to study human inflammatory diseases.

For complete article go to:
19. **Does Prevention of Venous Thromboembolism Impact Mortality? A Meta-Analysis of Randomized Controlled Trials**


*Yale University, New Haven, CT*

**Objective:** To test whether prevention of VTE imparts a mortality benefit.

**Design:** Meta-analysis and pooled random effect analysis of prospective randomized trials that demonstrated prevention of initial or recurrent VTE by pharmacologic means.

**Setting:** Multi-institutional medical and surgical experience.

**Patients:** Individuals at risk of VTE due to cancer, surgery, acute illness or prior VTE.

**Interventions:** Anticoagulant or antiplatelet therapy to prevent VTE.

**Main Outcome Measures:** Any-cause mortality; incidences of pulmonary embolism (PE), fatal PE and major bleeding.

**Results:** We studied data from 44,275 patients in 25 prospective randomized trials. Pharmacologic strategies prevented over half of VTE (incidence 2.5% vs 5.5%, OR 2.6, 95% CI 2.14–3.24), which corresponded to a similar reduction in pulmonary emboli (incidence 0.60% vs 1.39%, OR 2.2, 95% CI 1.73–2.88). However, there was not a significant decrease in fatal pulmonary emboli (incidence 0.19% vs 0.26%, OR 1.3, 95% CI 0.83–1.98) and all-cause mortality was not impacted (9.62% in prevention vs 9.60% in control, OR 1.04, 95% CI 0.96–1.11, P = 0.3369). Patients in the prevention group experienced a significant increase in major bleeding episodes (0.74% vs 0.49%, OR 0.71, 95% CI 0.55–0.91, P = 0.0077).

**Conclusions:** Pharmacologic strategies can prevent over half of VTE and PE but may not impact mortality. There was a trend towards reduced fatal PE in patients receiving pharmacologic prevention, but this may have been offset by a significant increase in major bleeding episodes. VTE have been described as the most common cause of preventable hospital death, but our results suggest current strategies to prevent VTE do not impact mortality. Future trials investigating therapies for VTE should balance the effect of bleeding complications and focus on patient-centered outcomes such as symptoms, cost or length of stay.

* NESS Non-Members
Does Overlapping Surgery Result in Worse Surgical Outcomes? A Systematic Review and Meta-Analysis


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Objective: The impact of overlapping surgery on patient outcomes has important implications to patient safety, clinical outcomes, and healthcare costs. While several studies have examined the relationship of overlapping surgery and various clinical outcomes, a combined analysis of available data has not been performed. The aim of the study was to evaluate the impact of overlapping surgery on 30-day mortality, morbidity, and length of surgery.

Design: Systematic review and meta-analysis.

Setting and Patients: Studies examining outcomes of patients who underwent overlapping versus non-overlapping surgery were included. Studies that examined concurrent surgery, included duplicate data, and/or included data exclusively from an ambulatory surgery center or children’s hospital were excluded.

Interventions: A systematic literature review was performed using PubMed, MEDLINE via OVID, and EMBASE to capture all relevant studies as of March 2018. A manual search of references from these articles was also performed. A pooled meta-analysis of the final selection of studies was performed using fixed- and random-effects models. Heterogeneity and publication bias were assessed and subgroup analysis was performed using quality score.

+ RPE Eligible Papers
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Main Outcome Measures: 30-day mortality, morbidity, and length of surgery.

Results: A total of 11 retrospective cohort studies with 14 sets of analyses met inclusion and exclusion criteria. Meta-analysis demonstrated no significant differences in 30-day mortality (OR = 0.84; p = 0.277) or overall morbidity (OR = 0.96; p = 0.632) between patients who underwent overlapping versus non-overlapping surgery. The standardized mean difference (SMD) for length of surgery between the groups indicated a small statistically significant increase in length of surgery for the overlapping surgery group (SMD = 0.079, p < 0.05).

Conclusion: While further study is warranted, current literature suggests that overlapping surgery is not associated with increased risk of mortality or morbidity.
21. **Volume-Outcome Relationship in Portoenterostomy for Biliary Atresia in the United States**

*Nathan Maassel, *Alex S. Chiu, Robert A. Cowles, Peter S. Yoo, *Daniel G. Solomon

*Yale University School of Medicine, New Haven, CT*

**Objective:** The volume-outcome relationship for Kasai Portoenterostomy (KPE) to correct biliary atresia with native liver survival is difficult to study: the disease is rare, and small centers may offer KPE but not Liver Transplant (Txp). Therefore, single institution retrospection, and even administrative databases might not appropriately capture all outcomes. We sought to evaluate the rate of Txp following KPE performed at the same centers to determine if the volume of KPEs was associated with the rate of need for future Txp.

**Design:** Retrospective review of the Children’s Hospital Association’s (CHA) Pediatric Health Information System from 2013–2017.

**Setting:** CHA-affiliated high-volume (>2 KPE/year) and low-volume (≤2 KPE/year) hospitals that performed at least 1 Txp on a previous KPE patient.

**Patients:** Infants <120 days old with ICD-9 diagnostic codes for biliary atresia and procedure codes for KPE with/without a subsequent code for Txp.

**Main Outcome Measure:** Need for transplant within the study period. Surgical complications and mortality were also collected.

**Results:** 182 KPEs were performed at 22 institutions that met inclusion criteria, 14 of which were low-volume (Mean 1.05 KPE/year) and 8 high-volume (Mean 2.75 KPE/year). There were no KPE mortalities but a higher rate of surgical complications following KPE at the high-volume centers (26% vs 9% p = 0.006). There was no difference in age at KPE or age at Txp. Logistic regression demonstrated that patients at low-volume centers were twice as to require a subsequent transplant (OR 2.30 95% CI 1.15–4.59).

**Conclusion:** Despite a higher rate of complications, high-volume centers have better short-term native liver survival following KPE. This finding has implications for the centralization of care for this rare, complex and morbid disease.

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* NESS Non-Members
22. Safety of Radiation Therapy Following Mastectomy with Immediate Reconstruction for Breast Cancer

*Lauryn A. Gamble, *Julia Kelly, *Lesley Jarvis, Kari Rosenkranz, Christina Angeles

*Dartmouth-Hitchcock Medical Center, Lebanon, NH

**Objective:** Assess safety of post mastectomy radiation therapy (PMRT) following mastectomy with breast reconstruction.

**Design:** Chart review of patients treated with mastectomy and immediate breast reconstruction (IBR) between 2000–2006.

**Setting:** Individual academic center in New England.

**Patients:** 603 patients underwent mastectomy, 273 underwent IBR, mean age at diagnosis was 47 years (range 25–75), 100% women.

**Interventions:** 273 of 603 patients (45.3%) underwent IBR. 62 of the 273 who underwent IBR (22.7%) received PMRT.

**Main Outcome Measures:** Complications following IBR and PMRT including seroma, infection, fat necrosis, and contracture were documented. Median follow-up was 6.3 years.

**Results:** Two thirds (59.7%) of the IBR patients received transverse rectus abdominis (TRAM) flaps, 20.9% latissimus dorsi (LD), 16.5% expander/implant prosthesis alone, and 2.9% other flaps. The majority of those undergoing IBR did not receive PMRT (211, 77.3%); 98 (46.5%) suffered a surgical complication and 54 (25.6%) classified as Clavien-Dindo grade IIIb (CD IIIb). Comparatively, less than a quarter of patients undergoing IBR (n = 62, 22.7%) underwent PMRT; 36 (58.1%) complications occurred, 14 (22.6%) classified as CD IIIb, and half of these (n = 7) followed radiation therapy. Using chi-square analysis, there was no statistically significant difference in overall complication rate or CD IIIb complications between those who received PMRT and those who did not (p = 0.1076 and p = 0.6298 respectively). In both groups, the complication rate was highest in those who received TRAM flaps–56 (57.1%) in the non-PMRT group and 23 (63.9%) in the PMRT group.

**Conclusions:** Conflicting evidence exists regarding the safety of PMRT following breast reconstruction. Our data shows no statistically significant difference in complication rate in IBR patients with or without PMRT.

* NESS Non-Members
Objective: Spontaneous retroperitoneal and rectus sheath hematomas often occur in the absence of trauma or instrumentation. Although surgeons are commonly consulted, there is a paucity of literature describing whether intervention is required and outcomes. In this study we examine the current management of spontaneous hematomas at an academic center.

Design: Retrospective series examining all adult patients who developed a spontaneous rectus sheath or retroperitoneal hematomas.

Setting: Academic tertiary care center.

Patients: Adult patients (ages 18 or older) diagnosed with spontaneous rectus sheath or retroperitoneal hematomas over one-year period.

Interventions: None.

Main Outcome Measures: Therapeutic intervention required, blood product transfusion requirements.

Results: 99 patients met the inclusion criteria. Median age was 73 (IQR 61–80) with an equal gender distribution. 88 patients were anticoagulated; most commonly used agents included warfarin (42%) and heparin infusion (36.4%). 26 patients had evidence of shock and 79 patients required blood product transfusion (79.8% PRBC, 43.4% FFP, 17% platelets). Diagnosis was made by CT scan in all patients. 17 patients underwent angioembolization for contrast extravasation. One patient underwent surgery for bleeding control in anticipation of anticoagulation after a planned mesenteric angiogram. Neither anticoagulation in general nor any specific agent were associated with the need for blood product transfusion or angioembolization. ICU admission occurred in 69 patients with a median ICU LOS 4 days and median total hospital LOS 10 days. There were 13 deaths; none were attributed to the hematoma.
**Conclusions:** Spontaneous hematomas are generally self-limiting and rarely require surgery. A small subset may require angioembolization for evidence of contrast extravasation. Surgical consultation is unnecessary as intervention is not required. Additional larger studies are required to identify risk factors for these conditions.
Brief 10. Driving Safety Among Surgical Residents in the Era of Duty Hour Restrictions

*Mollie R. Freedman-Weiss, *Danielle R. Heller,
*Alexander S. Chiu, Raymond A. Jean, Peter S. Yoo

Yale University School of Medicine, New Haven, CT

Objective: Fatigued driving is a known contributor to adverse motor vehicle events (AMVEs), defined as crashes and near misses. Surgical trainees work long and irregular hours, even within duty hour constraints. We assessed the impact of fatigue on driving safety and perspectives on a funded ride program among surgical residents at our institution.

Design: Electronic, anonymized survey. Chi-Square testing determined categorical differences.

Setting: University-based General Surgery residency with 4 distinct urban clinical sites.

Participants: 61 of 75 General Surgery residents (81%), PGY 1–5.

Interventions: N/A.

Main Outcome Measures: AMVEs during work-related driving; Frequency of fatigue and falling asleep while driving; Use of hired rides and interest in funded rides as a potential solution.

Results: Ninety-seven percent reported that fatigue compromises their safety while driving to or from work. Eighty-three percent reported falling nearly or completely asleep, and 22% reported AMVEs during work-related driving. Junior residents (PGY 1–2) were more likely than seniors (PGY 3–5) to drive fatigued on a daily-to-weekly basis (69% vs 47%, p = 0.02) and twice as likely to fall asleep on a weekly-to-monthly basis (67% vs 33%, p = 0.02). Despite this, only 3% of residents have hired a ride service when fatigued; 88%, however, would use a free ride service if provided.

Conclusions: Work-related fatigue impairs the driving safety of nearly all residents, contributing to an unacceptably high rate of AMVEs. Juniors are disproportionately affected. Despite ample data correlating fatigue with AMVEs, and near universal self-reporting of fatigued driving among residents, few residents hire ride services. Eliminating the cost barrier by funding free ride programs may protect surgical trainees and other drivers. Studies of AMVE rates after implementing such programs are indicated.

* NESS Non-Members
Brief 11. Perioperative Outcomes After Thyroidectomy: Does the Level of the First Assist Matter?

1Dartmouth Hitchcock Medical Center, Lebanon, NH; 2The Dartmouth Institute, Hanover, NH; 3University of Michigan Medical

Objective: Physician assistants (PAs) are increasingly employed to fill the role of first-assistant in the operating room, a role traditionally held by residents or fellows. The objective of this study was to understand the impact of first-assistant type (resident vs. fellow vs PA) on perioperative outcomes for thyroidectomy.

Design: Retrospective cohort.

Setting: Hospitals participating in the Collaborative Endocrine Surgery Quality Improvement Program.


Intervention: N/A.

Main Outcome Measure(s): Transection of recurrent laryngeal nerve, post-operative hematoma, and post-operative vocal cord dysfunction.

Results: Residents and fellows primarily assisted with neoplastic cases (48% and 50% of caseload respectively), whereas PAs most commonly assist with multinodular-goiter cases (40%, Figure 1A). Compared to PAs, residents and fellows operate on a higher proportion of patients with prior anterior-neck surgery (resident:11.7%, fellow:14.1%, PA: 9.2%, p < 0.005) and patients on anticoagulation medications (resident: 22.0%, fellow: 18.3%, PA: 8.1%, p < 0.005). On adjusted multi-level logistic regression, where first-assistants were clustered by surgeon, we found that first-assistant type did not affect the likelihood of laryngeal nerve transection or post-operative hematoma. However, patients undergoing neoplastic thyroidectomy were 87% less likely to have post-operative vocal cord dysfunction when PAs assisted compared to residents (OR: 0.13 (95% CI: 0.03, 0.63), p < 0.05); no difference was noted for multinodular-goiter cases (Figure 1B).

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Conclusion: There was a higher likelihood of postoperative vocal cord dysfunction when residents or fellows assist with neoplastic cases. However, surgical residents and fellows participated in a higher proportion of neoplastic and redo-neck cases, suggesting their preference for more technical cases in training.

10:15 AM – 10:45 AM  COFFEE BREAK: VISIT EXHIBITS & POSTERS OF DISTINCTION/E-POSTERS
Longfellow (Lower Level)
POSTERS OF DISTINCTION & E-POSTERS

*POD1. Clinical Science Second Place Award – NESS Resident and Fellow Research Day

Preemptive Analgesia Decreases Pain Following Anorectal Surgery: A Prospective, Randomized, Double-Blinded, Placebo-Controlled Trial


1Department of General Surgery, Albany Medical Center, Albany, NY; 2Department of Emergency Medicine, Naval Medical Center, Portsmouth, VA; 3Department of Anesthesiology, University of Vermont Medical Center, Burlington, VT; 4Department of Surgery, University of Vermont Medical Center, Burlington, VT; 5Department of Statistics, University of Vermont, Burlington, VT

Objective: To evaluate the effectiveness of preemptive analgesia in decreasing postoperative pain following anorectal surgery.

Design: Randomized, double-blinded, placebo-controlled clinical trial.

Setting: University of Vermont Medical Center, a tertiary care referral center in Burlington, VT.

Patients: Age greater than 18 years, American Society of Anesthesiology Physical Status Classes I, II, or III, undergoing surgery for anal fissure, fistula, or condyloma, or hemorrhoids.

Interventions: Preoperative acetaminophen and gabapentin followed by intravenous ketamine and dexamethasone before incision compared with oral placebos.

Main Outcome Measures: Postoperative pain scores, percentage of patients utilizing breakthrough narcotics, and rates of side effects.

Results: Ninety patients were enrolled. Due to patient withdrawal, screen failures, and loss to follow up, 61 patients were analyzed (30 in the active group and 31 in the control group). Patients in the active group had significantly less pain in the post anesthesia care unit (PACU) and at 8 hours postoperatively. Significantly fewer participants in the active...
group used narcotics in PACU and at 8 hours postoperatively. Average pain scores were excellent for both groups. There was no difference in the number of side effects.

**Conclusions:** Preemptive analgesia is safe and results in decreased postoperative pain and fewer patients requiring narcotics in the early postoperative setting following anorectal surgery. It should be implemented by surgeons performing these procedures.
**POD2.** Basic Science First Place Award – NESS Resident and Fellow Research Day

Programmed Cell Death Receptor-1 (PD-1)’s Effects on Innate Immune Cells: Unraveling Lung Injury After Neonatal Intra-Abdominal Sepsis

*Eleanor A. Fallon*, Daithi S. Heffernan, *Anne-Lise Rossi,*

*Chun-Shiang Chung,* *Alfred Ayala

*Brown University/Rhode Island Hospital, Providence, RI*

**Objective:** To establish the role Programmed cell death receptor-1 (PD-1) and its ligands on immunomodulation of lung injury after neonatal sepsis.

**Design:** Mice randomized to sham or cecal slurry (CS).

**Setting:** N/A.

**Patients:** Mice: WT C57BL/6 or PD-1-/-, PD-L1-/-, PD-L2-/- on C57BL/6 background.

**Interventions:** Sham injection of normal saline. Cecal Slurry injection of cecal contents from an adult male WT donor to model intra-peritoneal, polymicrobial sepsis.

**Main Outcome Measures:** Lungs harvested after 24 hours were assessed via flow cytometry for neutrophils (CD11b+Ly6G+) and PD-1/ PD-L1 (Programmed Death Ligand 1)/PD-L2 presence. ELISA for pulmonary cytokines IL-6/IL-10/TNF-α.

**Results:** Consistent with previous findings on immunohistochemistry, we observed neutrophil influx following CS among WT lungs (p = 0.0012), a phenomenon markedly attenuated in PD-1’s absence (p = 0.0733). Although absolute number of neutrophils expressing PD-1, PD-L1 or PD-L2 significantly increased after CS vs. Sham (p = 0.0031, 0.0018, 0.009 respectively), the percentage of distribution remained unchanged. Among PD-1-/- mice, however, expression of PD-L1 and PD-L2 was not upregulated either proportionally or among total cell counts, suggesting that PD-1’s ligand interactions regulate neutrophil influx into and habitation within pulmonary parenchyma. In WT, CS induced a relative increase (1.98 (IQR 0.82–4.89)) of IL-6 over Sham vs. a relative decrease among PD-1-/- lungs (0.29 (IQR = 0.15–0.9;p = 0.032); IL-10 echoed this relationship among WT (2.6 (IQR 2.1–5.4))

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vs. PD-1-/- lungs (0.57 (IQR0.25–0.59;p = 0.03)). There was no significant alteration of TNF-α expression across Naïve, Sham or CS lungs in either WT or PD-1-/- strains.

**Conclusions:** PD-1 and PD-L1 are current therapeutic targets against malignancy and could be future targets in sepsis. PD-1 affects the innate immune system, as represented by neutrophils, which may predominate over lymphocytes in this early post-natal stage of immune development in response to septic challenge.
**POD3.** Clinical Science First Place Award – NESS Resident and Fellow Research Day

What Is the Risk of Anal Carcinoma in Patients with Anal Intraepithelial Neoplasia III?

*Grace C. Lee¹, Hiroko Kunitake¹, *Holly Milch¹, 
*Lieba R. Savitt¹, *Caitlin Stafford¹, Liliana G. Bordeianou¹,  
*Todd D. Francone², Rocco Ricciardi¹

¹Massachusetts General Hospital, Boston, MA;  
²Newton Wellesley Hospital, Newton, MA

Objective: The primary objective was to quantify the risk of anal squamous cell carcinoma (SCC) in patients with anal intraepithelial neoplasia (AIN). The secondary objective was to identify predictors for malignant transformation.

Design: Retrospective analysis of a population-based patient cohort. Median follow up time was 4.3 ± 3.3 years.


Patients: All patients diagnosed with AIN III were included in the cohort.

Intervention: N/A.

Main Outcome Measures: Whether or when patients with AIN III were diagnosed with anal SCC.

Results: A total of 2,129 patients with AIN III were identified, of whom 173 (8.1 ± 1.1%) went on to develop anal SCC. Median time from AIN diagnosis to anal SCC diagnosis was 2.7 ± 2.6 years. Fifty-three patients (30.8%) who developed anal SCC were staged T2 or higher. For treatment of initial AIN, 602 patients (28.4%) had no procedure, 298 (14.0%) underwent ablative surgery, and 1,182 (55.7%) underwent excision. Multivariable analysis revealed that ablative therapies for initial AIN were associated with a marked reduction in risk of anal SCC, compared to no procedure (OR 0.3, 95% C.I. 0.1–0.6; p = 0.003) (Table 1).
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**Conclusions:** The incidence of anal SCC after AIN III diagnosis is markedly higher than previously reported, as 8.1% of patients in our population-based cohort developed anal cancer. Nearly one-third of anal SCCs were diagnosed at a stage of T2 or higher despite a prior diagnosis of AIN, suggesting that AIN lesions require more vigilant surveillance. Ablative procedures were associated with significantly decreased risk of anal SCC, indicating the effectiveness of this modality.
Objective: To determine if altered regulation of DNA Damage response genes (DDR) occurs early in the transition from chronic colitis to Colitis-Associated Cancer (CAC) in a pre-clinical model of disease.

Design: We utilized the best characterized murine model of CAC, Azoxymethane/Dextran Sodium Sulfate (AOM/DSS), to study tumorigenesis in C57BL/6 mice. Mice were separated into four groups; control, DSS only, AOM only, and AOM/DSS. Murine colonic tumors were graded through bi-weekly high-resolution colonoscopy. Upon sacrifice, colons were opened, assessed for macroscopic tumor, and segmented. Representative colons were evaluated by histopathology. Critical DDR genes were evaluated by semi-quantitative RT-PCR.

Setting: N/A.

Patients: N/A.

Interventions: N/A.

Main Outcome Measures: N/A.

Results: Tumors were observed by 5 weeks in the AOM/DSS cohort only. Administration of AOM only resulted in up-regulation of DDR genes at 35 days. Upon colonic resection, half of the AOM/DSS cohort displayed macroscopically visible tumor (MVT). In the remaining mice in the AOM/DSS group we observed barely detectable (Grade 1) tumor by colonoscopy only or no observable tumor, therefore, these mice were denoted the non-macroscopically visible tumor group (NMVT). Interestingly, both MVT and NMVT tumor-developing groups showed reduced

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mRNA expression of \textit{mlh1}, \textit{anapc1}, and \textit{ercc4} relative to DSS or mutagen alone. Moreover, colitis alone was able to reduce mRNA expression of gene \textit{ercc4}.

\textbf{Conclusions:} For the first time, \textit{ercc4} has been shown to be downregulated in colitis and may mark early transition to CAC in a pre-clinical model. Additionally, DDR gene expression is specific and not universal in neoplastic progression. This phenomenon has not been previously illustrated in CAC. Finally, these data highlight the AOM/DSS model as a means to further investigate potential markers of early malignant transformation.
POD5. Multicenter Experience with Valve-in-Valve Transcatheter Aortic Valve Replacement Compared with Primary, Native Valve Transcatheter Aortic Valve Replacement


¹Maine Medical Center, Portland, ME; ²University of Vermont Medical Center, Burlington, VT; ³Dartmouth-Hitchcock Medical Center, Lebanon, NH; ⁴Catholic Medical Center, Manchester, NH; ⁵Eastern Maine Medical Center, Bangor, ME; ⁶Dartmouth-Hitchcock Medical Center, Lebanon, NH

Objective: Bioprosthetic surgical aortic valve prostheses are susceptible to structural degeneration. Valve-in-valve (ViV) transcatheter aortic valve replacement (TAVR) offers a solution.

Design: Retrospective.

Setting: Five academic and community hospitals.

Patients: Consecutive series of 80 ViV TAVR patients and 1,476 patients undergoing primary native valve TAVR from 2012 to 2017.

Interventions: Transcatheter aortic valve replacement.

Main Outcome Measures: Morbidity and mortality.

Results: ViV patients were less likely female (28.9% vs. 46.5%, P < 0.001), younger (75 vs. 81 years, P < 0.001), more likely to have prior CABG (36.3% vs. 24.3%, P = 0.016), and urgent (30.0% vs. 10.2%, P < 0.001). 30% of the patients had STS risk score <4%, 36.3% were 4–8% and 33.8% were >8%. Median time to prosthetic failure was 9.6 years (Interquartile range: 5.5–13.5 years). 82% of failed surgical valves were size 21 mm, 23 mm, or 25 mm. ViV devices were Medtronic CoreValve (32.5%) and Edwards Sapien (67.5%). Access was 89% femoral, 10% transapical and 1% other. After ViV, 83.5% had none/trivial aortic regurgitation, 12.7% had mild and 3.8% had moderate Mean gradients were: <20 mmHg in 60.8%, 20–29 mmHg in 25.3%, 30–39 mmHg in 6.3%

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* NESS Non-Members

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and $\geq 40$ mmHg in 7.6%. In-hospital mortality was 0%. 30-day mortality was 0% in ViV and 3.7% in primary TAVR ($P = 0.082$). Pacemaker rate in ViV was 3.8% and in primary TAVR was 8.5% ($P = 0.13$). There was no difference in post-procedure myocardial infarction, stroke, or acute kidney injury ($P > 0.05$ for all).

**Conclusions:** Compared to primary TAVR, valve in valve TAVR is less commonly performed, has similar peri-procedural morbidity, and results in relatively high post-procedure mean gradients.
**POD6.** Surgery’s #Me Too Movement – Results of a Sexual Harassment Survey in an Academic Institution

Jacqueline Wu, *Susan Kartiko, *Aditi Kapil
Baystate Medical Center, Springfield, MA

**Objective:** To determine the prevalence of sexual harassment among general surgery residents and teaching faculty at an academic medical center as well as to analyze the differences in incidence of sexual harassment between males and females, trainees and attendings.

**Design:** Anonymous, validated online survey.

**Setting:** Academic medical center.

**Patients:** Not applicable.

**Interventions:** Not applicable.

**Main Outcome Measures:** Incidence of sexual harassment within 12 months of the survey and differences in the incidence between genders, trainees and faculty.

**Results:** Eighty-six individuals (39 residents, 47 faculty) received the survey. Overall response rate was 74.4% (90% of residents; 62% of faculty). Seventy-one percent and 63% of residents reported witnessing or experiencing sexual harassment respectively within the past 12 months while prevalence was 62% and 48% for faculty. Frequency of sexual harassment was not statistically different between males and females and residents and faculty. Fifty percent of sexual harassment occurred on hospital grounds; 73% occurred between members of the surgery department. Half of the offenders were a person of authority. The majority of those experiencing sexual harassment did not report the incident (82%).

**Conclusions:** Sexual harassment is prevalent in academic institutions among both residents and faculty of all genders. Our data is similar to older data of other academic institutions and departments. More education around recognizing, preventing and reporting sexual harassment is needed. Further study involving multiple institutions is necessary to better assess the extent of this issue.

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* Poster of Distinction
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Objective: For appropriately selected patients with Hirschsprung Disease (HD), single-stage primary pull through obviates the need for a second stage ostomy takedown. The correct timing of pull-through is controversial, and can be performed at time of diagnosis or electively in stable infants stooling via rectal irrigation after a period of growth. We sought to compare outcomes of pull-through done in the first 30 days of life to 31–120 days.


Setting: ACS NSQIP-Peds affiliated Hospitals.

Patients: Infants <120 days old, >36 weeks gestational age, with HD, without prior ostomy or major comorbidities, who underwent primary pull-through.

Main Outcome Measure: Postoperative length of stay (LOS), readmission rate, cumulative postoperative complications (infectious, reoperation, sepsis, etc.).

Results: Of 282 patients, 182 (65%) underwent pull-through at <31 days and 100 (35%) between 31–120 days. Postoperative LOS in <31 day group was 8.2 days (SD-8.3) versus 4.3 days (SD-5.5) in 31–120 day group (p < 0.001). Linear regression adjusting for patient factors demonstrated that pull-through at 31–120 days predicted lower postoperative and total LOS [postop: −3.1 days (CI, −5.6 to −0.5); total: −4.6 days (CI, −8.1 to −1.2)]. Neither readmission nor cumulative complication rates significantly differed between age groups (readmission: 15.6% vs 13% p = 0.51; complication: 5.5% vs 10% p = 0.16 for <31 day vs 31–120 days respectively).

Conclusion: For otherwise healthy infants with HD, delaying pull through until the second month of life is associated with total and postoperative LOS reductions of 3 and 5 days respectively—without increased readmissions or complications. This finding may guide surgeons’ decisions on timing of pull-through and encourage discharging infants with HD home prior to operation.

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* NESS Non-Members
Objective: To evaluate the relationship between density of colorectal surgeons in a hospital referral region (HRR) and the rates of abdominoperineal resection (APR) or low anterior resection (LAR) for rectal cancer.

Design: Dartmouth Atlas study.

Setting: 100% United States Medicare Part B claims data.

Patients and Other Participants: 2014 Medicare beneficiaries with rectal cancer (ICD-9: 154.1). Using certification data from the American Board of Colon and Rectal Surgery, we determined the density of active board-certified colorectal surgeons in 2014 by HRR (low <5, medium 5–9, and high >9).

Interventions: APR (CPTs: 45110, 45395) or LAR (CPTs: 44145, 44146, 44207, 44298, 45112, 45397).

Main Outcome Measure: Rates of APR or LAR per Medicare Beneficiary (MB) compared to the density of colorectal surgeons in each HRR.

Results: 1,821 beneficiaries underwent APR, and 3,366 beneficiaries underwent LAR for rectal cancer in 2014. The national rates of APR and LAR were 6.66 and 12.12 per 100,000 MB, respectively. Individual rates were available for 46 HRRs for APR and 104 HRRs for LAR (those with >10 procedures/year). The average rates of APRs per 100,000 MB in the low, medium, and high density groups were 8.76, 7.82, and 6.66 respectively. The average rates of LARs per 100,000 in the low, medium, and high density groups were 13.07, 13.08, and 14.05 respectively.

Conclusions: Higher density of board-certified colorectal surgeons is associated with decreased rates of APR for Medicare beneficiaries. Higher colorectal surgeon density is associated with increased rates of LAR, albeit to an attenuated degree compared to APR.
**POD9.** Understanding Entrustment Decision Making By Surgical Program Directors

* Samantha L. Ahle¹,  *Katherine Gielissen¹,* Danya E. Keene²,  *Justin D. Blasberg¹

¹Yale School of Medicine, New Haven, CT; ²Yale School of Public Health, New Haven, CT

Objective: Explore factors that mediate entrustment decision-making by surgical program directors (PDs.) Current dogma suggests clinical entrustment is derived from: 1) trainee attributes, 2) supervisor attributes, 3) supervisor-trainee relationship, 4) context, and 5) nature of the task. However, these characteristics do not fully encapsulate how entrustment decision-making occurs in patient-care settings. The goal of this study is to elucidate variables that inform ad hoc and summative entrustment decisions of surgical PDs, and develop a common framework for entrustment paradigms.

Design: Interviews obtained by purposive and convenient sampling. Setting: Fifteen nationally representative ACGME-certified surgical programs.

Participants: Surgical PDs.

Interventions: In-depth, semi-structured interviews transcribed using Rev® and coded with Dedoose® qualitative software. Thematic codes were extrapolated following data analysis in an iterative process.

Main Outcome Measures: Personal, professional, and systemic variables that inform entrustment decision-making.

Results: 1) Presumption of competency based on expected trajectory: Surgical residency represents a traditional apprenticeship model. PDs entrust based on experience level under the assumption that trainees follow an expected trajectory, despite acknowledging that heterogeneity of achieving milestones exists. 2) Transference of competence: PDs are unable to directly observe trainees in all domains. When residents demonstrate competence in one domain, they are entrusted in other domains. 3) Quantitative competency assessments do not facilitate entrustment: Milestones and other quantitative assessments are not surrogates to predict entrustment.

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**Conclusions:** This study expands on established educational principles and milestone metrics that define surgical education. PDs play a vital role in facilitating entrustment by critically sorting inputs from multiple sources. Inherent to this process is an assumption of competence based on training level and performance in multiple domains; this can lead to false assumptions about trainee ability.
**POD10.** Robotic-Assisted Liver Resection for Metastatic Colorectal Cancer: A Multicenter Evaluation of Long-Term and Oncologic Outcomes


1Rhode Island Hospital, Alpert Medical School of Brown University, Providence, RI; 2University of Pittsburgh Medical Center, Pittsburgh, PA; 3City of Hope National Medical Center, Duarte, CA; 4Memorial Sloan-Kettering, New York, NY; 5Cleveland Clinic, Cleveland, OH; 6Carolina Medical Center, Charlotte, NC; 7Ghent University Hospital Medical School, Ghent, Belgium; 8Tulane University, New Orleans, LA

**Objective:** To assess long-term oncologic outcomes for robotic-assisted liver resection for colorectal cancer (CRC) metastases.

**Setting:** Although safety and short-term outcomes of robotic-assisted liver resection have been described, long-term and oncologic data are lacking.

**Design:** A retrospective study of all patients who underwent robotic-assisted liver resection for CRC metastases at six high volume centers in the United States and Europe between 2008 and 2016. The data were analyzed with a focus on oncologic outcomes and long-term recurrence and survival.

**Results:** Robotic-assisted liver resection for metastatic CRC was performed in 115 patients. The most common sites of the CRC primary were rectum (36.5%) and sigmoid (20%), and synchronous liver metastases were present in 42.6% of cases. Both minor (85.3%) and major resections (14.7%) were performed. Other concomitant procedures were performed in 62.6% of cases and six cases (5.2%) were converted to an open operation. R0 resection rate was 73.9% with the median closest margin being 0.6 cm (range 0.1–5.0 cm). Complication rates were 34% overall and 8.7% serious with one 30-day mortality. Recurrence occurred in 52.2% of patients. Overall survival was 97.3%, 71.3% and 54.5% and disease-specific survival was 61.6%, 37.1% and 28.5% at 1-, 3- and 5-years, respectively.

* Poster of Distinction
* NESS Non-Members
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<td>Length of stay in days [median (range)]</td>
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**Figure 1.** Overall and disease-free survival curves. Overall survival was available for 114 patients, 32 patients died during the follow up time, 82 were censored (71.9%). Disease-free survival was available in 113 patients, 63 experienced disease recurrence during the follow up time and 50 were censored (44.2%). Log-rank test: \( P=0.000 \) between overall survival and disease-free survival comparison.

![Overall Survival and Disease-Free Survival](image)

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**Conclusions:** Robotic-assisted liver resection for colorectal metastases is feasible and safe, with long-term oncologic outcomes largely comparable to those reported in contemporaneous laparoscopic series.
P11. Alginate Microparticles Loaded with Basic Fibroblast Growth Factor Induce Tissue Coverage in a Rat Model of Myelomeningocele


1Yale University School of Medicine, New Haven, CT; 2Department of Biomedical Engineering, School of Engineering and Applied Science, Yale University, New Haven, CT; 3Yale University School of Medicine, Department of Biomedical Engineering, School of Engineering and Applied Science, Yale University, New Haven, CT

**Objective:** To develop a minimally invasive intra-amniotic therapy for prenatal treatment of myelomeningocele (MMC) in an established rat model.

**Design:** Basic science study.

**Setting:** Laboratory.

**Patients:** Rats.

**Interventions:** Time-dated rats were gavage-fed retinoic acid to induce MMC. Groups received intra-amniotic injections at E17.5 with synthetic particles loaded with fluorescent dye, basic fibroblast growth factor (Alg-HSA-bFGF), fluorescently tagged albumin (Alginate-BSA-TR), free bFGF, blank alginate particles (Alg-Blank), or PBS. Groups were analyzed at 3 hours for fluorescent particle binding specificity or at term (E21) to determine presence of MMC tissue coverage.

**Main Outcome Measures:** Fluorescence ratios of MMC defect vs skin after particle injections; presence of partial or complete tissue covering nerves in MMC defect.

**Results:** Alginate microparticles demonstrated specific binding to the MMC defect 3 hours after injection. At E21, 150 of 239 treated pups (62.8%) were viable. 18 of 61 (30%) treated with Alg-HSA-bFGF showed soft tissue coverage compared to 0 of 24 non-injected (P = 0.0021), 0 of 13 PBS (P = 0.0297), and 0 of 42 free bFGF (P = P < 0.0001). Particle aggregate scaffolds associated with disordered keratinized tissue were observed in 2 of 18 (11%) Alg-BSA-TR and 3 of 19 (16%) Alg-Blank specimens.

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**Conclusions:** Alginate microparticles bind specifically to the MMC defect without surface modification. Injection of microparticles loaded with bFGF resulted in significant soft tissue coverage of the MMC defect compared to controls.
Massachusetts General Hospital, Boston, MA

Objective: Wound contracture is a debilitating complication resulting from excessive myofibroblast activity during wound healing. Currently, no treatment to prevent contracture exists. Photochemical Tissue Passivation (PTP) occurs when tissue is coated with photosensitive dye and exposed to visible light. PTP has been shown in other animal models to decrease fibroblast-mediated collagen contraction, decrease myofibroblast activity and strengthen tissue. We hypothesize that PTP treatment to full-thickness wounds will significantly decrease wound contracture morbidities by strengthening the wound bed and limiting the myofibroblast response.

Design: Randomized control trial.

Setting: Trained medical professionals can use this treatment in any setting.

Patients: Thirty-two C57BL/6 mice were randomized to the untreated control group (n = 16) or the PTP treatment group (n = 16).

Interventions: 1 × 1 cm full-thickness excisional wounds were created on the dorsum of all mice. PTP wound beds were painted with photosensitive dye and exposed to visible light at a fluence of 60J/cm².

Main Outcome Measures: Wounds were serially photographed for 6-weeks to measure percent contracture. At 7, 14, 21, and 42 days post-operatively, animals were euthanized and wound skin was harvested for histological review by a dermatopathologist.

Results: Treated wounds contracted significantly less than controls. At 7 days, control groups showed nearly 20% more contracture (67.1 ± 17.1% vs 80.3 ± 8.5%; p = 0.014), and by 14 days, over 80% more (27.8 ± 8.6% vs 50.3 ± 11.9%, p < 0.05). At 21 days, PTP wounds were 1.05-fold less contracted (p < 0.05). At 42 days, control wounds contracted to 13.6 ± 5.6% and PTP wounds to 35.2 ± 2.9% (p = 0.003). Histologically,

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PTP wounds had earlier and increased dermal collagen development and ingrowth, neovascularization, and development of skin appendages compared to controls.

**Conclusions:** PTP significantly limits contracture in full-thickness excisional wounds, and may accelerate and improve wound healing.
P13. Bioengineered Nanofiber Scaffold Loaded with Resveratrol Improves Cardiac Function Following Myocardial Infarction After Four Weeks
*University of Connecticut Health Center, Farmington, CT

Objective: To determine if an engineered nanofiber scaffold loaded (poly-caprolactone, or PCL) with the pro-angiogenic molecule resveratrol (PCL+R) has an impact on cardiac function following topical implantation after myocardial infarction (MI).

Design: Preclinical murine MI model.

Setting: Basic Science Surgical Laboratory (UCHC).

Patients: ICR-CD1 mice aged 8–12 weeks were used for the study.

Interventions: Mice underwent LAD occlusion or sham surgery. If LAD occlusion occurred, mice were further divided into MI alone, MI with added PCL, or MI with PCL+R.

Main Outcome Measure: The main outcome measure was left ventricular function, as measured by ejection fraction (EF), fractional shortening (FS), stroke volume (SV), and cardiac output (CO) through echocardiogram. Significance is set at *p < 0.05.*

Results: The MI+PCL-R group showed improvement in EF (45.28 ± 3.7% vs 32.67 ± 2.97%), FS (22.85 ± 2.15% vs 15.59 ± 1.54%), SV (50.9 ± 3.94μL vs 33.86 ± 3.04 μL), and CO (22.302 ± 2.46 mL/min vs 14.09 ± 1.32 mL/min) compared to the MI+PCL. With respect to the MI, EF (30.85 ± 3.22%) and FS (14.80 ± 1.68%) were reduced compared to MI+PCL+R. SV and CO also improved compared to MI, but there was no statistical significance. We also observed increased formation of functional capillaries on the resveratrol treated scaffolds after MI compared to MI + PCL.

Conclusion: In this study resveratrol used as a slow release topical therapy, with the help of a semi-synthetic scaffold support/delivery system, following MI. The functional improvement in cardiac function was observed probably due to the reestablishment of blood vessels and restoration of collagen extracellular matrix in cardiac ischemic scar tissue aided through the resveratrol.

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**P14. Developing a Blood Biomarker Model for Predicting Multiple Infection Episodes Following Blunt Trauma**


¹Massachusetts General Hospital/Harvard Medical School/Shriners Hospitals for Children-Boston, Boston, MA; ²Bern University Hospital, Bern, Switzerland; ³Massachusetts General Hospital/Shriners Hospitals for Children-Boston, Boston, MA; ⁴University of Massachusetts, Amherst, Amherst, MA; ⁵Massachusetts General Hospital, Boston, MA; ⁶Massachusetts General Hospital/Harvard Medical School, Boston, MA

**Objective:** To employ a machine learning approach for developing blood biomarkers predictive of multiple independent infection episodes (MIIE) following severe blunt trauma.

**Design:** Secondary retrospective analysis of the Host Response to Injury Study (“Glue Grant”) prospective cohort study.

**Setting:** Four level-one trauma centers in the US.

**Patients:** 140 adult (16 years or older) blunt trauma patients (excluding penetrating), with early leukocyte samples (within 48 hrs post-injury), who developed a first infection at least two days after sample collection, and who remained in the study (did not die or were discharged) for at least 10 days.

**Interventions:** None.

**Main Outcome Measures:** Patients who developed MIIE during the course of recovery (39 cases) versus those who did not (91 controls).

**Results:** We identified a panel of 6 transcriptomic probe sets that were highly predictive of MIIE, with Area Under Receiver Operating Characteristic Curve (AUROC) [95% CI] of 0.89 [0.83–0.95]. This logistic model significantly outperformed various models based on clinical severity scores, including Acute Physiologic Assessment and Chronic Health Evaluation (APACHE) II, with AUROC [95% CI] of 0.62 [0.521–0.72], Injury Severity Score (ISS), with 0.61 [0.51–0.71], and New Injury Severity Score (NISS), with 0.60 [0.50–0.70]. Gene Ontology analyses

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of up- and down-regulated genes comparing control and hypersuscep-
tible patients showed early alterations in various immune-related path-
ways, as expected.

**Conclusions:** Early blood biomarkers may be an effective tool for early
triage of blunt trauma patients and serve as immunomodulation targets in
the future. Given that clinical injury severity scores lacked the ability to
sufficiently predict infections outcomes in this cohort, developing tools
based on genomics may lead to the development of novel preventative
and therapeutic approaches against infections.
P15. **Accuracy of MELD-Na As a Predictor of Morbidity and Mortality in Cirrhotic Patients with Ascites Undergoing General Surgical Procedures**

*Nathan L. Maassel¹, *Matthew M. Fleming¹, *Jiajun Luo², *Yawei Zhang²³, Kevin Y. Pei¹

¹Yale, New Haven, CT; ²Section of Surgical Outcomes and Epidemiology, Department of Surgery, Yale School of Medicine, New Haven, CT; ³Department of Environmental Health Sciences, Yale School of Public Health, New Haven, CT

**Objective:** MELD-Na reportedly accounts for ascites in cirrhotic patients. This study determines whether the Model for End-Stage Liver Disease Sodium (MELD-Na) score accurately predicted morbidity and mortality in patients with ascites undergoing general surgery procedures.

**Design:** We analyzed the ACS NSQIP database (2005–2014) to examine the adjusted risk of morbidity and mortality of cirrhotic patients with and without ascites undergoing inguinal or ventral hernia repair, cholecystectomy, or lysis of adhesions for bowel obstruction. Patients were stratified by MELD-Na score and presence of ascites. Outcomes were compared between patients with and without ascites for each stratum using the low MELD-Na and no ascites group as a reference.

**Setting:** ACS NSQIP participating hospitals.

**Patients/Participants:** Adult patients with liver disease who underwent one of these common general surgery procedures.

**Interventions:** None.

**Main Outcome Measures:** Adjusted morbidity and mortality stratified by MELD-Na.

**Results:** A total of 30,391 patients were analyzed. Within each MELD-Na stratum, patients with ascites had an increased risk of complications when compared to the reference group (low MELD-Na and no ascites): low MELD-Na with ascites OR 4.33 (95% CI 1.96–9.59), moderate MELD-Na no ascites OR 1.70 (95% CI 1.52–1.9), moderate MELD-Na with ascites OR 3.69 (95% CI 2.49–5.46), high MELD-Na no ascites OR 3.51 (95% CI 3.07–4.01), high MELD-Na ascites OR 7.18 (95% CI 5.33–9.67). Similarly, mortality risk was increased in patients with ascites when compared to those without: moderate MELD-Na no ascites

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OR 3.55 (95% CI 2.22–5.67), moderate MELD-Na ascites OR 13.80 (95% CI 5.65–33.71), high MELD-Na no ascites OR 8.34 (95% CI 5.15–13.51), high MELD-Na ascites OR 43.97 (95% CI 23.76–81.39).

**Conclusions:** MELD-Na underestimates morbidity and mortality risk for general surgery patients with ascites.
Minimally Invasive Extrapericardial Placement of a Left-Ventricular Assist Device

*Muhammad Anwer¹,², Pramod Bonde³,⁴

¹Yale New Haven, Woodbride, CT; ²Yale New Haven Hospital, New Haven, CT; ³Yale New Haven, New Haven, CT; ⁴Yale New Haven Hospital, New Haven, CT

Introduction: Left ventricular assist devices (LVADs) involve intrapericardial placement of the outflow graft making their explantation challenging at the time of heart transplantation. Also, the extra volume and pressure of the intrapericardial outflow graft leads to deformation of the right ventricle. To facilitate explantation and prevent alterations in right ventricular hemodynamics, we routinely perform minimally invasive LVAD implantation with extrapericardial placement of the outflow graft.

Methods and Results: In 22 patients, following a 5cm long xiphisternal incision, a pocket is made in the preperitoneal plane. A 5cm anterolateral thoracotomy is performed directly over the apex of the left ventricle and the pericardium is divided in inverted T shaped fashion at LV apex. A right anterior mini thoracotomy in 2nd or 3rd intercostal space. Apical coring and myomectomy is performed, Teflon pledgeted Ethibond stitches are inserted in a transverse mattress fashion and LVAD is connected after sewing the ring of inflow cannula. A side-biting clamp is applied to the ascending aorta. An end to side anastomosis is performed under direct visualization. Finally, cardiopulmonary bypass is weaned off and LVAD support is initiated. Sixteen patients had prior cardiac surgical procedure performed. There were no conversions to median sternotomy. One patient needed RVAD. Blood product usage remained low no transfusion (n = 15), two packed cells (n = 5), three or more (n = 2). Average duration at the time of transplant to disect out the heart was 30 minutes.

Conclusion: Compared to conventional sternotomy, minimally invasive approach offers superior outcomes in terms of RV failure and blood transfusion. Extrapericardial placement facilitates minimizing adhesions around the graft and allowing easy sternal re-entry and intrapericardial dissection.
P17. **Sociodemographic Predictors of Inpatient Costs for Solid Organ Transplants**
Raymond A. Jean, *Alexander S. Chiu, Peter S. Yoo

*Yale School of Medicine, New Haven, CT*

**Objective:** To identify predictors associated with increased costs for liver (LT) and kidney (KT) transplants.

**Design:** Retrospective cohort.

**Setting:** Patients admitted across the United States between 2005 and 2014.

**Patients:** The Nationwide Inpatient Sample (NIS) was examined for adult patients receiving LT or KT.

**Interventions:** None.

**Main Outcome Measures:** We used multivariable linear models identify the effect of insurance and clinical predictors, on hospital costs.

**Results:** There were 155,608 (76.5%) KT and 47,673 (23.5%) LT selected during the study period. Mean hospital costs were $56,222 (± $1230) for KT and $118,768 (± $2762) for LT. Factors predictive for increased cost in KT included increased comorbidity (one +$6657 ± 663 and two or more +$22,916 ± 1258; both p < 0.0001), Medicaid (+$6044 ± 1385 vs private; p < 0.0001) or Medicare (+$5876 ± 542 vs private; p = 0.004), region in the Midwest ($8805 ± 2447; p = 0.0003) or West (+$6180 ± 2157; p = 0.004), and hospital bed size (medium +$11,403 ± 2120 and large $10,778 ± 1744; both p < 0.0001). In contrast, predictors for increased cost in LT included female sex (+$6692 ± 2121; p = 0.002), Medicaid (+$12,098 ± 3167; p = 0.0001) or Medicare (+$8115 ± 2546; p = 0.002).

**Conclusions:** For patients receiving LT or KT Medicare and Medicaid insurance, and care outside in regions other than the South, were associated with increased hospital costs. These results indicate that across abdominal transplant types, costs are consistently associated with nonclinical and hospital factors, potentially relating to delivery patterns and social determinants of health.

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P18. **Withdrawn**

P19. **The Geriatric Nutritional Risk Index Is a Powerful Predictor of Adverse Outcome in the Elderly Emergency Surgery Patient**


*Massachusetts General Hospital, Boston, MA*

**Objective:** To examine the effect of malnutrition, as measured by the Geriatric Nutritional Risk Index (GNRI), on postoperative outcomes in elderly emergency surgery (ES) patients.

**Design/Setting:** Multicenter retrospective 2007–2016 ACS-NSQIP cohort study.

**Patients:** All patients ≥65 years undergoing ES, as defined by ACS-NSQIP, and without missing height, weight, or preoperative albumin data were included. The GNRI was calculated as \[1.489 \times \text{albumin (g/L)} + [41.7 \times \text{weight/ ideal weight}].\] Patients were divided into four malnutrition groups: very severe (GNRI <70), severe (GNRI 70 to <82), moderate (GNRI 82 to <92), mild (GNRI 92–98) versus normal (GNRI >98).

**Main Outcome Measure(s):** Univariate then multivariable logistic regression models were created to study the relationship between malnutrition and 30-day postoperative mortality and complications. We adjusted for demographics, comorbidities, laboratory tests, and operative complexity.

**Results:** Out of 5,457,202 patients, a total of 82,725 were included: 18, 22, 19, and 7% with mild, moderate, severe and very severe malnutrition, respectively. As malnutrition worsened from mild to very severe, the risk of mortality and all postoperative complications incrementally and significantly increased [Figure 1, all p-values < 0.05]. For example, patients with very severe malnutrition had >3 folds increased mortality [OR 3.43 (3.15–3.74), and >2 folds increased respiratory failure (requiring ventilation for >48 hours) [OR 2.21 (2.03–2.41)]. GNRI predicted outcome significantly better than either albumin or body mass index.

*NESS Non-Members*
**Conclusion:** Malnutrition, measured by GNRI, is a powerful predictor of adverse outcome in the elderly ES patient and should be given great consideration in preoperative patient and family counseling.
Does BMI Predict Outcomes in Emergency General Surgery?

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¹Yale School of Medicine, Department of Surgery, New Haven, CT; ²Section of Surgical Outcomes and Epidemiology, Department of Surgery, Yale School of Medicine, New Haven, CT; ³Department of Environmental Health Sciences, Yale School of Public Health, New Haven, CT

Objective: To determine if Body Mass Index (BMI) impacts outcomes in the recently defined field of Emergency General Surgery.

Design: We performed a retrospective review of ACS-NSQIP (2010–2016) to calculate risk adjusted morbidity and mortality for the 7 most common emergency general surgery procedures as defined by the AAST: perforated ulcer, appendectomy, cholecystectomy, laparotomy, partial colectomy, small bowel resection, and lysis of adhesions.

Setting: ACS NSQIP participating hospitals.


Interventions (if any): None.

Main Outcome Measures: Adjusted morbidity and mortality stratified by BMI classification.

Results: There were 310,643 patients included for analysis. In general, the BMI ≥40 group had more comorbidities than other BMI strata. When analyzing the 7 procedures together, BMI <18.5 and BMI ≥40 had significantly elevated risk for postoperative complications (OR 1.21 95% CI 1.14–1.28 and OR 1.20 95% CI 1.15–1.24, respectively) while BMI <18.5 significantly elevated risk for reoperation (OR 1.49, 95% CI 1.15–1.93) and mortality (OR 1.65, 95% CI 1.65–1.66). Notably, elevated BMI was a risk for increased rates of complications when procedures were analyzed individually for BMI ≥40: perforated ulcer OR 2.18 (CI 1.58–3.01), appendectomy OR 1.54 (CI 1.31–1.80), cholecystectomy OR 1.21 (CI 1.20–1.21), laparotomy OR 1.97 (CI 1.59–2.44), colon resection OR 1.46 (CI 1.39–1.54), and small bowel resection OR 1.46 (CI 1.39–1.54).

* NESS Non-Members
Conclusions: The extremes of Body Mass Index are both associated with increased postoperative complications. Contrary to current literature, very high BMI may not be protective in patients undergoing emergency general surgery.
P21. KCC4/IGF1 Dysregulation: A Novel Signaling Hallmark of Non-Functional Adrenocortical Carcinomas

*Taylor C. Brown¹, *Norman G. Nicolson¹, *Adam Stenman², *Christofer C. Juhlin², *Courtney E. Gibson¹, Glenda G. Callender¹, Tobias Carling¹

¹Yale University School of Medicine, Department of Surgery, New Haven, CT; ²Department of Oncology-Pathology, Karolinska Institutet, Stockholm, Sweden

Objective: K-Cl co-transporter 4 (KCC4) dysregulation promotes tumor metastases and was recently implicated in fostering the aggressive behavior of adrenocortical carcinoma (ACC). A role for aberrant insulin growth factor (IGF) signaling, a hallmark of ACC, in mediating KCC4-induced dedifferentiation of ACC, has not been previously studied. Here, we investigate the potential complicity of KCC4 and IGF signaling in ACC.

Design: Retrospective and in vitro analyses.

Setting: Tertiary academic referral centers.

Patients or Other Participants: Thirty-three patients who underwent adrenalectomy for ACC.

Interventions: Real-time quantitative PCR determined IGF1 and IGF2 expression levels in tumor samples compared to normal adrenal tissue in 33 ACC tumors whose KCC4 expression has been previously determined. Tumor IGF expression levels were evaluated for correlation with KCC4 expression levels and tumor characteristics. In vitro studies determined the relationship of IGF signaling and KCC4 co-expression in the ACC cell line SW-13.

Main Outcome Measures: Tumor expression levels of IGF1 and IGF2, their association with KCC4 expression and tumor characteristics, and their potential role in KCC4 overexpression in vitro.

Results: Increased IGF1 expression was associated with KCC4 overexpression and non-functional and early stage tumors (p < 0.05). In contrast, IGF2 overexpression was associated with larger tumors (diameter, p = 0.07; weight, p < 0.05), but was not associated with increased KCC4 expression. In vitro treatment of SW-13 cells with recombinant IGFs did

* NESS Non-Members
not stimulate KCC4 expression while enforced overexpression of KCC4 resulted in a 4-fold increase in IGF1 expression without significantly impacting other IGF signaling components including IGF2.

**Conclusions:** Increased IGF1 stimulation is associated with KCC4 over-expression in non-functional, early stage ACCs, suggesting a targeted KCC4/IGF1 therapeutic opportunity for these tumors.
P22. The Risk of Delayed Adjuvant Chemotherapy with Immediate Breast Reconstruction

*Amulya C. Alapati, *Aaron Fleishman, Ted A. James
Beth Israel Deaconess Medical center, Boston, MA

Objective: The timely initiation of adjuvant chemotherapy (AC) is associated with a survival benefit in breast cancer, and has emerged as an important quality metric. Prior studies have identified immediate autologous reconstruction (IAR) as a significant risk factor leading to delay in AC. The purpose of this study was to evaluate demographic and clinical factors associated with delays in AC among patients undergoing mastectomy and IAR.

Design: Retrospective analysis of prospective national database.

Setting: Data were derived from de-identified National Cancer Data Base (NCDB) files. The NCDB is a joint project of the Commission on Cancer of the American College of Surgeons and the American Cancer Society.

Patients or Other Participants: Female patients with stage 1–3 breast cancer diagnosed between 2010–2015 undergoing IAR and AC. Initiation of AC beyond 90 days was defined as delayed.

Intervention(s): IAR.

Main Outcome Measure(s): Multivariable logistic regression was performed to investigate associations between delayed AC and clinical/demographic factors.

Results: Of 11,881 women undergoing IAR, 521 (4.39%) had delay in adjuvant chemotherapy. Unplanned re-admissions (OR 2.42), non-Hispanic black and Hispanic ethnicities (OR 2.08, 1.96), age 55–69 (OR 1.55), low-medium volume (OR 1.43), multiple co-morbidity (OR 1.40), and treatment at an academic facility (OR 1.27) were associated with delay in AC (p < 0.005). Unilateral vs. bilateral procedure, income level, level, insurance, and tumor characteristics had no impact of timing of AC.

Conclusions: Clinical and demographic factors associated with delay in AC following mastectomy and IAR were identified from a national cancer database. Given the impact of timeliness of systemic therapy on breast cancer survival, measures to identify and address “high risk” patients undergoing IAR may result in improved outcomes.

* NESS Non-Members
P23. **Transurethral Thulium Laser Prostatectomy in the Outpatient Setting: Benefits and Outcomes at a Single Center in the United States**


_University of Vermont, Burlington, VT_

**Introduction and Objectives:** Thulium laser prostatectomy is a versatile laser that allows for vaporization, vapo-enucleation and enucleation and morcellation of benign prostatic hyperplasia (BPH). In an effort to seek out procedures to avoid inpatient hospitalization while maintaining superior hemostasis, this study details the ongoing experience utilizing thulium laser vaporization in the outpatient setting.

**Methods:** Retrospective chart review of patients who underwent thulium laser vapo-enucleation between 2014 and 2018 was performed.

**Results:** 128 patients were included in the analysis. 11 patients were anticoagulated and 9 patients had concurrent cystolithopaxies performed. 25 patients had repeat procedures from prior TURPs or green light laser prostatectomies. Of the primary cases, the mean prostate size was 56 gm (range 15–167 gm). 121 (95%) patients were able to be discharged as outpatients the day of surgery. The mean preoperative AUA symptom scores, generally on maximal medical therapy, were 19.1 and 16.8 for primary and repeat, respectively. The mean AUA symptom scores were significantly reduced to 6.1 and 8.2 (p < 0.005 for both), respectively, at 3-month follow-up (128 pts) and further reduced to 5.1 and 6.0 (p < 0.005 for both), respectively, at 12-month follow-up (71 pts) and 6.0 (p < 0.0001) at 24 months (37 pts). Transient short-term stress incontinence occurred in 5 patients and resolved in all. 2 patients required a repeat resection and 1 patient had a bladder neck contracture.

**Conclusions:** Thulium laser vaporization of the prostate is a safe, effective and durable alternative for the treatment of BPH with results comparable to published traditional inpatient electrosurgical methods. Laser therapy offers an advantage by greatly reducing the need for hospitalization without compromising efficacy of traditional electrosurgical methods.

* NESS Non-Members
P24. Protection from Ischemic Injury in the Small Intestine Using Nutraceutical Nanoparticles in a Rat Model


¹Yale, New Haven, CT; ²University of Padua, Padua, Italy

Objective: In transplant medicine, small intestine is highly susceptible to ischemia. Studies have looked at abating small bowel ischemic injury and prolonging its viability so that grafts survive transplantation and remain functional. In this study, we demonstrate how calcium nutraceutical nanoparticles (15–40 nm) can protect from intestinal ischemic injury in a rat model through the activation of the calcium sensing receptor (CaSR).

Design: Proximal, middle and distal 10 cm small intestinal segments were harvested and perfused via ex-vivo intestinal perfusion. Control segments were perfused extraluminally with Ringer buffer with HEPES, pH 7.4, 300 mOsm, and intraluminally with FIT-C inulin, a marker of intestinal secretion/absorption and ischemic injury. Initial experimental group was additionally perfused with 100% N2 to induce ischemia, and subsequent experimental groups were additively perfused with increasing concentrations of calcium nanoparticles. FIT-C concentrations were compared between groups.

Setting: This study was conducted in a BSL-2 laboratory and appropriate animal facilities.

Patients: Male Sprague-Dawley rats.

Interventions: Perfusion of ischemic intestine with calcium nanoparticles.

Main Outcome Measures: Intestinal viability measured by FIT-C concentration.

Results: When we exposed the small intestine (proximal, middle and distal segments) to 100% N2, the intestine developed greater ischemic damage in comparison to small intestine perfused with normal HEPES (control segments) (p < 0.0001). In the same ischemic environment, the presence of 1, 2.5 and 5 mM of calcium nanoparticles provided protection from the ischemic damage (p < 0.0001).

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Conclusions: Given small intestine’s sensitivity to ischemia, prolonging graft viability can contribute to enhanced success of intestinal transplants. Our findings suggest that nutraceutical nanoparticles are a promising approach to ischemic injury protection in the small bowel.
P25. Assessing Cost-Effectiveness of Admission and Interval Imaging to Improve Outcome After Delayed Traumatic Intracranial Hemorrhage: a Decision-Analytical Model

*Norman G. Nicolson, Kevin Y. Pei

*Yale School of Medicine, Department of Surgery, New Haven, CT

**Objective:** Delayed intracranial hemorrhage (dICH) among patients on anticoagulation is a rare, but potentially lethal complication after blunt trauma. Although some guidelines recommend repeat imaging and an observation period, a recent study showed that these events may occur in only 1.3% of therapeutically anticoagulated trauma patients. We hypothesize that although individual patients may occasionally benefit from the practice, admitting for observation and repeat scan is not cost-effective.

**Design:** Cost-effectiveness analysis through a decision-analytical model.

**Setting:** Emergency department.

**Patients or Other Participants:** Patients aged 40–80, after a fall on anticoagulation, with normal initial head CT.

**Interventions:** Admission and interval imaging, versus discharge from the emergency department.

**Main Outcome Measures:** Expected costs (2017 US$) and quality-adjusted life-years (QALY).

**Results:** Under the default assumptions, the incremental cost of one QALY for admission was $282,147. Sensitivity analysis revealed a range of $66,978/QALY (if the dICH rate was 7.2%, the upper limit in the literature) to $13,215,421/QALY (if only 1% of discharged patients with major dICH requiring neurosurgical care died pre-hospital).

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**Conclusions:** For patients presenting to the emergency department after blunt trauma with initially normal cross-sectional brain imaging, admission for observation and repeat imaging is not cost-effective at the usual threshold of $100,000/QALY, even for anticoagulated patients. In an environment of scrutiny on high-cost/low-benefit interventions, these admissions are likely an avoidable source of medical resource utilization.
University of Massachusetts Medical School, Worcester, MA

Objective: We aim to characterize the changes in peripheral blood following intratumoral (IT) anti-PD-1 injection and assess its efficacy in stimulating specific T-Lymphocyte (TL) populations compared to intravenous (IV) anti-PD-1 injection.

Design: Randomized controlled trial.

Setting: Biosafety Level 2 (BSL-2) laboratory and animal facilities at an academic medical center.

Intervention: 34 NOD-scid IL2rgnull (NSG) mice engrafted with human hematopoietic stem cells (HSCs) had patient derived xenograft (PDX) melanoma tumors implanted subcutaneously. Once tumor volumes of 100 mm³ were achieved, mice were randomized to 1 of 3 study arms involving a single injection: IV anti-PD-1 at 10 mg/kg (n = 13), IT anti-PD-1 at 20 mg/kg (n = 13), or IT PBS solution (n = 8). Mice were sacrificed on days 6 and 12 post injection.

Main Outcome Measure: Peripheral blood, spleen, tumor, liver, kidney, and lung tissue specimens were obtained. Cell counts and proportions were reported for CD8+, CD4+, and effector memory T-Lymphocyte populations. Ten-color flow cytometry panels were used to identify these specific subpopulations.

Results: Proportion of TLs in peripheral blood was greatest in the IT group at days 6 (2.04% vs 1.10%) and 12 (10.6% vs 9.47%). Similar trends were observed for all TL subpopulations (Table 1). Expression of effector memory TLs increased from days 6 to 12 but was most robust following IT injection.

* NESS Non-Members
Table 1. Quantification of T-Lymphocyte Populations in Peripheral Blood

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<th>Cell Populations</th>
<th>Day 8 Post Anti-PD-1 Injection (n=12)</th>
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<tr>
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<td>IV (n=7)</td>
<td>IT (n=6)</td>
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<tr>
<td>B-Lymphocytes**</td>
<td>9686 (2.25)</td>
<td>3751 (1.04)</td>
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<tr>
<td>T-Lymphocytes**</td>
<td>5071 (1.19)</td>
<td>8744 (2.04)</td>
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<td>CD4****</td>
<td>2675 (0.52)</td>
<td>407 (1.19)</td>
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<td>Effector Memory</td>
<td>7 (0.26)</td>
<td>37 (0.91)</td>
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<tr>
<td>CD8***</td>
<td>1637 (0.38)</td>
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<tr>
<td>Effector Memory</td>
<td>2 (0.11)</td>
<td>6 (0.41)</td>
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</table>

*All results are n (%)
**IV = intravenous anti-PD-1 injection; IT = intratumoral anti-PD-1 injection
***B-Lymphocytes and T-Lymphocytes represented as n (%) of total cells in peripheral blood
****CD4+ and CD8+ cells represented as n (%) of T-Lymphocytes

Conclusion: IT injection of anti-PD-1 appeared to produce a different profile of lymphocyte effector memory cells than IV injection of anti-PD-1. Further investigation of the implications of these findings and the potential of immune checkpoint inhibitors as neoadjuvant cancer therapy is warranted.
P27. Probing the Portal System As the Source of Inflammation in An Acute Systemic Burn Model
*Fatemeh Adiliaghdam, *Florian Kuehn, *Laurence Rahme, Richard Hodin
Massachusetts General Hospital, Boston, MA

Objective: Our previous data has shown that in mice subjected to a severe cutaneous burn, there is an impaired gut barrier leading to a systemic inflammatory response syndrome. The portal system sits at the interface between the host and the inflammatory mediators in the gut. Identifying the mediators that cross the gut barrier under conditions of barrier dysfunction could lead to novel therapeutic targets to prevent gut-derived sepsis.

Design and Intervention: Mice were subjected to a 30% back burn ± oral supplementation with the brush border enzyme intestinal alkaline phosphatase (IAP), given its role in maintaining the gut barrier. Mouse portal vein serum was removed and tested in an ex-vivo model by application to primary mouse macrophages.

Main Outcome Measures: Inflammatory gene expression was assessed using qPCR. Mass spectrometry was used on the portal serum to identify protein mediators that cross the gut barrier in response to the burn insult.

Results: Compared to sham controls, the portal serum from burned-mice contained more LPS (10.4 vs 4.2EU/L, p < 0.01) and had a much higher (3.3-fold, p < 0.001) pro-inflammatory impact on the macrophages. This effect was largely preserved even after Polymixin-B incubation (LPS depletion), suggesting the presence of non-LPS mediators in portal serum. IAP markedly decreased the portal LPS (approx. 40% decrease, p < 0.05) and blocked the pro-inflammatory effect of portal serum on the target cells (1.8-fold, p < 0.01). A proteomic screen identified two mouse-derived proteins (Ig-kappa light chain and enolase) and two bacterially-derived proteins (Flagellin Listeria monocytogenes and Flagellar P-ring protein) that were markedly enriched in the burn compared to sham and burn+IAP mice.

Conclusions: Portal vein is highly enriched in pro-inflammatory mediators following cutaneous burn insult. These molecules are derived from both the bacteria and the host tissues. Oral IAP therapy may represent a novel approach to promoting gut barrier function and blocking specific mediators from entering the portal system, thus preventing gut-induced systemic inflammation.

* NESS Non-Members
P28. Increasing Incidence of Stage IV Breast Cancer Since 2002

*Danielle R. Heller$^{1,2}$, *Brigid K. Killelea$^{1,3}$, *Christos Hatzis$^{1,3}$, *Lajos Pusztai$^{1,3}$, Donald R. Lannin$^{1,3}$

$^1$Yale University School of Medicine, New Haven, CT; $^2$Yale-New Haven Hospital Department of Surgery, New Haven, CT; $^3$Yale Cancer Center, New Haven, CT

**Objective:** Despite emphasis on screening and early detection, a subpopulation of breast cancer (BC) patients presents with Stage IV disease at diagnosis. This study’s purpose was to determine how population-based incidence of Stage IV has been changing over a 40-year period.

**Design:** Retrospective analysis of nationwide Stage IV cases from 1974–2014. Analyses used SEER*Stat and Joinpoint Regression.

**Setting:** SEER registries 9 and 18 (November 2016 submission).

**Patients:** Females ≥18 years old with de novo Stage IV BC.

**Interventions:** N/A.

**Outcome Measures:** Stage IV annual percent change (APC), stratified by age and race.

**Results:** Based on SEER-9, overall incidence of Stage IV per 100,000 women was stable at approximately 7.5 cases from 1974–2002 and increased to about 9.0 cases between 2002–2014, representing an APC of 1.61 (95% CI 1.1–2.1). Stable incidence during 1974–2002 masked a small increase for women <50 years (APC 0.77, CI 0.3–1.2) and decrease for women >50 years (APC –0.20, CI –0.4–0.0). After 2002, however, incidence in both age groups increased significantly (APC 2.71, CI 1.5–3.9 for <50 and 1.35, CI 0.8–1.9 for >50). In the larger SEER-18 registry, rate per 100,000 increased from 7.4 in 2002 to 9.9 in 2014, representing an APC of 2.43 (CI 2.0–2.9). This was similar for white and black women (2.48, CI 2.0–3.0 and 2.28, CI 1.7–2.8, respectively) and slightly higher for Asian women (3.36, CI 2.5–4.2).

* NESS Non-Members
Conclusions: After remaining stable for nearly 30 years, there has been an abrupt and striking increase in Stage IV BC incidence after 2002. This increase is unexpected and warrants explanation.
Correlating Screening and Ductal Carcinoma in Situ Incidence Rates in the U.S.

*Biqi Zhang1, *Tawakalitu S. Oseni2, Suzanne B. Coopey2; *Michele A. Gadd2, *Kevin S. Hughes2, *David C. Chang2

1Harvard Medical School, Boston, MA; 2Massachusetts General Hospital, Boston, MA

Objective: The rising incidence of DCIS since widespread mammography screening has been documented in the general US population. Patterns across women of different age and racial/ethnic groups have not been well described.

Design: A retrospective cohort study of the Surveillance, Epidemiology, and End Results (SEER) dataset from 1990–2014 was performed. SEER data were linked to screening information from the Centers for Disease Control and Prevention.

Setting: U.S. hospitals.

Participants: All women aged ≥40 years and diagnosed with DCIS were included. Age group (40–49, 50–64, ≥65) and race/ethnicity—mutually exclusive categories of non-Hispanic white (white), non-Hispanic black (black), and Hispanic—were determined.

Interventions: None.

Main Outcome Measure(s): Annual incidence rates were calculated and compared by age and race/ethnicity. The relationship between incidence and screening rates was tested after adjusting for patient characteristics.

Results: 201,574 women aged ≥40 years with DCIS were identified. Screening compliance and incidence rates increased across all ages and ethnicities (Figure 1). Between 1990 and 2014, DCIS incidence increased from 12.5 to 31.8 per 100,000 individuals for women aged >40 years, representing a 254% increase (269% for 40–49, 243% for 50–64, 224% for ≥65). On adjusted analysis, incidence was found to increase by 0.9 per 100,000 individuals (95% confidence interval 0.7–1.0) with each additional percent of women receiving a mammogram.
Figure 1. Rates of mammography screening and incidence of DCIS among US women aged ≥40 years between 1990-2014, by race/ethnicity

Abbreviations: DCIS – ductal carcinoma in situ, white – non-Hispanic white, black – non-Hispanic black
The Surveillance, Epidemiology, and End Results Program (SEER) reports population counts with detailed race/ethnicity information only for years 1992 to 2014. Incidence rates for 1990 and 1991 were calculated using population-level data from 1992.

Conclusion: Between 1990 and 2014, DCIS incidence rose significantly across all ethnic groups for women aged ≥40 years, with the greatest magnitude of increase seen for women aged 40–49 years. Incidence was significantly correlated with increased mammography screening.
P30. Adrenocortical Suicide Gene CYP4B1 Promotes Adrenocortical Carcinoma Cell Death by Dysregulating the TNF Signaling Pathway

*Norman G. Nicolson, Glenda G. Callender,
*Courtney E. Gibson, *Reju Korah, Tobias Carling

Yale School of Medicine, Department of Surgery, New Haven, CT

**Objective:** Re-expression of cytochrome P450 4B1 (CYP4B1) induces loss of viability in adrenocortical carcinoma (ACC) cells. The mechanism of CYP4B1-promoted cell death remains elusive, limiting its utility as a therapeutic target. Using targeted gene-expression arrays, we sought to isolate the cell-death pathways undermined by CYP4B1 suppression in ACC.

**Design:** Gene expression analyses of patient adrenocortical tumor tissues and established ACC cell lines.

**Setting:** Tertiary academic center.

**Patients or Other Participants:** Ten ACCs, twelve adrenocortical adenomas (ACAs), and two ACC cell lines.

**Interventions:** Established ACC cell lines were manipulated for transient ectopic expression of CYP4B1 gene. The CYP4B1-transfected cells were non-viable but were subjected to gene expression arrays to identify components of the cell-death pathways involved. The candidate genes were validated in tumor and normal adrenal tissues using quantitative PCR.

**Main Outcome Measures:** Gene expression profiling of cell-death pathways in ACC.

**Results:** ACC cells undergoing loss of viability consequent to CYP4B1 re-expression showed upregulation of TNF-alpha signaling receptor TNFRSF1A and multiple other activators of apoptosis including BAD, BIK, and the BCL2 antagonist BAX. The gene expression profiles of each cell line were distinct, likely reflecting different pathways of cell death at play. Expression analysis of selected TNF-α candidate genes in patient samples revealed reduced expression of TNFRSF1A in ACC relative to ACA (p = 0.047), while FADD was over-expressed in both ACA and ACC (p = 0.03 and 0.002 respectively) relative to normal adrenal.

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* NESS Non-Members
Conclusions: Although ACCs exhibit loss of \textit{CYP4B1} expression, the mechanism through which suppression of this suicide gene might contribute to tumorigenesis has not been described. Our study suggests dysregulation of TNF-alpha signaling as a potential mechanism of \textit{CYP4B1}-suicide signaling in ACC.
P31. Readmission Risk After Operative Management of Empyema
Raymond A. Jean¹, *Alexander S. Chiu¹, *Daniel J. Boffa¹, Anthony W. Kim², *Frank C. Detterbeck¹, *Justin D. Blasberg¹
¹Yale School of Medicine, New Haven, CT; ²Keck School of Medicine at USC, Los Angeles, CA

Objective: To investigate the impact of operative management for pleural empyema in a large national dataset.

Design: Retrospective cohort.


Patients: The Nationwide Readmissions Database (NRD) was examined for patients with a primary diagnosis of empyema receiving primary operative or nonoperative management.

Interventions: None.

Main Outcome Measures: Patients surviving were followed for non-elective readmission during the 90-day period after discharge.

Results: A total of 5,994 discharges for empyema were identified during the study period, of which 2,482 (41.4%) were managed operatively and 3,512 (58.6%) were managed non-operatively. Non-operative patients were older (mean age 62.7 vs 56.5 years, \( p < 0.0001 \)) and more frequently had 2 or more comorbidities (46.9% vs 28.9%, \( p < 0.0001 \)) than operative patients. Non-operative discharges had a mean length of stay of 7.9 days, in comparison to 10.3 days for operative discharges (\( p < 0.0001 \)). Overall, 24.6% of non-operative patients were readmitted urgently or emergently within 90-days, in comparison to 14.1% of operative patients (\( p < 0.0001 \)). Although operative hospitalizations were more costly than non-operative (non-operative $15,649 vs operative $25,361, \( p < 0.0001 \)), readmissions after an operative admission were significantly less costly (non-operative $18,395 vs operative $17,358, \( p = 0.003 \)).

Conclusions: Patients managed operatively for empyema had a significantly lower rate of non-elective readmission during the 90-day period after index hospitalization. Although operative management was approximately $10,000 more costly during the index hospitalization, readmitted patients had significantly less costly readmissions.

* NESS Non-Members
P32. Early Diagnosis of Hepatic Artery Thrombosis (HAT) Post Liver Transplant Prevents Graft Loss
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*Bejon Maneckshana, *Yong Kwon
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Hepatic artery thrombosis (HAT) post liver transplant has a major impact on graft and patient survival. Early revascularization has shown to result in graft salvage. We perform a duplex ultrasound (dUS) within six hours after transplant. US that show no flow in the artery result in an immediate reoperation and revascularization. US with poor flow are repeated within 6–12 hours. We reviewed charts on all patients transplanted between Jan 2012 and March noting time of initial US, incidence of return to OR for HAT and late outcome. We reviewed subsequent imaging studies to determine if an early dUS missed late HAT. There were 68 patients; all had dUS within 6 hours post liver transplant. Three patients developed HAT. One patient had no flow on initial US and underwent revascularization. A second patient poor flow, follow up within 12 hours, showed no flow and he too underwent immediate revascularization. Both have normal graft function and no biliary complications at 1517 and 1565 days respectively. The third patient had HAT in the setting of PNF and required retransplant for PNF despite revascularization. An additional patient had poor arterial flow, at reoperation we identified a splenic artery steal, the splenic artery was clipped with no subsequent HAT. 85% underwent subsequent imaging studies, with an average of 3.3 studies (range 0–10), at 302 days post transplant (range 0–1300) days. There was no patient with an initial normal 6 hour dUS that developed late HAT. HAT is a technical complication that occurs early after transplant. In the absence of other reasons of early graft dysfunction, such as PNF, early identification and immediate revascularization can result in 100 percent graft salvage.

* NESS Non-Members
P33. Opioid Prescribing Practices and Patient Use in Minimally Invasive Surgery

*Danielle T. Friedman, *Saber Ghiassi, *Matthew Hubbard, Andrew J. Duffy

Yale University, New Haven, CT

**Objective:** Compare opioid prescribing practice for minimally invasive surgical procedures with self-reported patient use and pain control satisfaction.

**Design:** Survey.

**Setting:** University hospital; ambulatory and short-stay surgery.

**Patients:** All patients at initial postoperative visit were eligible. 35 declined or excluded for inpatient stay over 3 days. 150 patients were analyzed for 4 procedures: laparoscopic cholecystectomy (LC; n = 47), laparoscopic inguinal hernia repair (LIHR; n = 44), laparoscopic ventral hernia repair (LVHR; n = 19), and laparoscopic paraesophageal hernia repair (LPEH; n = 41). Overall, 53% female, average age of 57 years (range 20–89). 21.0% minority. 8.0% had active preoperative narcotic prescriptions. 5 patients (3.3%) declined opioid prescription (1 with active baseline prescription).

**Intervention:** Survey administered at initial postoperative office visit.

**Main Outcome Measures:** Number of pills prescribed (verified number dispensed); proportion used; duration of opioid use; satisfaction with postoperative pain control; non-narcotic analgesic use.

**Results:** 19 ± 9 pills dispensed for LC, 3.2 days of use; 23 ± 10 pills for LIHR, 2.7 days; 31 ± 10 pills for LVHR, 4.6 days; 27 ± 11 pills for LPEH, 3.7 days. 52–72% reported retaining more than half or all of their opioids at the two-week visit (Figure). 75% utilized non-narcotic analgesics. Those patients showed a trend toward more adequate pain control (OR 1.31, 95% CI 0.47–3.6). Those on preoperative narcotics were significantly more likely to report inadequate pain control (OR 4.36, 95% CI 1.2–15.8). The average number of pills prescribed was higher in those with inadequate pain control (29 versus 23 pills, p = 0.04).

**Conclusions:** Opioid analgesics were overprescribed for the majority of our patients. More medication did not correlate with adequate pain control. We are using these data to standardize procedure-specific guidelines for opiate prescriptions in our practice.

* NESS Non-Members

*William O’Brien, *Kalpana Gupta, Kamal M.F. Itani

VA Boston Healthcare System, Boston, MA

**Objective:** Infection after surgery is a serious complication associated with excess morbidity and cost. Staphylococcus aureus accounts for a large proportion of these infections. Our objectives are to assess S. aureus infection incidence one year postoperatively, identify risk factors for infection, and calculate the association between multiple site infections.

**Design:** Retrospective database study of non-cardiac surgeries in the Veterans Health Administration. Logistic regressions estimated factors associated with 1-year infection.

**Setting:** VHA medical centers.

**Patients:** Veterans undergoing major surgery (n = 740,419) during 2008–2015.

**Interventions:** None.

**Main Outcome Measures:** Incidence of S. aureus infection (MRSA or MSSA), as well as other organisms 1-year postoperatively. 30-day infection was defined using the VASQIP chart review and a positive culture. Infections beyond 30 days were defined as a positive culture combined with antibiotic treatment.

**Results:** S. aureus infection incidence was 2.3%. MRSA incidence was 0.9%, MSSA 1.5%, Staph. non-aureus 1.2%, and other bacteria 6.0%. Rates decreased from 2008 to 2015 (S. aureus 3.0% to 2.0%; MRSA 1.0% to 0.8%; MSSA 2.1% to 1.3%; other Staph. 1.6% to 1.0%; other organism 6.8% to 5.6%). Factors associated with increased infection risk were ASA class >2, diabetes, COPD, smoking, male sex, and surgery RVU >10. Incidence of 30-day urinary tract infection with any bacteria was 3.4% among those who also had a surgical site infection (SSI), versus 0.8% among those who had no SSI; bloodstream infections were 7.6% v. 0.7%; and pneumonia 3.1% v. 0.3% (all p < 0.001).

**Conclusions:** Postoperative S. aureus infection has decreased over time. MRSA incidence decreased relatively less than MSSA. S. aureus infection is associated with patient characteristics and surgery complexity. SSIs are associated with higher risk of other-site infections.

* * NESS Non-Members
P35. Do Trauma Severity Scores Successfully Predict Hypersusceptibility to Infections in Trauma Patients?
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Objective: Determine whether commonly employed injury severity scores can successfully predict hypersusceptibility to multiple independent infection episodes (MIIEs) in trauma patients.

Design: Secondary retrospective analysis of data from the “Infection and the host response to injury” (“Glue Grant”) prospective longitudinal cohort study. Multivariate logistic regression was performed to measure the odds ratio of five commonly employed trauma severity scores [Denver, Marshall, Acute Physiology and Chronic Health Evaluation II (APACHE II), Injury Severity Score (ISS) and New Injury Severity Score (NISS)] in predicting hypersusceptibility to MIIEs. The latter was defined as 2 or more independent infection episodes during the recovery period.

Setting: Four Level 1 trauma centers in the United States.

Patients: 1665 trauma patients older than 16 years.

Interventions: None.

Main Outcome Measures: The correlation between trauma severity scores and hypersusceptibility to MIIEs.

Results: 20.8% of the population was found to be hypersusceptible to MIIEs. Denver and Marshall scores were highly predictive of the MIIE status. For every unit increase of either the Denver or the Marshall score, there was a 15% increase in the odds of MIIEs occurrence. APACHE II, ISS and NISS were not independent predictors of MIIEs.

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Conclusions: Denver and Marshall scores can reliably predict which trauma patients are prone to multiple independent infections during their hospital stay, before any signs of infection become apparent. Early identification of such individuals would potentially allow rapid, personalized, preventative measures, thus improving patient outcomes and reducing healthcare costs.
**P36.** Association of Alcohol Intoxication with Better Outcomes and Relation with Hypothermia After Traumatic Brain Injury Depends on Differences in Patient and Trauma Characteristics


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**Objective:** Based on promising results from animal research, many clinical studies have investigated the effect of elevated serum alcohol levels (ESAL) on mortality and morbidity in patients with moderate to severe traumatic brain injury (TBI). However, the exact effect of ESAL on TBI remains controversial. This study hypothesized that ESAL is associated with better outcomes. Additionally, hypothermia has consistently demonstrated neuroprotective effects in animal studies. Therefore, low body temperature was investigated as a potentially related factor.

**Design:** Retrospective observational cohort study.

**Setting:** Tertiary referral, trauma level I, teaching hospital.

**Patients:** All admitted adult (≥18) patients with moderate to severe TBI (head AIS ≥2) from 2011–2016.

**Main Outcome Measures:** In-hospital mortality.

**Results:** Of the 2965 included TBI patients, 742 (25%) were alcohol intoxicated at time of injury. Intoxicated patients were younger and a higher proportion received neurosurgical intervention. ESAL was univariably associated with lower in-hospital mortality (OR 0.50; 95% CI 0.37–0.66). After adjustment for potential confounding factors, no independent association was found between ESAL and chances of survival of TBI (OR 0.86; 95% CI 0.53–1.40). Low body temperature was associated with the highest ESAL group, but no relation with better outcomes was identified. Lower body temperature was independently associated with worse mortality rates for polytrauma patients.
Conclusions: Alcohol intoxication at time of injury does not have an beneficiary effect on in-hospital mortality after TBI. The influence of alcohol on mortality might be attributable to differences in patient, injury and trauma characteristics, although no relation with alcohol, low body temperature and mortality was identified.
P37. An Assessment of Fine Surgical Knot Tying

*Robert Cortez

Brown University/Rhode Island Hospital, Providence, RI

Objective: Operating room simulation exercises have been well established as an effective means of improving confidence, task engagement, and learning retention among surgical residents. We have established a cost-effective model and scoring system assessing resident skills to tie secure surgical knots with minimal tension.

Design: A grid divided into segments was placed underlying an aluminum can. Trainees tie 20 surgical square knots measuring time and length. Movement of the can outside the grid served as a scoring penalty. Recorded were time, length of the 20 knots, and number of segments. A score was developed to identify a progression of skills with PGY level. All outcomes were compared between classes using ANOVA.

Setting: Brown University/Rhode Island Hospital Department of Surgery.

Participants: Surgical residents (PGY1-PGY5) and participating attending surgeons employed by Rhode Island Hospital.

Results: Knot length and exposed segments showed trends of improved scores with ascending PGY level. Only average time attained statistical significance. Overall scores improved with PGY level:

<table>
<thead>
<tr>
<th></th>
<th>PGY1 (N = 9)</th>
<th>PGY2 (N = 3)</th>
<th>PGY3 (N = 6)</th>
<th>PGY4 (N = 3)</th>
<th>PGY5 (N = 3)</th>
<th>ATTENDING (N = 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPOSITE</td>
<td>100.5</td>
<td>116.4</td>
<td>152.7</td>
<td>138.1</td>
<td>169.9</td>
<td>162.8</td>
</tr>
</tbody>
</table>

Composite scores significantly improved when comparing PGY1 to PGY3, PGY5, and Attending surgeons (p = 0.016, 0.011, and 0.011, respectively). Time significantly improved when comparing PGY1 to PGY3 and Attending surgeons (77 vs. 50 and 47 seconds, p = 0.019 and 0.022 respectively). Composite scores were not significantly different above PGY3.

Conclusions: A low fidelity, high impact knot tying model has been developed to assess the ability to securely tie surgical knots while minimizing tension, with linear increases in scores that appear to plateau at the PGY3 level.

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P38. Predictors of Delay to Venous Thromboembolism Prophylaxis in Patients with Traumatic Brain Injury: an Analysis of the Trauma Quality Improvement Program (TQIP)

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Objective: Early (<48 hours) administration of venous thromboembolism prophylaxis in moderate or severe traumatic brain injury (TBI) appears safe and is recommended. We sought to determine what factors predict delayed venous thromboembolism prophylaxis (VTEP) administration in patients suffering TBI.

Design: We performed a retrospective review of the Trauma Quality Improvement Program (2013–2016) to identify patient and hospital characteristics associated with delayed VTEP (>72 hours after admission). GCS was stratified into severe (≤8), moderate (9–12), and mild (13–15) TBI and early prophylaxis (<48 hours) was used as a reference group. Multivariate logistic regression was used to determine factors correlated with delayed VTEP.

Setting: TQIP participating hospitals.

Patients or Other Participants: Patients suffering TBI.

Interventions: None.

Main Outcome Measures: predictors of delayed VTEP.

Results: 154,781 patients were included for analysis. Patients in the moderate (OR 2.76, 95% CI 2.60–2.92) and severe (OR 1.86, 95% CI 1.76–1.98) TBI groups were at significantly increased risk for delayed VTEP. Male gender (OR 1.20, 95% CI 1.17–1.24), African American (OR 1.04, 95% CI 1.00–1.08) and Hispanic race (OR 1.07, 95% CI 1.02–1.11), surgery (OR 1.44, 95% CI 1.32–1.57) or angiography (OR 2.24, 95% CI 2.03–2.47) for hemorrhage control, and presence of an intracranial pressure monitor (OR 4.66, 95% CI 4.36–4.97) predicted delayed VTEP. University teaching status and ACS level II/III demonstrated decreased rates of delayed VTEP (OR 0.80, 95% CI 0.76–0.84

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and OR 0.88, 95% CI 0.85–0.92, respectively). Rates of deep venous thrombosis (DVT) are significantly elevated in the delayed VTEP group (OR 5.39, 95% CI 5.00–5.82).

**Conclusions:** Many patients suffering TBI are receiving delayed VTEP. Patients suffering moderate and severe TBI are at increased risk of delayed VTEP and increased rates of DVT formation.
P39. **Predicting Workload and Stress on Academic Surgical Services**  
*Lane Curran¹, *Brittany Misercola², David Clark²,  
*Julianne Ontengco², James Whiting²  
¹Albany Medical College, Albany, NY; ²Maine Medical Center, Portland, ME

**Objective:** Quantify, relate, and predict workload and personal stress for residents (RES) and advanced practice providers (APP) staffing surgical services.

**Design:** Prospective cohort with collection of daily administrative, electronic medical record (EMR), and paging data, and a validated survey.

**Setting:** Trauma (T) and Vascular (V) surgical services at a New England teaching hospital.

**Participants:** 22 RES and 12 APP working weekdays over 10 months.

**Interventions:** None.

**Main Outcome Measure:** Perceived stress measured by daily modified NASA Task Load Index (NASA-TLX), consisting of three questions relating to temporal demands, mental demands, and frustration.

**Results:** Multiple linear regression models demonstrated that perceived stress measured by NASA-TLX was positively associated with RES vs APP, work hours, orders written, team pages received, and team discharges; NASA-TLX was negatively associated with years of experience, number of APP on team, number of RES on team, and later vs earlier day of week. The strength of these predictors was stronger for APP than for RES. Multivariate models showed no significant independent associations between NASA-TLX and age, sex, time in OR, team census, team admissions, or service (T vs. V).

Technical challenges to data collection from each source had to be overcome; daily survey response rates were >50% for the first two months, decreasing thereafter. For census, admissions, notes written, and pages received (especially for APP), T exceeded V; for OR time and orders written, V exceeded T. Work hours (first EMR log-in to last log-out) were similar for T and V.

**Conclusions:** Objective data can quantify workload and predict perceived stress, especially for APP, and may be used for planning or evaluation of staffing resource distribution among academic surgical services.

* NESS Non-Members
P40.  
**Role of Novel Immunotherapy in Recurrent Thick and Ultra-Thick Melanoma**

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**Objective:** Thick (≥4 mm) melanomas are high-risk for disease progression and failure of surgical monotherapy. We investigated outcomes of advanced melanomas and influence of novel immunotherapies.

**Design:** Retrospective review of prospectively-maintained database.

**Setting:** Academic tertiary-care center.

**Patients:** Adults who underwent wide local excision of thick melanoma, June 2005 to December 2016.

**Interventions:** Excision, sentinel lymph node biopsy (SLNB), immunotherapy.

**Main Outcome Measures:** Disease progression, response to immunotherapy.

**Results:** 103 of 1714 (6%) patients were diagnosed with thick melanoma (≥4 mm), of which 41 (39.8%) had an ultra-thick lesion (≥8 mm, range 4–39 mm). There was no significant difference between thick and ultra-thick lesions in regard to ulceration, mitotic rate, lymphovascular invasion, or performance or positivity of either SLNB or lymphadenectomy. Margins of excision were ≥2 cm in 92.2% of patients. Disease progression or recurrence were identified in 40 patients overall (38.8%). Multivariate analysis determined that progression/recurrence were independently associated with thickness ≥8 mm (OR 4.3) and +SLNB (OR 4.8) with local recurrence largely due to intransit disease. Eight patients with recurrence (5 locoregional and 3 distant) received immunotherapy. Median time to recurrence was 163 days. There was no significant difference in type of- or time to- recurrence in patients with +SLNB. High-risk features were present in all patients. Patients received ipilimumab, pembrolizumab, or combination ipilimumab-nivolumab. Median duration of therapy was 258 days. Two patients (25%) had disease progression on immunotherapy with a median time to progression of 51 days.

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**Conclusions:** Thick melanoma disease progression was independently associated with ultra-thick lesions and positive SLNB. Although initial wide local excision provides durable local control, distant and regional progression is common. Immunotherapy may enhance the therapeutic benefits for these patients.
P41. Bowel Function After Oncologic Resection for Colon Cancer: The Colon Does Not Matter
Dartmouth Hitchcock, Lebanon, NH

**Objective:** The objective is to evaluate the effect of elective oncologic resection for colon neoplasms on bowel function patient reported outcomes (PRO). Null hypothesis: Elective oncologic resection for colon neoplasm has no effect on bowel function PRO.

**Design:** Prospective observational study.

**Setting:** Academic, tertiary referral center.

**Patients:** Age ≥18 with new diagnosis of non-metastatic colon neoplasm from 2016–2018 undergoing elective oncologic resection with primary anastomosis.

**Interventions:** COREFO (COloREctal Functional Outcome Questionnaire) completion at baseline, postoperative follow-up, and any subsequent follow-up. Scale: 0 to 100. Higher score indicates worse function. Score >15 indicates symptomatology.

**Main Outcome Measures:** Mean Total COREFO score and domain scores (Frequency, Incontinence, Stool-Related Aspects, Social Impact, and Need for Medication). Paired t-test.

**Results:** 54 patients included. 26 (48%) women. Mean (SD) age: 62 (15) years. 30 right-sided (proximal to splenic flexure) and 24 left-sided colon neoplasms. Minimally-invasive resection in 52 (96%). Stage distribution: 0–11, I–13, II–16, III–14. Median (IQR) time between baseline and postoperative questionnaires: 55 (49–69) days. Mean frequency score increased following resection (Baseline: 10, Postoperative: 16; p = 0.01). No difference in Total COREFO score or any other domain from baseline to postoperative follow-up. 11 had subsequent follow-up. Median (IQR) time between baseline and subsequent follow-up questionnaires: 266 (205–306) days. No difference in total score or any domain from baseline to subsequent follow-up.

**Conclusions:** Global bowel function and most bowel function PRO do not change following elective oncologic resection for colon neoplasms. Bowel movement frequency increases in the postoperative period but returns to baseline within a year.

* NESS Non-Members
P42. When Not Winning Means Losing: Underrepresentation of Women Surgeons in Recognition Awards at a Single Institution


Brigham and Women’s Hospital, Boston, MA

Objective: Awards are frequently cited as external markers of professional achievement that are instrumental in career advancement. The aim of this study was to characterize the gender distribution of surgeons and trainees who received department awards.

Design: Descriptive analysis of recipients of six surgical department awards (four resident and two faculty awards) from 1990 through 2017.

Setting: A single high volume teaching hospital.

Participants: All surgical faculty and PGY-3, PGY-4, and chief residents.

Main Outcome Measures: Total numbers and percentages of male versus female surgical trainees and faculty members who received a department award since 1990.

Results: From 1990–2017, no women (0%) were chosen for the award recognizing a “faculty member who continues the distinguished tradition of excellence in the guidance, counsel, and teaching of senior surgical residents.” Only 2 women (8%) were chosen for a faculty award recognizing a “master surgeon and inspiring teacher.” Similarly, for trainees, only 1 woman (4%) was chosen for an award recognizing “the senior resident who best exemplifies excellence, uncompromising loyalty, and conscientious teaching.” Interestingly, all 3 of these awards were chosen by residents and demonstrated significant underrepresentation of women, despite the substantial number of both female surgical residents (currently 47%) and faculty members (currently 29%) in the department. In contrast, resident awards chosen by faculty and medical students were more proportionately distributed with 7/16 (44%) female recipients of a PGY-3 award, 4/11 (36%) female recipients of a PGY-4 award, and 3/18 (17%) female recipients of a PGY-5 teaching award.

Conclusions: Women surgeons and trainees are underrepresented in department recognition awards, especially when selected by trainees. These findings may represent implicit bias and warrant educational interventions.

* NESS Non-Members
P43. **Opioid Requirements After Bariatric Surgery**  
*Deanna Palenzuela¹, *Karan Chhabra², *Robert Matthews²,  
*Jason Pradarelli², Ali Tavakkoli²  
¹Harvard Medical School, Boston, MA; ²Brigham and Women’s Hospital, Boston, MA

**Objective:** To investigate typical opioid requirements and predictors of opioid use after laparoscopic bariatric surgery.

**Design:** Retrospective cohort study. Postoperative narcotic use was queried prospectively via telephone call on approximately POD7. Additional information including postoperative complications, amount of opioid prescribed, and comorbidities were queried via retrospective review. Both the electronic health record and MBSQIP data file were used. Univariate analyses were performed in SPSS.

**Setting:** Academic tertiary care hospital and affiliated community hospitals.

**Patients:** All patients who underwent laparoscopic bariatric surgery between December 2016–March 2018 (N = 323), specifically Roux-en-Y gastric bypass (RYGB), sleeve gastrectomy, and “revisional operations”: sleeve revision to RYGB, gastric band revision/removal and RYGB revision.

**Main Outcome Measure:** Opioid requirement after discharge from bariatric surgery based on patient reported number of opioid doses (oxycodeone 5 mg or hydromorphone 2 mg) taken by POD7.

**Results:** In the unadjusted analysis, mean opioid prescription was 14.9 doses (95% CI 14.1, 15.7). Overall mean number of opioid doses taken after discharge was 3.84 (3.3, 4.4). The mean opioid requirement after sleeve gastrectomy was 3.55 (3.76, 7.18), after RYGB was 4.7 (2.83, 6.56), and after a revisional operation was 5.4 (2.96, 4.15). The difference between sleeve and revision was statistically significant (p = .038) There was no significant correlation between the number of opioids prescribed and taken (R² = 0.014). Overall, 39% of patients reported taking 0 opioid pills after discharge, 50% of patients required ≤2 pills, 75% required ≤6, and 4.6% reported having taken all of the opioid pills prescribed.

**Conclusions:** Most patients use far fewer opioid tablets than prescribed after bariatric surgery, suggesting there is room to decrease the quantity prescribed.

* NESS Non-Members
Objective: To evaluate the volume and trends for routine and complex hepatobiliary surgery reported by general and pediatric surgery trainees.

Design: Retrospective analysis of the frequency of routine and complex hepatobiliary operations performed by general and pediatric surgery trainees using the Accreditation Council for Graduate Medical Education case logs for years 2000–2017 (Surgery) and 2004–2017 (Pediatric Surgery).

Setting: General and pediatric surgical trainees at ACGME-accredited institutions.

Participants: Surgical trainees.

Interventions: N/A.

Main Outcome Measures: We analyzed the mean, standard deviation, median, mode, maximum and minimum number of routine and complex hepatobiliary cases performed by surgical trainees.

Results: The number of trainees increased over the study period for both groups. Mean case volumes for laparoscopic cholecystectomy increased by 36% in Surgery graduates and by 115% in Pediatric Surgery graduates. In Surgery, the mean volumes for choledochoenteric anastomosis procedures decreased by 50% from 3.0 to 1.4 procedures/year between 2000 and 2017 while volumes for hepatic lobectomy increased by 65% from 3.4 to 5.7 procedures/year. In Pediatric Surgery, case volumes for complex procedures (hepatic lobectomy, biliary atresia, and choledochoal cyst) were low (mean <4/year), highly variable among trainees, and overall appear unchanged between 2004 and 2017. In every year reported, at least one Pediatric Surgery trainee reported doing zero cases in one of these categories.

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**Conclusions:** Case volumes for routine hepatobiliary surgery appear to be rising, especially for Pediatric Surgery training programs. Case logs suggest that the volume of complex hepatobiliary surgery remains quite low and highly variable in both disciplines with some trainees obtaining minimal or no exposure to certain cases. The relationship between these trends and the development of competency is worthy of further study.

University of Massachusetts Medical School, Worcester, MA

Objective: To elicit average narcotic needs in the elective, outpatient general surgery population for patients undergoing laparoscopic cholecystectomy (LC), laparoscopic inguinal hernia repair (LIH), laparoscopic ventral hernia repair (LV). In addition, using demographics, medical history, and intra-operative data, we hope to generate a reproducible model for predicting narcotic needs.

Design Observational Study: Consented before surgery. All patients prescribed narcotic tablets post-operatively according to attending surgeon preference. At follow-up, patients questioned regarding post-operative pain control.

Setting: Ambulatory surgery, academic medical center.

Patients or Other Participants: Elective, ambulatory laparoscopic cholecystectomy, inguinal hernia, and ventral repair.

Interventions: None.

Main Outcome Measures: Narcotics prescribed/used, ER/clinic for pain complaints, disposal of excess tablets, mechanism of disposal, use “partial fill.”

Results: All narcotics expressed as oxycodone 5mg equivalents. LC (n = 14): mean usage 2.4 (range 0–8), mean prescribed 14.6 (10–20), mean excess 12 (3–20) LIH (n = 15): mean usage 6.5 (range 0–20), mean prescribed 17.3 (10–25), mean excess 11.2 (0–25) LV (n = 6): mean usage 10.3 tablets (range 0–44*), mean prescribed 15.3 (5–30), mean excess 7.3 (0–15) *patient used excess tablets from previous surgery There is no difference in the amounts of narcotic equivalents prescribed between the procedures studied. However, there is a difference in the total narcotic usage.

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**Conclusions:** Narcotic prescriptions following elective surgery routinely exceed requirements. In addition, prescriptions are not tailored specifically to the procedure performed. We plan to apply this model to other surgical procedures in to develop a model to “right size” prescriptions and reduce narcotics available for diversion. Institution-level efforts to dispose of unused narcotics could reduce opiate diversion and should be strongly pursued by hospitals nationwide. Further investigations include multimodal pre- and postoperative pain control regimens.
P46. September 1918: An Unforgettable Month for New England Surgeons 100 Years Ago

David E. Clark
Maine Medical Center, Portland, ME

Objective: To determine what our surgical predecessors in New England were experiencing exactly one hundred years ago.

Design: Archival research.

Setting: Records of the New England Surgical Society (NESS), contemporary medical/surgical journals, diaries, newspaper archives, and secondary sources.

Participants: New England surgeons during the month of September 1918.

Interventions: None.

Main Outcome Measures: Events of historic importance.

Results: Over half of NESS members were on active military duty, and many individual World War experiences are recorded in diaries and obituaries. During September, the static trench warfare in Europe was finally overcome by the addition of U.S. Army troops, and the Allies began to advance. However, in the same month, sailors at Boston’s Commonwealth Pier (today’s World Trade Center, site of the NESS Centennial Video) began to develop severe respiratory infections, and this deadly form of “Spanish Flu” soon spread to Massachusetts’ Fort Devens, the local civilian population, and then across the nation, leading to last-minute cancellation of the ACS Clinical Congress. September surgical journals included articles from New England surgeons on traction for fractures, local anesthesia for inguinal herniorrhaphy, unexpected survival from disseminated ovarian cancer, and other experiences. Editorials in New England medical journals urged support for the war, propagating claims of horrible German atrocities. Newspapers headlined the war and epidemic, but also addressed active social controversies, including the proposed prohibition of alcohol and allowing women to vote. The baseball season was cut short because of the war, and the Red Sox won the World Series for the last time in the 20th Century.

Conclusions: A century ago, New England surgeons were dealing with unprecedented calamities, in addition to ongoing scientific, political, and social developments.

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¹Maine Medical Center, Portland, ME; ²Dartmouth-Hitchcock Medical Center, Lebanon, NH; ³Central Maine Medical Center, Lewiston, ME

Objective: To describe incidence and characteristics of moose—motor vehicle collisions (MMVC) in New England (NE).

Design: Retrospective cohort.

Setting: Hospitals in NH and ME; epidemiologic data from all NE states.

Patients: Persons injured in MMVC.

Interventions: None.

Main Outcome Measures: Incidence, human mortality.

Results: Collision with a moose is especially dangerous to motor vehicle occupants because of the height and mass of the animal, which often collapses the roof and impacts directly into the passenger compartment. For all NE, the annual incidence of reported MMVC has declined from a peak of >1100 in 1998, but still averaged 521 over the last five years, predominantly in ME and NH. Public education may have contributed to the decline, but the moose population may also have decreased due to environmental changes. NE MMVC are most frequent in the summer months and evening hours. Three NH/ME Trauma Centers registered 124 cases of MMVC: Median Injury Severity Score was 9; 5 patients died (4.0%); 73 patients (58.9%) had injuries of the head, face, and/or cervical spine. ME data on crashes involving wild ungulates from 2003–2017 document 50,281 collisions with deer and 7,061 collisions with moose. Multiple logistic regression models demonstrate that vehicle occupant mortality, after controlling for multiple factors related to speed, is greatly increased if the vehicle strikes a moose rather than a deer (OR 13.0, 95% CI 6.1, 27.9). In these data, there were no fatalities among occupants of Swedish cars, which are specifically engineered to tolerate MMVC.

Conclusions: MMVC remain a serious hazard to motor vehicle occupants in northern NE. Trauma services should recognize characteristic injury patterns. Continuing public education and cautious driving are warranted.

* NESS Non-Members
P48. Emergency General Surgery Operations in the Homeless: Marginal Access to Care and Poor Outcomes

*Michael P. DeWane, Adrian A. Maung, Kevin M. Schuster, Kimberly A. Davis, *Robert D. Becher

Yale School of Medicine, New Haven, CT

Objective: Although homelessness is a widespread problem affecting 3.5 million individuals in the United States, its effect on surgical outcomes is poorly characterized. This study assessed the impact of homelessness on emergency general surgery (EGS) outcomes in the state of California.


Setting: Hospitals in California.

Patients: Aged 18–85 undergoing EGS operations.

Main Outcome Measures: In-hospital mortality; hospital length of stay; discharge disposition.

Results: A total of 356,322 patients underwent emergency surgery over the 5-years, of which 462 (0.13%) were homeless. In the year 2011, 0.09% of EGS operations were performed on the homeless, though that year they made up 0.36% of California’s population. Among all patients receiving EGS operations, the proportion of homeless patients undergoing unscheduled operations was 14% higher than non-homeless; the homeless were 5 times more likely to undergo repair of a perforated viscus or debridement of a necrotizing soft tissue infection (p < 0.001). Multivariable logistic regression demonstrated homelessness was associated with 200% greater odds of in-hospital death (Odds Ratio [OR] 2.31, C.I. 1.33–4.00). Homelessness was also associated with length of stay >5 days (OR 1.64, C.I. 1.33–2.01) and discharge to rehabilitation or skilled nursing facility (OR 1.79, C.I. 1.31–2.45).

Conclusions: Homeless persons seem to be underrepresented among emergency surgical patients when compared to the non-homeless. When they do access surgical services, homelessness is independently associated with poorer outcomes after EGS operations, including increased risk of death. These results confirm that the homeless face multiple barriers to good surgical care and good surgical outcomes. Additional study into this unique health disparity is needed.

* NESS Non-Members
P49. Ten-Year Trends in Post-Mastectomy Reconstruction: A Community-Based Experience
Stamford Hospital, Stamford, CT

Objective: Geographic distance from academic centers is a known barrier to post-mastectomy reconstruction (PMR). Evaluated long-term trends and outcomes in PMR.

Design Retrospective Observational Study: Median follow-up of 4.8 years (range 1–125 months).

Setting: Community hospital.

Patients: All mastectomy patients with or without immediate PMR from 2005–2016. 471 met criteria. 216 unilateral mastectomies and 255 bilateral mastectomies.

Main Outcome Measure: Rates of immediate PMR and surgical outcomes.

Results: Of 726 mastectomies, 488 (67%) done for malignancy and 238 (33%) prophylactically.

- Immediate PMR performed after 534 of 726 (74%) of all mastectomies.
- Annual PMR rates showed moderate variation, from 62% to 84% (p = 0.74).
- PMR patients were younger (median age 56 vs. 75 years, p < 0.001), less frequently diabetic (7% vs. 15%, p = 0.001) and often prophylactic (40% vs. 13%, p < 0.001).
- Among 534 PMRs, 473 (89%) implant based and 61 (11%) autologous.
- Wound infection, flap necrosis, or loss of implant documented in 91 (17%) cases, 75 (14%) necessitating re-operation.
- Laser angiography flap evaluation performed in 69 (13%) cases, with wound complications in 3 (4%) cases.
- 488 mastectomies performed for malignancy, 249 (51%) received chemotherapy, 163 (33%) radiotherapy, and 269 of 379 ER+ patients (71%) received endocrine therapy.
- 4 (0.8%) isolated locoregional recurrences, 4 (0.8%) combined locoregional/distant recurrences, and 79 (16%) distant-only recurrences.

* NESS Non-Members
Conclusions: The landscape of PMR remains in evolution. The need to address geographic barriers to reconstruction is paramount. Community centers with appropriate plastic surgery support have potential to play a key role in addressing this unmet need.
P50. **Effect of Limited English Proficiency on Outcomes Following Cancer Operations**

*Boston Medical Center/Boston University, Boston, MA*

**Objective:** Determine if limited English proficiency affects outcomes following cancer operations.

**Design:** Retrospective cohort study (HCUP New Jersey Statewide Inpatient Database).

**Setting:** New Jersey, Jan 1, 2009–Dec 31, 2014.

**Patients:** Patients \( \geq 18 \) years undergoing breast, pancreas, biliary, stomach, liver, thyroid, or adrenal operations.

**Interventions:** None.

**Main Outcome Measures:** Odds ratio (OR) of 30-day mortality, 7-day readmission, length of stay (LOS).

**Results:** 35,709 cases were analyzed. 3,228 (9.0%) patients reported non-English primary language. Non-English speakers were substantially less likely to be insured than were English speakers (6.5% vs. 23.6%, \( p < 0.001 \)). Co-morbid conditions were similar in prevalence except for a slight increase in mental illness and lung disease among English-proficient patients. Overall mortality was 1.8%, and when adjusted for demographics, comorbidities, and socioeconomic factors (income and insurance status) there was no difference in 30-day mortality (OR 0.97 [95% CI:0.70–1.35]) regardless of language. Overall, the odds of readmission did not differ by primary language; however, the effect of language varied by race. Compared to white patients, English proficient non-black minorities were less likely to be readmitted (0.79 [95% CI:0.65–0.97]), but there was no difference (versus white patients) for non-black minorities who were not English proficient or for black patients regardless of language proficiency. Median LOS increased by 0.58 days (95% CI: 0.37–0.78 days) in non-English proficient patients.

* NESS Non-Members
**Conclusions:** English proficiency does not have an independent effect on 30-mortality or readmission following cancer operations, and patients are not more likely to be readmitted based upon language. Patients with a non-English primary language stayed in the hospital over a half-day longer. These results suggest that mortality and early complications are not impacted by English proficiency, but discharge timing may be potentially impacted by language barriers.
P51. Community Collaboration and Explainer Videos for Opioid Education
*Colleen Kerrigan

University of Vermont Medical Center, Burlington, VT

Objective: Spurred by the public health epidemic of opioid abuse along with new research demonstrating providers overestimate and overprescribe opioids patients require after surgery, Vermont has changed the way opioids for acute pain are prescribed. We collaborated with a local media production team to create three high quality explainer videos targeting surgical prescribers, non-prescriber support staff, and patients with the goal of summarizing recent research and changes. We hope to educate and effect culture change, and provide accessible resources to guide responsible, evidence based opioid prescribing practices in surgical practice.

Design: Community education project.

Setting: Surgical practices (including general surgery, urology, orthopedics, gynecology and vascular) at an academic hospital in northern New England.

Patients or Other Participants: Video content was designed by an attending physician, surgical resident and medical student in collaboration with a Health Marketing Specialist and local media production company. Final products are intended for direct distribution to surgical opioid prescribers, non-prescriber support staff and surgical patients.

Intervention(s): Creation and distribution of high quality explainer videos and practical opioid prescribing guidelines for acute pain to the surgical community.

Main Outcome Measure(s): Feedback from the three groups will be solicited to improve and update the videos over time. Eventual statewide distribution is planned with the potential to eventually contribute to national acute pain management guidelines.

Results: Pending final video production.

Conclusions: The opioid epidemic is a national public health crisis. Vermont is actively addressing the local impact of this epidemic with new research and regulations concerning opioid prescription for acute pain. For maximal effectiveness, prescribers, non-prescriber support staff and patients need high quality, accessible education and practical resources.

* NESS Non-Members
**P52.** **Wellbeing Program Demonstrates Early Improvement in General Surgery Residency**


*University of Massachusetts Medical School, Worcester, MA*

**Objective:** Studies demonstrate >65% of surgical residents experience burnout during training. Our objective was to assess the impact of a wellbeing program on General Surgery Residents (GSR) and evaluate efficacy in reducing signs of burnout and improving personal wellbeing.

**Design:** Cross-sectional, qualitative, self-reported survey.

**Setting:** Tertiary care academic medical center.

**Participants:** 37 GSR stratified by PGY level: intern (INT = PGY 1), junior resident (JR = PGY 2 or 3), and senior resident (SR = PGY 4 or 5).

**Main Outcome Measure:** Assessment of burnout, depersonalization/callousness, and personal satisfaction at baseline and 6-months after implementation of a wellbeing program.

**Results:** 30 (81%; 9 INT, 12 JR, 9 SR) and 24 (65%; 8 INT, 8 JR, 8 SR) GSR completed the baseline and 6-month surveys (Table 1). There was a decrease in residents experiencing burnout. All groups reported improvements in enjoyment, work satisfaction, and happiness with their career choice. Residents considering work-related stress as “severe” decreased. This was associated with global improvements in stress-reduction strategies. However, INT and JR may be at particular risk. While SR reported improved burnout, there was a slight increase for INT and JR. JR also reported higher rates of the need to escape from work. All groups reported a slight increase in feeling calloused toward people.

**Conclusion:** Implementation of a wellbeing program demonstrates improvement in resident enjoyment and satisfaction from work with a class-specific improvement in burnout. However, JR may be more at risk. Long term follow-up is needed to identify class-specific strategies that are most effective in reducing burnout in GSR.

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*N*  NESS Non-Members
Table 1. Outcomes pre- and post-implementation of a General Surgery Residency wellbeing program

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline (N=30)</th>
<th>6-Months (N=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Feel burned out at work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>2.8</td>
<td>2.7</td>
</tr>
<tr>
<td>INT</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>JR</td>
<td>3.1</td>
<td>3.3</td>
</tr>
<tr>
<td>SR</td>
<td>2.9</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Feel calloused toward people</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>2.3</td>
<td>2.6</td>
</tr>
<tr>
<td>INT</td>
<td>1.7</td>
<td>2.5</td>
</tr>
<tr>
<td>JR</td>
<td>2.8</td>
<td>3.0</td>
</tr>
<tr>
<td>SR</td>
<td>2.3</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Enjoyment from work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td>INT</td>
<td>4.2</td>
<td>4.4</td>
</tr>
<tr>
<td>JR</td>
<td>3.9</td>
<td>4.3</td>
</tr>
<tr>
<td>SR</td>
<td>4.0</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>Personal satisfaction from work</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>INT</td>
<td>4.3</td>
<td>4.4</td>
</tr>
<tr>
<td>JR</td>
<td>4.0</td>
<td>4.4</td>
</tr>
<tr>
<td>SR</td>
<td>4.0</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Happy with career choice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>4.2</td>
<td>4.4</td>
</tr>
<tr>
<td>INT</td>
<td>4.3</td>
<td>4.4</td>
</tr>
<tr>
<td>JR</td>
<td>4.3</td>
<td>4.5</td>
</tr>
<tr>
<td>SR</td>
<td>4.2</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>Work related stress is “severe” (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>INT</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>JR</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>SR</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td><strong>Have strategies to reduce stress (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>87</td>
<td>100</td>
</tr>
<tr>
<td>INT</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>JR</td>
<td>75</td>
<td>100</td>
</tr>
<tr>
<td>SR</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Feel the need to “escape work” (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>42</td>
<td>38</td>
</tr>
<tr>
<td>INT</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td>JR</td>
<td>58</td>
<td>75</td>
</tr>
<tr>
<td>SR</td>
<td>33</td>
<td>13</td>
</tr>
</tbody>
</table>

INT=PGY1, JR=PGY2-3, SR=PGY4-5. Scores carry value 1-5 unless otherwise specified as percentage, where 1=never and 5=always.
P53. Characterizing Colonic Migrating Motor Complexes (CMMCs) Using a Novel Method in Ex Vivo Mouse Colon

*John R. Konen1,2, *Emily J. Joyce2, *Colleen B. Kerrigan1,2, *Gary M. Mawc2, *Grant W. Hennig2
1Department of Surgery, The University of Vermont Medical Center, Burlington, VT; 2Department of Neurological Sciences, University of Vermont, Burlington, VT

Objective: Alterations in the enteric nervous system (ENS) play an important role in regulating gastrointestinal (GI) motility. It is well known that changes in the ENS occur with various GI disorders. The colonic migrating motor complex (CMMC) is a rhythmic propagating contractile event that is spontaneously generated by the ENS. It has a central role in colonic fecal propulsion. A novel technique to analyze changes in CMMCs in an ex vivo model of mouse colon is described.

Design: Non-randomized control experiment.

Setting: Laboratory.

Patients: C57BL/6 mice (7–15 weeks old).

Interventions: Mice were given various pharmacological agents or vehicle in vivo by enema and euthanized at 30 minutes. Following euthanasia, the whole colon was dissected out and pinned in a physiologic bath. High-resolution videos of the colon were performed and spatiotemporal maps were generated using custom software.

Main Outcome Measures: Spatiotemporal maps were analyzed to evaluate and compare gut diameter, CMMC frequency, length, direction, velocity, amplitude, and initiation sites between vehicle and treated mice.

![Figure 1: Spatiotemporal map generated from changes in murine colon diameter showing colonic migrating motor complexes (CMMCs: depicted by asterisks *), and myogenically-mediated ripples (see arrows).](image)

* NESS Non-Members
**Results:** Neurogenic (CMMCs) and myogenic (ripples) mediated motor patterns were observed along the entire length of the colon. Pharmacologically-treated colons showed altered strength, prevalence and type of motor patterns.

**Conclusions:** These results demonstrate a novel and physiologic method to assess changes in motor behaviors in whole murine colon. It allows for further characterization of potential therapeutic targets within the GI tract, and assessment of motility patterns in various disease states or transgenic models.
P54. **National Trends in the Management of Traumatic Pediatric Abdominal Vascular Injury**


*Baystate Medical Center, Springfield, MA*

**Objective:** Due to the dearth of literature directing optimal management of potentially life-threatening pediatric abdominal vascular injury, treatment has followed that of adults. We assessed national trends regarding the intervention and outcomes of children presenting with these injuries.

**Design:** Retrospective comparison from the National Trauma DataBank.

**Setting:** Level I trauma center.

**Patients:** All patients under eighteen years who sustained blunt or penetrating injury to at least one named intraperitoneal vessel (dcode902–902.9). Patients were separated into arterial, venous, and combined arterial and venous injury; then stratified by intervention. Admission year, age, sex, mechanism, and injury severity score identified for covariate analysis.

**Results:** Between 2007–2011, 1799 patients sustained abdominal vascular injuries. Mean age 14.8 ± 4.3 years. ISS was similar across all groups. Length of stay, ICU stay, ventilator days, and number of complications were similar across injury groups. Patients with combined vascular injuries had the highest incidence of complications (51% v. 41% arterial and 43% venous; p = 0.012) and highest mortality (42%; p < 0.0001). When analyzed by intervention, patients with arterial injury who underwent interventional radiology had the lowest mortality (6.2%, p = 0.028; Table). Patients who had no intervention with either isolated venous injuries, or mixed arterial and venous injuries had the highest mortality rates 37% (p = 0.002) and 61% (p = 0.011), respectively.

**Conclusion:** Children presenting with both arterial and venous abdominal injuries have very high morbidity and mortality, particularly those who do not undergo operative intervention. Further study is imperative to determine if there are any opportunities to improve the current management strategies of pediatric abdominal vascular injuries.

* NESS Non-Members
<table>
<thead>
<tr>
<th></th>
<th># Total Injuries</th>
<th>LOS</th>
<th>Complications</th>
<th>Disposition Home</th>
<th>Disposition SNF</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arterial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No intervention (Ref)</td>
<td>7.6 ± 6.0</td>
<td>11.5 ± 15.8</td>
<td>40.2% (0.6 ± 0.9)</td>
<td>58.2%</td>
<td>21.3%</td>
<td>19.3%</td>
</tr>
<tr>
<td>IR</td>
<td>12.7 ± 35.1</td>
<td>15.7 ± 15.0</td>
<td>41.3% (1.0 ± 1.4)</td>
<td>69.3%</td>
<td>23.2%</td>
<td>6.2%*</td>
</tr>
<tr>
<td>OR</td>
<td>6.8 ± 5.3</td>
<td>14.0 ± 17.6</td>
<td>43.0% (0.8 ± 1.3)</td>
<td>61.7%</td>
<td>23.4%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Both IR and OR</td>
<td>9.8 ± 6.0</td>
<td>15.5 ± 13.7</td>
<td>52.8% (1.2 ± 1.6)*</td>
<td>20.7%**</td>
<td>41.3%</td>
<td>38.2%</td>
</tr>
<tr>
<td><strong>Venous</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No intervention (Ref)</td>
<td>7.1 ± 5.9</td>
<td>8.0 ± 11.7</td>
<td>39% (0.6 ± 1.1)</td>
<td>51%</td>
<td>9%</td>
<td>37%</td>
</tr>
<tr>
<td>OR</td>
<td>5.7 ± 4.0</td>
<td>16.1 ± 20.1</td>
<td>48% (1.0 ± 1.3)*</td>
<td>60%</td>
<td>16%*</td>
<td>24%**</td>
</tr>
<tr>
<td>Both</td>
<td>No intervention (Ref)</td>
<td>7.2 ± 5.3</td>
<td>6.8 ± 12.6</td>
<td>51% (0.8 ± 1.0)</td>
<td>32%</td>
<td>5%</td>
</tr>
<tr>
<td>OR</td>
<td>5.7 ± 4.2</td>
<td>13.9 ± 19.8</td>
<td>50% (0.8 ± 1.1)</td>
<td>45%</td>
<td>13%</td>
<td>41%*</td>
</tr>
</tbody>
</table>

*p < 0.05, **p < 0.01 on multivariable analysis
10:45 AM – 10:50AM
CONFERMENT OF THE
NATHAN SMITH AWARD
John P. Welch

Panel – New Frontiers in Surgical Oncology
10:50 AM – 12:15 PM
Grand Ballroom
Moderator: Richard Barth
Faculty: The Local Option: The Rational Use of Local Therapy in Patients at High Risk of Dying from Metastatic Progression
Daniel J. Boffa
Neoadjuvant Therapy/Novel Imaging
Mehra Golshan
Melanoma: Translational Science and Immunotherapy Outperform
Giles F. Whalen

12:00 PM – 4:00 PM
AFTERNOON TICKETED ACTIVITIES
(*Separate Ticket Required)
Portland Art Museum/Winslow Homer Studio Tour
$32 per person
Includes a docent-led tour of the Portland Art Museum (PAM); transportation to/from the Winslow Homer Studio; and docent-led tour of the Winslow Homer Studio. Two groups will rotate between PAM and the Studio, with both groups meeting at the PAM Welcome Center. Lunch and snacks will NOT be included; breaks will be provided during the tour to purchase snacks/drinks.
12:15 PM – 1:45 PM  WOMEN IN SURGERY LUNCHEON
$30 per person (includes a boxed lunch)
Winslow Homer Ballroom

2:00 PM – 4:00 PM  LUCKY CATCH LOBSTER CHARTER
*SOLD OUT
Visit the NESS Registration desk for a waitlist
Includes a 90-minute charter lobster tour (lunch and drinks on own), located a 1/2 mile from the hotel and you will either need to walk or drive to the wharf.

6:15 PM – 7:00 PM  NEW MEMBERS PRE-RECEPTION (INVITATION ONLY)
Winslow Homer Ballroom

7:00 PM  PRESIDENT’S RECEPTION & DINNER
Business Attire
Guest Speaker:  Andrew J. Pershing
Ocean Ecology, Gulf of Maine Research Institute
Lessons from the Gulf of Maine

Reception:  Ballroom Balcony
Dinner:  Grand Ballroom

7:00 PM – 9:30 PM  KIDS BANQUET
Hawthorne
SUNDAY, SEPTEMBER 23, 2018

7:00 AM – 11:00 AM  REGISTRATION  
Lobby Foyer

7:00 AM – 10:00 AM  EXHIBIT HALL HOURS  
Longfellow (Lower Level)

7:00 AM – 10:30 AM  SPEAKER READY ROOM  
Lobby Foyer

7:00 AM – 8:00 AM  CONTINENTAL BREAKFAST  
Longfellow (Lower Level)

7:30 AM – 8:15 AM  ANNUAL BUSINESS MEETING  
(MEMBERS ONLY)  
Grand Ballroom

Scientific Session V
8:15 AM – 9:20 AM  
Grand Ballroom

Co-Moderators: Ali Tavakkoli  
Jesse S. Moore

Podium papers (8-minute presentation/5-minute discussion).  
Brief papers (3-minute presentation/2-minute discussion).
23. Complete Neoadjuvant Treatment for Rectal Cancer (CONTRE) Study: Long Term Results


Warren Alpert Medical School, Providence, RI

Objective: Despite national guidelines, recent studies have shown poor compliance of adjuvant chemotherapy use after neoadjuvant chemoradiation and surgery for locally advanced rectal cancer. This has prompted examination of optimizing the neoadjuvant regimen employed in this setting. We have previously reported the feasibility of primary chemotherapy followed by chemoradiation and surgery in the CONTRE study. Here we sought to examine our long-term results.

Design: Prospective study.

Setting: Two tertiary care hospitals.

Patients: Patients with stage II or III rectal cancer by MRI/endorectal ultrasound received 8 cycles of FOLFOX followed by chemoradiation consisting of capecitabine concurrent with 50.4 Gy radiation therapy. Surgery was performed 6 to 10 weeks after chemoradiation.

Main Outcome Measures: Local recurrence (LR), distant metastases (DM), disease free survival (DFS) and overall survival (OS) were assessed.

Results: Thirty-six patients enrolled between August 2010 and June 2013 (median age 61 y). Pathologic complete response (ypT0, N0) was achieved in 33% (12/36) of patients. In the perioperative period, one patient developed an anastomotic leak but no patients required surgical re-intervention. At median follow-up of 58.5 months, LR and DM were 8% (3/36) and 19% (7/36) respectively. The median 5-year DFS and OS were 72.3% and 75% respectively.

Conclusion: In this study the delivery of neoadjuvant chemotherapy followed by chemoradiation and surgery produced results comparable to nationally reported outcomes. Specifically, delaying surgery from time of diagnosis did not have a negative impact on long-term outcomes. This strategy may not only improve compliance but potentially treat micrometastases in locally advanced rectal cancer. Our findings support the pursuit of larger phase III trials in assessing use of neoadjuvant chemotherapy.

* NESS Non-Members
+24. Transferred Emergency General Surgery Patients Are at Increased Risk of Death


Brigham and Women's Hospital, Boston, MA

**Objective:** Emergency General Surgery (EGS) encompasses high risk patients undergoing high risk procedures. Admission source, particularly interhospital transfers, is rarely accounted for clinical performance benchmarking. Our goal was to assess the impact of transferred patients on outcomes following EGS.


**Setting:** High-quality surgical outcomes data from more than 80 US hospitals participating in ACS NSQIP.

**Patients:** All inpatients that underwent one of 7 EGS procedures shown to represent 80% of EGS volume, complications, and mortality nationally.

**Interventions:** Admission source was classified as directly admitted versus transferred from an outside emergency room or an acute care facility.

**Main Outcome Measures:** The primary outcomes were overall mortality, overall morbidity and major morbidity.

**Results:** A total of 619,174 EGS admissions were identified, of which 31,173 (5%) were transfers. Mean age was 55.8 years and 52% were female. Overall mortality was 2.8% for the entire cohort and 10.1% within the transfer group. After risk adjustment for 33 clinical and demographic variables, transferred patients had higher rates of overall mortality (Odds Ratio [OR] 1.12, 95% Confidence Interval [CI] 1.05–1.21), higher overall morbidity (OR 1.28, 95% CI 1.22–1.34) and major morbidity (OR 1.29, 95% CI 1.21–1.37) when compared with directly admitted patients.
Conclusions: After rigorous risk adjustment, interhospital transfer status is an independent risk factor for mortality and morbidity in the EGS population. This increased burden on accepting institutions may have an impact on quality metrics and should be considered for benchmarking of clinical performance.
25. Outcomes of Extended Lymphadenectomy (LAD) for Gastroesophageal Carcinoma (GEC): A Large Western Series

*Selen Li*, *Christina L. Costantino*, *David W. Rattner*, *John T. Mullen*

*Harvard Medical School, Boston, MA; Massachusetts General Hospital, Boston, MA*

**Objective:** To examine perioperative risk and survival outcomes in a large Western series of patients undergoing D1 versus extended (D1+/D2) LAD for GEC.

**Design:** Single institution, retrospective chart review. Clinicopathologic and treatment factors were analyzed for their impact on survival by univariate and multivariate regression analyses.

**Setting:** Academic medical center.

**Patients:** 520 patients with GEC who underwent potentially curative gastrectomy from 1995–2017, including 362 (70%) patients undergoing D1 LAD and 158 (30%) undergoing D1+/D2 LAD.

**Interventions:** None.

**Main Outcome Measures:** Perioperative morbidity and mortality, lymph node yield, and overall survival.

**Results:** Median follow up was 3.1 years. Patients undergoing D1+/D2 LAD were more likely to have distal tumors, to undergo distal/subtotal or total gastrectomy, and to undergo surgery at a more contemporary time (median year 2011 versus 2006) than patients undergoing D1 LAD. The median number and percentage of patients with >16 examined lymph nodes were 16 and 53% versus 27 and 89% in the D1 and D1+/D2 groups. There were no differences in the rates of major complications (16.6% versus 14.6%; p > 0.05) or operative mortality (2.8% vs 0.6%; p = 0.22) between the D1 and D1+/D2 groups, respectively. Patients undergoing D1+/D2 LAD had a significantly improved overall survival (HR 0.67, p = 0.013) on multivariate analysis compared to those undergoing D1 LAD (Figure), though there were several potential unmeasured confounding variables.

* NESS Non-Members
**Conclusion:** Gastrectomy with extended (D1+/D2) LAD can be safely performed at a high-volume Western institution, ensures optimal staging in the vast majority of patients, and may confer a survival advantage.
+26. **Outcomes of Bariatric Surgery in Patients with Inflammatory Bowel Disease**

*Keyvan Heshmati, *David A. Harris, Ali Tavakkoli, Eric G. Sheu

*Brigham and Women’s Hospital, Boston, MA*

**Objective:** Obesity is increasing among patients with inflammatory bowel disease (IBD). We aimed to compare the safety and efficacy of Sleeve Gastrectomy (SG) and Roux-en-Y Gastric Bypass (RYGB) in this patient population.

**Design:** Retrospective cohort study.

**Setting:** Academic tertiary center.

**Patients:** 56 patients with Crohn’s Disease (CD) or Ulcerative Colitis (UC) diagnosed before bariatric surgery (2002–2017) who underwent RYGB (8 CD, 10 UC) or SG (25 CD, 13 UC).

**Main Outcome Measures:** Data on demographics, IBD medication requirement (IBD-Rx) at baseline and last follow-up recorded, preoperative comorbidities, surgical complications, and weight loss.

**Results:** In RYGB and SG, patients presented at a similar age (45 ± 9.3 vs. 47.2 ± 12.2; p = 0.5), pre-operative BMI (48.4 ± 6.5 vs. 45.8 ± 8.5; p = 0.2), and mean IBD duration (8.6 ± 6 vs. 10.8 ± 7.5yrs p = 0.3). Follow-up duration was greater in the RYGB group (99.4 ± 45 vs. 32 ± 22.2 months; p < 0.01). CD patients had increasing IBD-Rx post RYGB than SG (37.5 vs. 4%, p = 0.01). The proportion of RYGB and SG patients with stable IBD-Rx (25% vs. 56%; p = 0.5) or improved IBD-Rx (37.5% vs. 40%; p = 0.7) were not different. IBD-Rx were similar in UC following both RYGB and SG (60% vs. 77% stable; 40% vs. 23% improved Rx; p = 0.4). There were no increases in UC-RX across groups. Mean excess BMI loss at 1 year was similar between RYGB and SG (65.9% vs. 53.9%; p = 0.3) with similar accompanying improvements in comorbidities. RYGB was associated with a greater rate of 1-year complications compared to SG (28% vs. 4%; p = 0.02).

**Conclusions:** In CD, SG was superior to RYGB in terms of IBD-Rx post-bariatric surgery. No differences were seen in IBD-Rx in UC. SG offered similar weight loss outcomes to RYGB with a lower overall complication rate.

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+ RPE Eligible Papers
* NESS Non-Members
Brief 12. Development and Implementation of a Surgical Quality Improvement Pathway for Pediatric Intussusception Patients


*Boston Children’s Hospital, Boston, MA*

**Objective:** Implement a standardized clinical assessment and management plan (SCAMP) for ileocolic intussusception allowing safe discharge from the emergency department (ED) in select cases and determine optimal management of patients returning to care, including those with recurrent intussusception.

**Design:** Prospective cohort study.

**Setting:** Boston Children’s Hospital (Boston, MA), a quaternary care standalone children’s hospital.

**Patients:** From February 2013 through December 2017, 118 encounters with patients age 6 months to 6 years with ultrasound confirmed ileocolic intussusception were managed through the SCAMP.

**Interventions:** Eligible patients did not receive antibiotics and were discharged if stable following successful reduction with 2 planned follow-up phone calls by surgical personnel at 24-hours and either 7 (pilot 1) or 3 (pilot 2) days after discharge.

**Main Outcome Measures:** Complications, incidence of bacteremia, success of follow-up phone calls, recurrent intussusception, and rates of return to care.

**Results:** Overall, 76% of patients met discharge criteria, 88% of whom were discharged. There were no instances of bowel perforation, necrosis, or death in the discharged group. Antibiotics were not given for the indication of intussusception, and no patients developed bacteremia. Successful 24-hour follow-up calls were made to 62% and 59% of patients and successful second follow-up calls were made to 28% and 55% of patients in pilots 1 and 2, respectively. Of those discharged, 74% never returned to care, 19% returned for recurrent intussusception, and 7% returned for unrelated symptoms. Nearly all patients who returned to care in pilots 1 and 2 did so through the ED and not the clinic.

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* NESS Non-Members
**Conclusions:** Patients meeting certain criteria can be safely discharged from the ED, avoid antibiotics, and be followed by phone for concerns of recurrent intussusception.

*Jahnvi Kakuturu¹, *Natalie Pozzi¹, *Ann Friedrich¹, *Rachelle Damle², *Allison Wyman¹, Demetrius Litwin¹, Mitchell Cahan¹

¹University of Massachusetts, Worcester, MA; ²Saint Louis University, St. Louis, MO

Objective: This study presents a comprehensive, nationwide analysis of insurance status and delivery of care in patients presenting with diagnoses that typically require emergency surgery.

Patients: The University HealthSystem Consortium (UHC) database was used to identify adult patients age 18–65 years who presented with emergency surgery diagnoses from 2010–2015.

Main Outcome Measures: Insurance status with Medicaid or Private Insurance was compared using both univariate and multivariate analysis to assess differences in the percent of time surgery was performed, average time to surgery, in-hospital morbidity, rates of readmission and mortality.

Results: The study included 117,875 patients, 48% insured with Medicaid and 52% with Private Insurance. Medicaid patients had surgery performed less frequently (70% in the Medicaid group versus 76% in the Private group), experienced higher rates of in-hospital morbidity (4.6% in the Medicaid group versus 4.1% in the Private group) and had longer lengths of stay (5.4 days in the Medicaid group and 4.4 days in the Private group). Multivariate analysis controlling for age, race, severity of illness, and co-morbid conditions showed consistent results with Medicaid patients less likely to undergo surgery (OR 0.71, 95% CI: 0.69–0.73) and experiencing more in-hospital morbidity (OR 1.23, 95% CI: 1.13–1.33).
Conclusions: In emergency surgery patients, insurance coverage with Medicaid leads to differences in healthcare delivery when compared with the privately insured. Underlying systemic processes in hospitals across the United States may influence care for these patients who are taken to the operating room less frequently, suffer more in-hospital morbidity, and can expect longer hospital stays. Future studies should examine the regions and hospitals that are closing this gap to identify strategies to minimize differences in care and achieve better outcomes.
9:20 AM – 10:05 AM  
**34th Annual Samuel Jason Mixter Lecture**  
*Sponsored by the NESS Scholars Foundation*  
*Grand Ballroom*  
Pancreatic Cancer: Current Outcomes – Is There Hope on the Horizon?  
Keith D. Lillemoe

10:05 AM – 10:10 AM  
**Introduction of President**  
*Grand Ballroom*  
Richard S. Swanson

10:10 AM – 11:00 AM  
**Presidential Address**  
*Grand Ballroom*  
The Surgical Mentorship of John Homans by Harvey Cushing: The Untold Story  
Robert J. Touloukian

11:00 AM  
**Adjourn**
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REGISTRATION DESK: Just drop this form off at the Registration Desk at the 2018 Annual Meeting in Portland, ME.
SCHEDULE AT A GLANCE

FRIDAY, SEPTEMBER 21
1:00PM – 2:30PM  Scientific Session I  Grand Ballroom
2:30PM – 3:00PM  Coffee Break  Longfellow
   *Visit Exhibits, Posters of Distinction & ePosters
3:00PM – 5:00PM  Scientific Session II  Grand Ballroom
5:00PM – 5:45PM  State Caucus Meetings  See Page 82 & On-Site Signage
6:00PM – 7:00PM  Welcome Reception  Ballroom Foyer

SATURDAY, SEPTEMBER 22
7:00AM – 8:00AM  Continental Breakfast  Longfellow
7:00AM – 7:45AM  Specialty Group Breakfasts
   *Navigating the Medicolegal Climate for Residents and Young Surgeons
   *Visit Exhibits, Posters of Distinction Session for Best Poster Award
7:45AM – 8:40AM  Scientific Session III  Grand Ballroom
8:40AM – 8:55AM  Introduction of New Members  Grand Ballroom
8:55AM – 10:15AM  Scientific Session IV  Grand Ballroom
10:15AM – 10:45AM  Coffee Break  Longfellow
   *Visit Exhibits, Posters of Distinction & ePosters
10:45AM – 10:50AM  Conferment of the Nathan Smith Award – Awarded to John P. Welch
10:50AM – 12:15PM  Panel Discussion
   *New Frontiers in Surgical Oncology
12:00PM & 2:00PM  *Afternoon Activities
   *Details included on page 100
12:15PM – 1:45PM  *Women in Surgery Luncheon  Winslow Homer
7:00PM  President’s Reception & Dinner  Ballroom Balcony & Grand Ballroom
7:00PM  Kids Banquet (Ages 5–12)  Hawthorne

SUNDAY, SEPTEMBER 23
7:00AM – 8:00AM  Continental Breakfast  Longfellow
7:30AM – 8:15AM  Annual Business Meeting  Grand Ballroom
   *Members Only
8:15AM – 9:15AM  Scientific Session V  Grand Ballroom
9:20AM – 10:05AM  34th Annual Samuel Jason Mixter Lecture – Keith D. Lillemoe
   *Pancreatic Cancer: Current Outcomes – Is There Hope on the Horizon?
10:05AM – 10:10AM  Introduction of President
   Richard S. Swanson  Grand Ballroom
10:10AM – 11:00AM  Presidential Address
   Robert J. Touloukian
   *The Surgical Mentorship of John Homans by Harvey Cushing: The Untold Story
   *Members Only