

Researcher Profile: Samuel Mandell, MD, MPH



Dr. Samuel Mandell

Dr. **Samuel Mandell** has been a member of the Department of Surgery for many years—he first joined the department as a resident in the General Surgery Residency Program, during which time he spent two years as a research fellow in trauma surgery under the mentorship of Dr. **Eileen Bulger**. After residency, Dr. Mandell completed two clinical fellowships, also in the department, in burns as well as surgery and critical care. He then joined faculty in 2014 as Assistant Professor in the Division of Trauma, Burn and Critical Care Surgery, and he is an Associate Member of the **Harborview**

Injury Prevention & Research Center (HIPRC). Throughout his time here, Dr. Mandell has maintained an ongoing passion for both research and education, and in addition to his busy clinical practice he is involved in myriad projects that promise to change the way we deliver both care to our patients and education to our trainees.

“The only constant is change.” This has never been truer than in the area of graduate medical education. The last 15 years have seen substantial changes in graduate medical education (GME), perhaps one of the most significant being ACGME’s 80-hour work week. This change has been coupled with the expansion of new information and surgical techniques such as advanced laparoscopy and robotics. In surgical disciplines, this has led to concerns around providing adequate operative experience to residents to ensure they can operate independently when they graduate. Relevant, targeted feedback is essential to trainee success, yet feedback is often remote from a particular procedural experience or does not focus on a specific type of procedure. Currently there is no standard system to aid faculty in real-time evaluation of trainees or to provide the trainees with the type of feedback that is so critical to their training.

To meet this need, evaluate resident autonomy, as well as obtain procedure-specific data, Dr. Mandell is working with a multi-institutional study group to evaluate a novel evaluation tool, SIMPL. The System for Improving and Measuring Procedural Learning is a smartphone app developed to allow for structured, procedure-specific evaluation and real-time feedback. Following a procedure the resident enters the case information and evaluates their own autonomy and performance using three questions. The app then pings the attending surgeon to evaluate the resident using the same three scales. It also asks the attending to dictate feedback that the resident can listen to anytime. The group includes 14 institutions led by Dr. Jonathan Fryer, Professor of Surgery at Northwestern University. A feasibility study on the implementation of this tool will soon be published in the *Journal of Surgical Education*. It demonstrates that it is possible to roll out this program at multiple institutions with good rates of adoption. Further, more procedural evaluations for surgery residents have been captured than ever before. In addition to his role as a site Principal Investigator, Dr. Mandell also sits on the steering committee for SIMPL and is active in shaping new

applications that will continue to improve this essential aspect of resident education.

In addition to his interest in education, Dr. Mandell is working to improve the quality, safety, and effectiveness of the care provided to trauma and burn patients. Itching is a persistent problem for individuals recovering from burns. Treatment of itch remains an ongoing and significant problem for burn survivors with up to 73% of patients reporting persistent itch two years later. By linking inpatient clinical data to long-term follow up in the **National Institute on Disability, Independent Living, and Rehabilitation Research (NIDDLR)** database, Dr. Mandell and his team have built a new database to evaluate the effectiveness of current strategies to treat long term pain and itch in adult burn survivors. They are beginning to understand that while instituting protocols have changed practice, this is not necessarily changing outcome. Many patients still report high levels of pain or itch despite increased medication use. Understanding these data will lead to more effective treatments for itch.



Team members of the UW Medicine Regional Burn Center (including Dr. Samuel Mandell-right and Dr. Nicole Gibran-left) at Harborview Medical Center.

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As part of his burn work, Dr. Mandell is also the site Principal Investigator for the RE-ENERGIZE study, a multicenter trial of enteral glutamine in severe, life threatening burns. This is a randomized, controlled trial comparing enteral glutamine to placebo. The primary outcome is mortality at 6 months, but quality of life measures will also be captured. The study is currently enrolling and hopes to recruit 2,700 patients over the next 4 years.

Finally, as part of the **American College of Surgeons (ACS) Future Trauma Leaders Program**, Dr. Mandell is working to better identify patterns around preventable deaths. In partnership with Dr. Avery Nathens at University of Toronto and the ACS’s Trauma Quality Improvement Program (TQIP), Dr. Mandell is developing a tool to identify patterns in mortality from trauma centers across the country. The goal of the project is to aggregate rare, preventable, or potentially preventable, causes of death in trauma patients across all trauma centers participating in TQIP. By using data from trauma centers around the country, the tool will identify patterns of preventable deaths that might not otherwise be identifiable at single centers.