PREPARING FOR THE AMERICAN BOARD OF SURGERY FLEXIBLE ENDOSCOPY CURRICULUM: DEVELOPMENT OF MULTI-INSTITUTIONAL PROFICIENCY-BASED TRAINING STANDARDS AND PILOT TESTING OF A SIMULATION BASED MASTERY LEARNING CURRICULUM FOR THE ENDOSCOPY TRAINING SYSTEM.

Brenton R Franklin, MD[1], Sarah B Placek, MD[1], Aimee K Gardner, PhD[2], James R Korndorffer, MD, MHPE[3], Mercy D Wagner, MD[1], Jonathan P Pearl, MD[4], E. Matthew Ritter, MD[1]; [1]Division of General Surgery, USU/Walter Reed Department of Surgery & National Capital Region Simulation Consortium, Bethesda, MD, [2]University of Texas Southwestern Medical Center at Dallas, Dallas TX, [3]Department of Surgery, Tulane University School of Medicine, New Orleans LA, [4]Department of Surgery, University of Maryland School of Medicine, Baltimore MD

Introduction: The Fundamentals of Endoscopic Surgery (FES) exam is a requirement for all residents seeking American Board of Surgery certification beginning in 2018. There is currently no standard training platform or curriculum to ensure high pass rates on the FES exam, and early estimates of failure rates are up to 40%. The purpose of this study was to develop a simulation-based mastery learning (SBML) curriculum for the FES performance exam using the Endoscopy Training System (ETS).

Methods: Eleven experienced endoscopists from multiple institutions and specialties (colorectal surgery, gastroenterology, and gastrointestinal surgery) participated. Endoscopic ability was confirmed with clinical experience, and either FES or Global Assessment of Gastrointestinal Endoscopic Skill (GAGES) scores. All subjects performed 3 trials of each ETS task (scope manipulation(SM), tool targeting (TT), retroflexion (RF), loop reduction (LR), and mucosal inspection (MI)). Performance was used to inform a standard setting process for a SBML training curriculum. Four trainees then completed the pilot curriculum to determine feasibility, and effect on FES performance.

Results: The experienced endoscopists had practiced for 11.2 (+/- 8) years and performed 328 (+/- 306) endoscopies in the past year. Six had taken FES (mean 83.5 +/- 11). Eight were evaluated by GAGES (mean 19.6 +/- 1.1 on 20pt scale). Trial 3 of each task was used to guide the standard setting decision. Training standards were set for each task (SM-121sec, TT-243sec, RF-159sec, LR-261sec, MI-180-480sec, 7 polyps). Each required at least 2 consecutive performances at the designated standard to advance to the next task. Pilot trainees required 29.5 +/- 3.7 training trials distributed over 2.75 +/- 0.5 training sessions to complete the entire SBML curriculum. Despite earning high/passing FES scores at baseline (73.4 +/-7), scores improved post-training (78.1 +/- 5.2; effect size =0.76, p>0.1) but improvement was not statistically discernable given the small sample size.

Conclusions: This SBML curriculum developed using a multi-specialty/institutional standard setting approach resulted in a feasible curriculum producing improved FES scores even in a group of high performers. This curriculum should be applied to novice endoscopists to determine its effectiveness in developing fundamental endoscopic skill and preparing trainees for the FES exam.