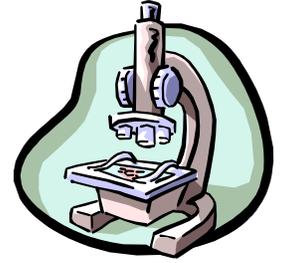




ACADEMIC REVIEW

Department of Surgery USU



Stanley L. Minken, MD, Editor

Editors Notebook

The first rotation of the new academic year began June 24, 2002. The Department has instituted some innovative changes to the surgical curriculum that should create a stronger and more comprehensive surgical rotation. Perhaps the most exciting addition is the formation of small group (preceptor) sessions with senior surgical faculty. These sessions will be held for the 6 weeks on general surgery and should offer students an excellent opportunity to become acquainted with and benefit from the clinical experience and expertise of the senior faculty. Another significant program change includes a revision in the grading scheme. Grades will now be calculated on a 4.0 system with components as follows: Gen. Surg. 40%, Specialties 30%, Final exam 30% (>20th percentile to pass). Other curricula changes will be presented in the coming months.

Graduation was held in May. Of the graduating students, 35 (21%) selected surgery internships. This is an excellent number as the national average is between 15 and 20%. The total number of USUHS grads now exceeds 3200 with an approximate 10 year retention rate of 85%.

The academic faculty remains dynamic with the following changes. Col. Chris Kauffman has retired from the service. Col. (select) Mark Bowyer has assumed the position of Chief, Division of Combat Surgery and Co-Director of the simulation

center. Dr. Stanley L. Minken has assumed the full time position of Chief, Division of Academic Surgery and has been appointed as the Charles G. Rob Professor of Surgery. Dr. William Bolger has been appointed full time Professor of Surgery and Chief, Division of Surgical Research. Dr. Al Seyfer has been appointed full time Professor of Anatomy and Surgery.

Congratulations to Sean O'Donnell, Associate Professor of Surgery and Chief, vision of Vascular Surgery, WRAMC, on his promotion to Colonel.

Words from the Chairman

The 25th Anniversary of the USU Department of Surgery will be celebrated on Friday and Saturday 11-12 October 2002, a celebration that our detractors predicted would never occur. Recognizing the many demands and the limited resources we have combined this with the traditional 20th International Surgical Day dedicated to 25% of the MS-III Class of 2004. Andrew Nicolaidis of St. Mary's Hospital in London will deliver the Charles G. Rob Distinguished Surgical Lecture Friday morning. We will begin the celebration Friday afternoon with the formal dinner Friday evening. Saturday morning will continue our celebration with an open meeting of the Visiting Board at the end of the morning followed by a luncheon. There will be a draft program available by the end of this month. Reservations are required for the two social events

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and these should be confirmed no later than 15 August 2002. Please direct any questions and/or suggestions to the Department of Surgery or to nrich@usuhs.mil. Thank you for your support of our mission in the first 25 years. We look forward to continuing exchanges in the future.

DEPARTMENT NEWS

Dr. John Hutton is the current president of SMECAF

Ms. Sherry Osborne, long time Department of Surgery administrator will assume a part time role beginning in September, 2002.

A search committee is in place to appoint a program director in the Department of Orthopedics at Walter Reed Army Medical Center.

The Department has played an important role in the production of a Discovery Channel series on war surgery dealing with the Vietnam War. The program will be aired within the coming year.

Recent Department sponsored events included the 17th annual Day of Trauma and a dedicated conference on combat wounds and amputations.

GUEST EDITOR

**COMBAT CASUALTY CARE
RESEARCH: MAKING A
DIFFERENCE.**

By

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Injuries constitute an area of major concern for civilian and military health care systems. In the civilian population of the United States injuries are the third leading cause of death. These deaths disproportionately affect the younger, highly productive segment of society. According to the National Center for Health Statistics, injuries are the number one cause of death and disability up to age 44, and more Americans (between the ages of 1-34) are killed by injuries than by all other diseases combined together. The calculated lifetime cost to society due to injuries was \$260 billion in 1995. Currently in developed countries, traumatic death is the leading cause of life years lost. The World Health Organization has also estimated that traumatic death will continue to rise as one of the leading cause of death in the next several decades. Approximately half of these deaths are immediate, or within a few hours following the injury due to traumatic exsanguination. Similarly, hemorrhage remains the single major cause of early and late death in potentially salvageable battlefield casualties. On an average, approximately 20% of combat casualties die in the field. This number has not changed significantly since the American Civil War. Almost 95% of the deaths occur before the injured can be transported to a medical facility (Killed in Action). Hemorrhage accounts for approximately 50% of these deaths and CNS trauma for 35-40%. Even if the injured survives long enough to be transported to the medical facility, hemorrhage still remains the leading cause of acute/late death and complications.

Our team, working at the Trauma Readiness Research Institute, Department of Surgery,

USUHS (TRRI-SURG), has focused its attention on a number of vital issues such as: identifying the best hemostatic dressings, the optimal resuscitation strategy, developing new resuscitation fluids, innovative equipment for field use, clinical application of profound hypothermic arrest, and studying the impact of resuscitation on cellular injury. This "balanced portfolio" approach ensures a healthy mix of immediate and long-term results.

Rarely, research findings are so dynamic that they are accepted and approved before formal publication. The Office of Naval Research and the US Marine War Fighting Laboratory recently identified an urgent need for an effective hemostatic agent for use in Afghanistan. It was clear to these agencies that effective hemorrhage control in the battlefield was very important and could potentially save more lives than any other intervention. The ideal method needed to be suitable for application by a layperson with control of bleeding from a variety of sources within minutes. In addition, the product and technique should be associated with a low complication rate. To conduct this research, we designed a swine model with a complex groin wound, closely simulating the commonly seen combat extremity wound. This model was chosen to take into account the changing pattern of combat injuries. Due to the use of improved body armor and Kevlar helmets by US soldiers, the nature of injuries in Somalia was noticeably different when compared to previous conflicts (e.g. Vietnam). There was a marked decrease in fatal torso injuries while penetrating wounds to the face, groin and pelvis caused significant mortality. Emerging data from the war in Afghanistan is showing similar trends.

Using this animal model of battlefield injury, we were able to

identify QuikClot™ (Z-Medica, Newington, CT) as the most effective hemostatic agent (decrease in mortality from 84% to 0%). Our unpublished findings were considered so impressive by the FDA that QuikClot™ was granted expedited approval for clinical use in May 2002. Acquisition by Marine Corps seems imminent, and this product is already on the ground with the US troops in Afghanistan. It is also being hailed by the business media as a significant Development to watch. Our understanding of shock and resuscitation at the cellular level has improved tremendously over the last 10-15 years. The advancements in medical sciences since WW II have been staggering, yet the percentage of soldiers that are KIA has remained unchanged and the DOW has actually gone up in the recent conflicts. The recent war against terrorism has highlighted the fact that future conflicts will be fought on non-conventional battlefields, against a rapidly mobile enemy, and often in urban settings where rapid evacuation cannot be taken for granted. Today more than ever, combat casualty research requires an investment of extra time, resources and funds. With the changing strategies of engagement in military conflicts, medical care must also evolve to meet the challenges of the future.

For Updated University Continuing Education info, please check the USUHS Web Page link as follows:

<http://www.usuhs.mil/che/schedule.htm>