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Boston University School of Medicine

DEPARTMENT OF SURGERY
SECTION OF ACUTE CARE & TRAUMA SURGERY
2013 ANNUAL REPORT

BOSTON TRAUMA

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Boston Medical Center

Department of Surgery

Section of Acute Care & Trauma Surgery/Surgical Critical Care

2013 Annual Report

We are happy to share with you the *2013 Annual Report* from the Acute Care & Trauma Surgery Service. This year we are presenting a combined report highlighting a comparison of the Trauma and Emergency General Surgery (EGS) data points and trends. They are two of the three spheres that encompass the concept of Acute Care Surgery. We have been tracking and reporting trauma data since the beginning of the program and it is part of the responsibility of being a Level I Trauma Center. Last year was the first time we reported a year's worth of EGS data which was very revealing and helpful to understand such a large piece of our practice. This report combines the two for comparison purposes. Still yet to accomplish is an equivalent report on the Surgical Critical Care component of this triad. Both trauma and emergency general surgery patients that need intensive care unit level of care are best managed by the specialty physicians, nurses and other clinical staff that are trained and credentialed in this complex specialty. We look to further explore that aspect of our program in the coming year.

There were several changes in personnel within our section that happened this year and are worth noting. Eric Mahoney, MD, left the group to practice at Emerson Hospital in Concord, MA. Kate Mandell, MD left to return to Washington and concentrate on an Emergency General Surgery practice. Dorothy Bird, MD, graduated from her residency in General Surgery at Boston University School of Medicine (BUSM) and has joined the team as an Acute Care Surgeon. Gerard Doherty MD, *James Utley Professor and Chairman,* Department of Surgery, Boston University School of Medicine and *Surgeon-in-Chief*, Boston Medical Center began taking occasional trauma call and has made an impact on the trauma service. We have welcomed Robert Schulze, MD, who is a Boston University alumnus and completed a fellowship at Baltimore Shock Trauma joined us in early 2014. Prior to joining BMC, Dr. Schulze was most recently *Director of Surgical Nutrition and Surgical Critical Care* at SUNY Downstate Medical Center in Brooklyn, NY and *Attending Physician of Surgery* at Kings County Hospital Center also in Brooklyn, NY.

Lauren McNamara, *Project Management Specialist* left the Trauma staff and was replaced by Rachel Raubenhold, *Project Management Specialist,* who was an internal transfer from the Section of Pediatric Surgery and Ellie Madison, *Project Management Specialist,* departed to attend graduate school at the University of Minnesota and was replaced by Misbah Mohammed, MPH, *Project Management Specialist*. Julie Duggan, the *Assistant Trauma*

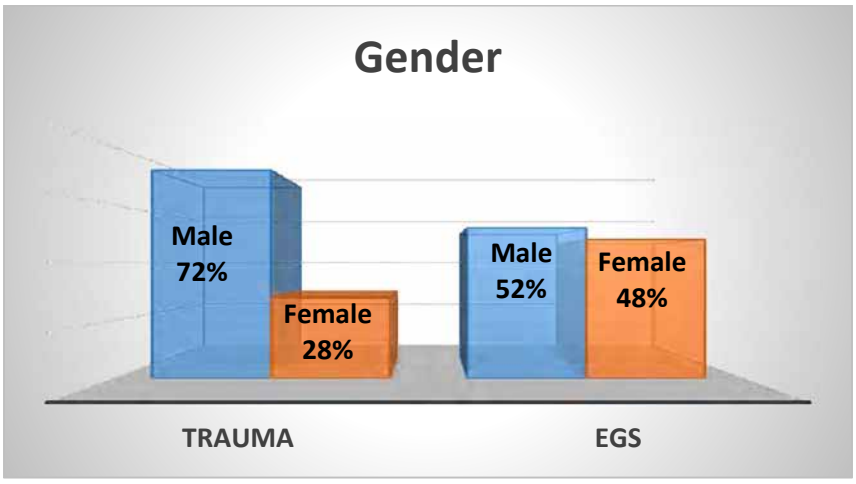
Registrar left to move closer to her family and was replaced by Amy Hart, *Assistant Trauma Registrar*.

The Boston Marathon Bombings

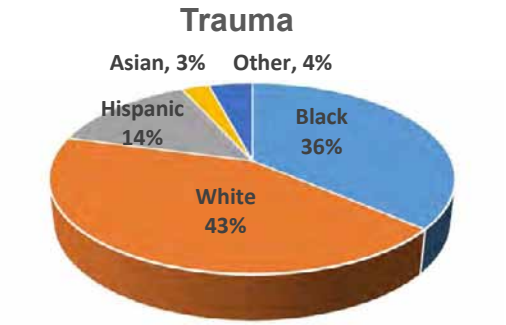
Clearly, the most notable event of the year was the tragedy of the Boston Marathon Bombings and the unfortunate loss of life and limb. The silver lining in that was how well Boston Medical Center (BMC), the Emergency Medical Services (EMS) community and the other trauma centers in the city functioned on that day and the days that followed. The creation of a Boston Level I Trauma Center Collaborative was created for the purpose of sharing successes and combining experiences collectively and collaboratively to tell a unified story and make recommendations of what worked well, so that other municipalities and medical centers can better prepare should a similar mass casualty event befall them. That unfortunate day showed the value of trauma centers and the impact of a dedicated and organized team approach to delivering high quality trauma care such as we have here at BMC. There have been many opportunities to tell that story over the ensuing months. Trauma Program staff have been invited to present the BMC experience at local, state and national conferences individually and as part of a panel. They have been featured in numerous professional and consumer publications and interviewed on several radio and television programs that have been picked up and aired across the country and overseas. Boston Medical Center as part of the Boston Level I Trauma Center Collaborative has contributed to what we believe will be the definitive paper on this topic which has been submitted for publication. Other papers and projects are being considered by this collaborative as well.

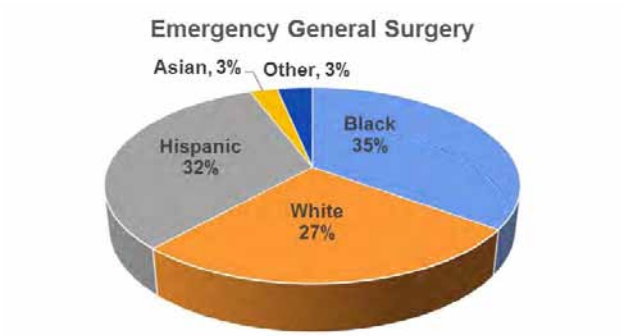
Highlights and Comparisons from the *Trauma* and *Emergency General Surgery* Registries

It should come as no surprise that males outnumber females substantially in our trauma population but are almost equal in the emergency general surgery demographics. Males are traditionally more prone to high risk-taking behaviors and interpersonal violence. This is the same with the nationwide experience also.

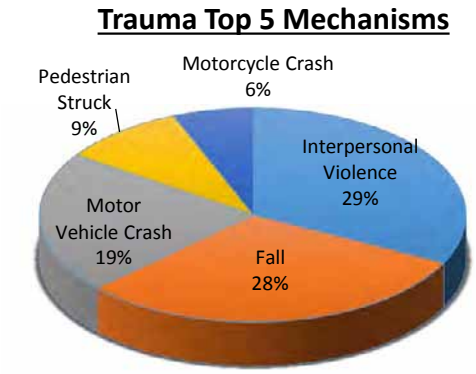


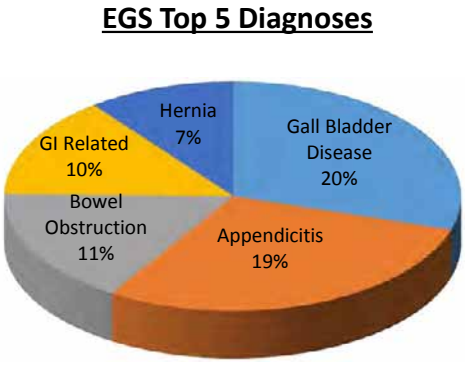
It is interesting to note that the largest racial demographic for our trauma population is White, followed by Black, then Hispanic. The emergency general surgery population is Black, followed by Hispanic, then White. This may be influenced by the fact that our trauma patients come from all over the region by Boston MedFlight, municipal fire and private EMS companies as well as referral facilities while the emergency general surgery patients come primarily from the surrounding community.



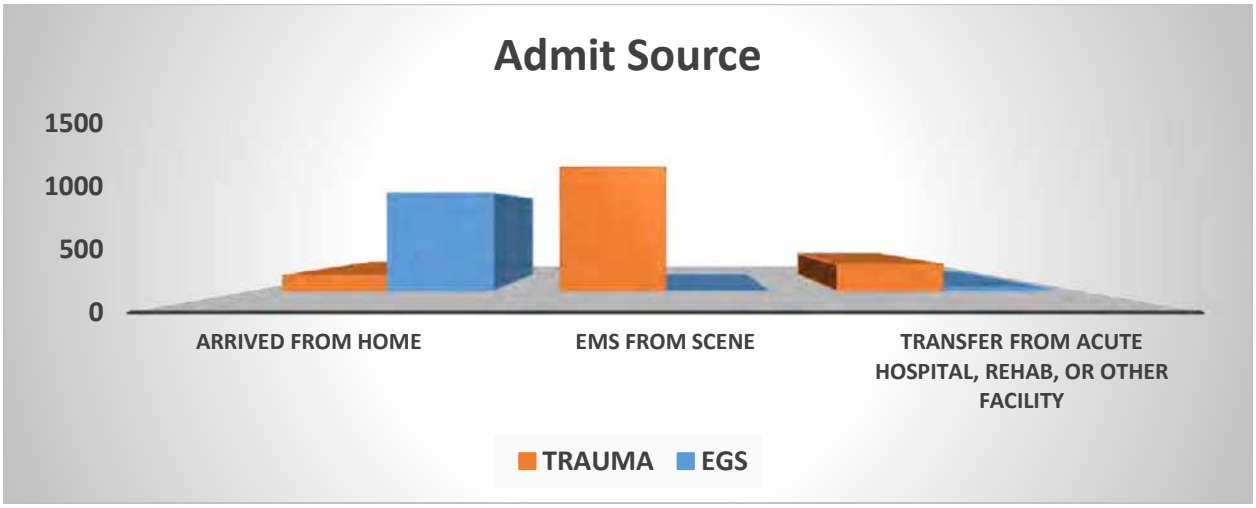


The top five trauma mechanisms of injury are listed and compared to the top five emergency general surgery diagnoses. Interpersonal violence combines the mechanisms of gunshot wounds, stab wounds and assaults and when put together comes in slightly ahead of falls. Falls is the leading mechanism of injury for the Commonwealth of Massachusetts and the nation. Gall bladder disease and appendicitis are the most common emergency general surgery diagnoses and are responsible for most of the operative procedures on this service.

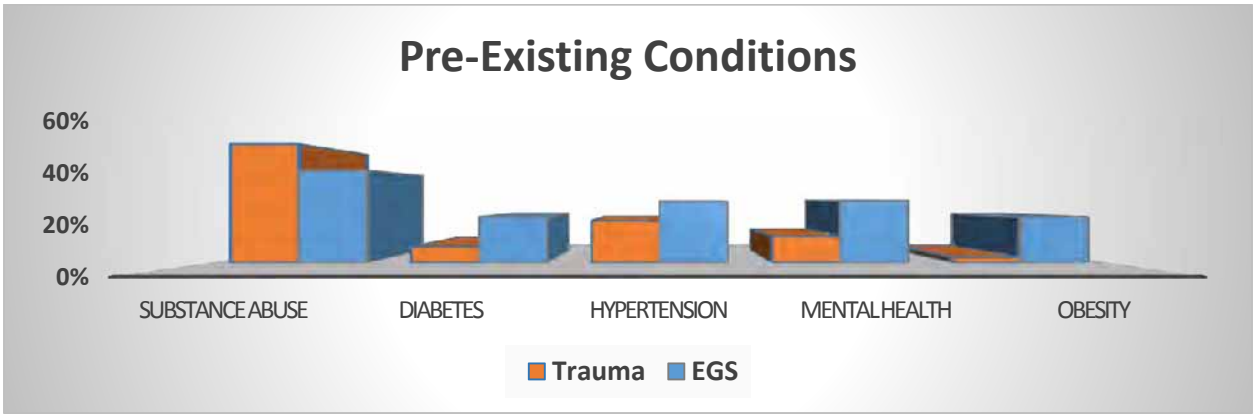


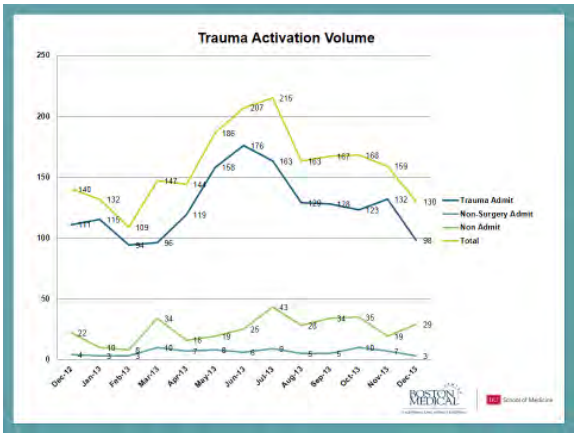


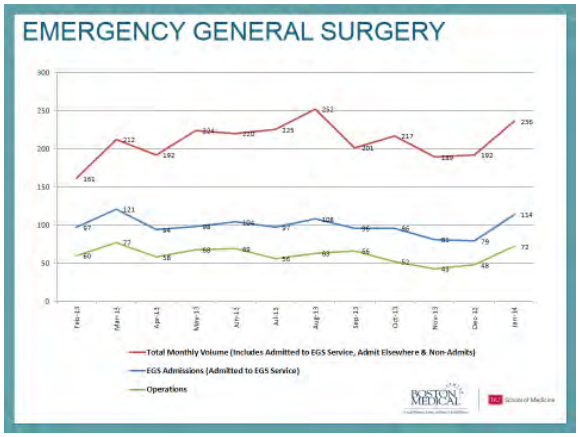
Another interesting but not completely surprising discovery is that most of the emergency general surgery patients self-present from home while the vast majority of trauma patients arrive through the EMS system.



With respect to pre-existing conditions and co-morbidities, most of them belong to the emergency general surgery group, with the exception of substance abuse which (for this report) includes tobacco smoking. The presence of pre-existing conditions contributes to the reasons why emergency general surgery patients may need our services and substance abuse can be a factor that may lead to poor judgment which may lead to trauma patients becoming injured.







Other interesting observations of our data reveal that on average three-fourths or more trauma activations get admitted while the remainder are mostly discharged with a few being admitted for a non-surgical reason. All trauma activations are evaluated and put through our program improvement process. This is to review the efficiency of our trauma activation process and to also monitor our over/under trauma triage activation rates.

Making a similar comparison to the emergency general surgery population, about half of the surgery consults get admitted to a trauma/emergency general surgery physician and a quarter do not require admission and are discharged from the ED. Of those, approximately 75% remain in the BMC system for follow up with surgery or a BMC provider. For example last year we provided over 2,500 surgical consultations, admitted about half of them which then generated approximately 800 operative procedures.

The trauma population accounts for approximately 60% of our admissions but the emergency general surgery patients receive more operative procedures.

Two-thirds of the emergency general surgery patients spend time in a monitored setting and over half receive an operation during their admission.

Our mortality rate for emergency general surgery is 0.7% and 2.8% for trauma compared to 3.2% as the national average from the National Trauma Data Bank.

Research and Education

Research and Education continue to be a vibrant part of our program with many faculty and staff publishing and presenting at local and national meetings. We continue our educational programming as well with both standardized courses and Trauma Video Conferences.

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BOSTON TRAUMA, as our brand and social media platform, has continued to grow and our Facebook, Twitter and blog efforts increase in popularity. BOSTON TRAUMA has over 700

"likes" and re-tweets have gone to audiences around the world. Our Annual Trauma and Emergency Services 2014 calendar has been published and is widely distributed and received throughout the hospital and our referral region.

The Acute Care Surgery program is only successful if our colleagues whom we work with everyday are successful as well. We are grateful to share our mission with such a committed and dedicated group.

For any questions or comments, please feel free to contact us.

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Rachel Raubenhold, *Project Management Specialist*

Misbah Mohammed, MPH, *Project Management Specialist*

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