Certificate in Applied Surgical Education Leadership

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2020 ABSTRACTS BOOKLET

Become an educational leader.

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The American College of Surgeons (ACS) Division of Education plays a pivotal national leadership role in surgical education, which is exemplified by the Certificate in Applied Surgical Education Leadership (CASEL) initiative. A needs assessment, including a survey of past ACS Surgeons as Educators (SAE) Course participants, confirmed the need for this additional formal training to further develop and strengthen knowledge and skills necessary to be leaders in surgical education. A review of existing, related programs illustrates that the year-long CASEL program offers a unique educational experience with an emphasis on applied surgical education and leadership. Participants are provided content and skill building opportunities using a mentored, hybrid-delivery model, including didactic and enduring materials, independent work, online content and discussions, large and small group activities, and more. With an emphasis on applied learning, participants implement a relevant medical education project at their home institutions, furthering educational innovation and quality patient care.

The mission of CASEL is to promote excellence in surgical education leaders and improve the quality of surgical training and, ultimately, patient care.

The goals of CASEL are to:

- Provide participants with knowledge and skills for leadership roles in surgical education at a level that fosters the highest educational standards
- Improve surgical education at a departmental, institutional, and/or national level by promoting innovation and change
- Positively impact quality and patient safety through lifelong surgical education and training

The following abstracts represent the successful surgical education leadership projects carried out by the 2020 CASEL cohort. Individual projects are a fundamental part of the CASEL program, requiring participants to integrate CASEL educational content, robust mentor guidance, and continuous feedback from CASEL faculty and staff into a meaningful surgical education leadership project at their home institutions. Participant efforts culminate in a formal presentation to CASEL faculty, mentors, and the incoming CASEL class, and they serve as an example to future cohorts. We look forward to the CASEL participants' continued progress and are confident their enhanced knowledge and skills will make a lasting contribution to surgical education excellence.

Sincerely,



Air Samue

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TITLE:

Aligning Expectations, Education, and Evaluation on the Trauma Service

Introduction/Background:

My program has struggled with the quality and relevance of post-rotation evaluations of resident performance. I believe this is due to a lack of intentional teaching and poor awareness of what abilities should be evaluated, resulting in non-specific, non-constructive evaluation comments. My goal was to improve educational expectations and evaluations by aligning resident and faculty educational goals.

Methods:

I chose a service on which all levels of residents rotate. Small group resident interviews and anonymous surveys established a baseline and revealed dissatisfaction with the current experience and evaluations. Faculty underwent a modified Delphi process to identify level-specific knowledge goals and procedural skills appropriate for residents to achieve. Faculty customized a milestones-based evaluation aligned with the revised & level-specific Goals & Objectives. The weekly educational series was revised to reflect the rotation expectations.

Results:

The faculty revised the goals & objectives of the rotation to be level-specific and achievable. Faculty involvement in goal creation led to an increased focus on intra-operative and bedside teaching, and improved the quality of evaluation feedback. The weekly education series became an interactive discussion on goal-related education topics.

Discussion:

Mentoring faculty interest was key to this project. Focusing on the shortcomings of the existing system and identifying improvements which could improve resident education and provide direction to faculty created a motivation and interest in participation in the project and improvement of the process.

Limitations:

I have yet to resurvey the residents and faculty to see if they believe the new system is an improvement. While anecdotal responses show an appreciation of the changes, time will tell if the changes become natural to the service, or slowly degrade.

Conclusion:

Educational goals can be created to flow longitudinally from introduction to the service and set the foundation for improved end-rotation evaluations. Using milestone-based evaluations also provides an understanding of expected growth over subsequent years.

Project Mentor:

Dr. Kim Brown

- 1. Wiggins G, McTighe J. Understanding by Design. 2nd Edition. Alexandria, VA: Association for Supervision and Curriculum Design; 2005.
- 2. Guidolin K, et al. The "teaching time-out": a novel framework in surgical education. Can S Surg. 2020. PMID 32356948
- 3. Specialty specific milestone evaluations. Available at: https://apds.org/program-directors/milestones-2-0/. Accessed November 15, 2021.

Jonathan Cardella, MD, FACS

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TITLE:

Role of the Virtual Sub-Internship in Vascular Surgery

Introduction/Background:

The educational landscape for medical student rotations has significantly changed during the coronavirus disease 2019 (COVID-19) pandemic. Notably, traditional in-person sub-internships (sub-I) for 4th-year medical students were suspended. Our goal was to develop a virtual sub-I curriculum and to evaluate its role as an educational tool as in person sub-I rotations are restarted.

Methods:

The educational components of this sub-I such were as follows: didactics, divisional conferences, attendance in virtual clinics, resident experience lectures and involvement in the operating room (OR) via live streaming using a loupe mounted camera. Pre- and post-rotation surveys were administered to all participants.

Results:

The two-week sub-I provided medical school credit and a comprehensive exposure to vascular surgical topics. The majority of the sub-I comprised live-streaming from the OR the angiography suite (49%, 32 hours). With didactic lectures comprising 19% (12 hours) of the sub-I. The remainder of the rotation (21 hours) comprised of virtual clinic attendance, participation in divisional conferences and independent interactions with residents and faculty. End-of-rotation medical student presentations were mandatory and performance evaluations were offered. A total of 4 students participated in the virtual sub-I, with 100% survey participation. The live stream OR experience was perceived as an effective or extremely

effective educational experience by all participants (n=4). Furthermore, there was unanimity in the effectiveness of a virtual clinic as well as attendance at conferences. Moreover, all participants found the virtual sub-I to be an effective manner to gain exposure to vascular surgery. Participants suggested an increase in exposure to the daily tasks of residents (e.g., morning rounds).

Discussion:

A virtual experience is feasible for vascular surgery rotations and was felt to be effective in terms of education as well as exposure, as determined by participants. It does require a large input of time from faculty and residents but is feasible and participants can receive medical school credit.

Limitations:

This study is limited by the low number of participants. Furthermore, effectiveness in this study was based on participant assessment as opposed to independent testing or changes in practice. (Kirkpatrick Level 1)

Conclusion:

A virtual sub-I proved to be an effective way to provide exposure and educate medical students in vascular surgery. Virtual experiences may have a role as a potential recruitment tool for junior medical students into vascular surgery or as a rotation for those students who face barriers to an in person Sub-I experience.

Project Mentor:

Dr. Paula Termuhlen

- 1. Harding J, Cardella J, Coleman D, Kim GY, Sheahan M, Wooster M, Ottinger M, Dawn Humphries M. How We Do It: A Multicenter National Experience of Virtual Vascular Surgery Rotations. J Surg Educ. 2021 Aug 2:S1931-7204(21)00186-0. doi: 10.1016/j.jsurg.2021.07.004. Online ahead of print.
- 2. Dean RA, Reghunathan M, Hauch A, Reid CM, Gosman AA, Lance SH. Establishing a Virtual Curriculum for Surgical Subinternships. Plast Reconstr Surg. 2020 Oct;146(4):525e-527e.
- 3. Patel S, Chawla A, Unruh M, Guidry L, Brooke A, Lalani A, Kim J, Risher W, Zea N, Torrance B, Palit T, Gwin T, Danos DM, McArthur Sheahan C, Sheahan MG. A Proposed Model for a Comprehensive Virtual Sub-Internship in Vascular Surgery. J Vasc Surg. 2021 Jun 25:S0741-5214(21)00991-5. doi: 10.1016/j.jvs.2021.05.045

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TITLE:

Trauma Simulation Curriculum: A Chest Tube Education Module

Introduction/Background:

Chest tubes are common procedures in trauma and often placed by trainees. Complications are not uncommon and are cited in up to 30% of patients who receive chest tubes. There are very few studies looking at trainee insertion of chest tubes and their complication rates. Resident education efforts aimed at chest tube placement may improve knowledge, skills, and confidence and also may decrease complications.

Methods:

A chest tube education module was developed and implemented. The education module included a 20-minute self-directed slide presentation. A procedural skills checklist was developed to help guide trainees through a 90-minute skills station, with supervised practice of chest tube insertion on the Vata chest trainers. The trainees then completed a post-module evaluation as well as a 7-question knowledge test.

Results:

Pilot testing of the module occurred with 6 PGY-2 surgery residents invited. Half (3 of 6) showed up to the sim center for the module. All self-reported completion of the prelearning slide presentation. The learners successfully used the checklist to complete the skills training, with direct feedback from an educator. All 3 answered 100% of the knowledge test correctly. Evaluations showed all learners agreed/strongly agreed that objectives were met, the experience was valuable, and they would recommend the event to others.

Discussion:

The pilot session attendance was 50% despite having buy-in from the Residency Program Director and staff. Follow-up was done with participants who did not show up. They all stated they got involved with clinical duties and then lost track of time/forgot about the session. In the future, we plan to send more reminders and use multiple modalities to do so.

Improvements in the module itself include alterations to the manikin to ensure the procedure is as close to reality as possible (making skin not as thick, making chest cavity have more space).

Limitations:

Low sample size, single institution study.

Conclusion:

A standardized chest tube placement module may benefit residents by providing a structured, formal session to improve knowledge and skills. Future directions include expanding the module to other residents and repeating the module at several time increments to show retention of skills. Once most/all trainees have received training then a retrospective chart review of trauma patients requiring a chest tube will be done to determine any difference in complication rate before and after the education efforts.

Project Mentor:

Dr. Deb Rooney

REFERENCES:

- 1. Ball CG, Lord J, Laupland KB, et al. Chest tube complications: How well are we training our residents? Can J Surg. 2007;50(6):450-457.
- 2. Kuper TM, Federman N, Sharieff S, et al. Chest tube insertion among surgical and nonsurgical trainees: How skilled are our residents? JSR. 2020;(247):344-349.

DEVELOPMENT OF MODULE:

- 1. Barsuk, et al. Simulation-based mastery learning reduces complications during central venous catheter insertion in a medical intensive care unit.
- 2. Barsuk, et al. Use of simulation-based mastery learning to improve the quality of central venous catheter placement in a medical intensive care unit.
- 3. Barsuk, et al. Use of simulation-based education to reduce catheter-related bloodstream infections.

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TITLE:

Optimization of a Standardized Letter of Recommendation for Faculty Who Wish to Support Candidates Applying to Surgical Residency Programs

Introduction/Background:

While standardized letters of recommendation (SLOR) represent an attempt to streamline the review process and support effective surgical residency candidate selection, current SLOR formats remain inadequate for allowing applicant differentiation due to a ceiling effect in metric scoring. Our study seeks to explore the perspectives of letter writers and readers in order to identify potential causes of these limitations and gain insight into methods for improving the information elicited by SLOR.

Methods:

Multi-specialty / multi-disciplinary pre-clerkship educators, clerkship educators, clerkship directors, and residency program directors will complete a series of focus groups. Focus groups will sequentially involve (1) garnering thoughts from participants after pre-reading assignments from the literature, (2) retrofitting publicly available narrative letters of recommendation (NLOR) into an existing SLOR format to discuss what is gained versus lost, and (3) retrofitting participant written NLOR into a proposed framework based on applicant competencies and characteristics. Transcripts will be analyzed using the constant comparative method.

Results:

Themes will address perceptions of SLOR utility, content comparisons of NLOR versus SLOR, and ideal qualities of SLOR for effective residency candidate selection. Our first focus group was held on June 1st, 2021. We anticipate

completion of all focus groups and data collection by December 31, 2021.

Discussion:

At the culmination of our project, we will outline how the major themes discussed by our focus group participants can help inform improvements to SLOR.

Limitations:

The study design is limited by several factors. The program's roll-out is also limited by several factors. Design limitations include: (1) self-selected, convenience sample and (2) scheduling hurdles – change from focus groups to 1:1 sessions, which resulted in loss of shared perspectives, synergy, and consensus. Programmatic limitations include: (1) ambitious scope, which may take several years, (2) reaching prior decision-makers at ACS to navigate carefully, and (3) program directors adoption will take initiating culture change.

Conclusion:

The CASEL construct and cohort has been vital to advising the direction of this project. The participants of CASEL have also doubled as the participants of this study. Despite scheduling hurdles, we are optimistic that this project will make an impact on the future of candidate selection processes.

Project Mentor:

Dr. Eliza Littleton

- Naples R, French JC, Lipman JM. Best Practices in Letters of Recommendation for General Surgery Residency: Results of Expert Stakeholder Focus Groups. J Surg Educ. 2020 Nov-Dec;77(6):e121-e131.
- 2. Gardner AK, Grantcharov T, Dunkin BJ. The Science of Selection: Using Best Practices From Industry to Improve Success in Surgery Training. J Surg Educ. 2018 Mar-Apr;75(2):278-285.
- 3. Inclan PM, Cooperstein AA, Powers A, Dy CJ, Klein SE. When (Almost) Everyone is Above Average: A Critical Analysis of American Orthopaedic Association Committee of Residency Directors Standardized Letters of Recommendation. JB JS Open Access. 2020 Aug 26;5(3):e20.00013.

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TITLE:

Effectiveness of Surgery Virtual Patient Case-Based Learning Using Commercially Available Virtual Patient Learning Platforms (Aquifer WISE MD) to Enhance the Quality of Surgical Education of 3rd-Year Medical Students and Implementation of a New Didactics Curriculum for GCSOM Surgery Clerkship

Introduction/Background:

We have developed a M3 Virtual Surgery Clerkship curriculum for our school Geisinger Commonwealth School of Medicine to address the educational needs of our medical students during the COVID-19 Pandemic. We have organized a Two-Week Virtual Surgery Curriculum in the summer of 2020, as an introduction to our core M3 Surgery Clerkship. This consisted of several interactive sessions with surgery faculty using the patients from the WISE MD video modules as virtual surgical patients. Each student was assigned to prepare a virtual surgery patient from one of the following WISE MD video modules: Inguinal hernia, Small bowel obstruction, Cholecystitis, Colorectal carcinoma, Diverticulitis, Perianal abscess, Breast cancer, Symptomatic Carotid Stenosis, Abdominal Aortic Aneurysm, Deep Vein Thrombosis and Pulmonary Embolism. Virtual Sessions were organized via ZOOM and Microsoft Teams using a small group format (6 students) in which one of the students presented their assigned patient to the surgery faculty as if there were evaluate in the outpatient clinic or emergency department with discussion about history and physical exam, evaluation and work up, differential diagnosis, surgical management as well as management of postoperative complications. The students have also provided written documentation of a history and physical exam for the patient presented. The initial feedback from both students and faculty regarding the Virtual Surgery Sessions was very positive. My objective with this project was to evaluate the outcomes of 2020

Virtual Surgery Curriculum. We are using this format for the Surgery Clerkship didactic sessions for the 2021–2022 academic year and we are using this feedback for the improvement of this learning experience.

Methods:

I have developed a survey to study the students' perception of the 2020 Virtual Surgery Curriculum. Most of the questions have 4 answers: strongly agree, agree, disagree, and strongly disagree, without a middle, neutral point; however, there was an undecided option. There is a 5 point question of overall assessment of the curriculum and three open-ended questions for more specific feedback. I have used Qualtrics software to develop and distribute the survey to the GCSOM 2022 class at the end of the 2020–2021 academic year.

Results:

The majority of respondents (83.33%) rated overall the Surgery Virtual Curriculum as Excellent, Very Good and Good. Most of the respondents (83.33%) felt that the topics were relevant for their educational needs, and they preferred this format, featuring direct interactions with experts on the topic discussed, over other formats requiring independent learning without an interactive session. Between 66.67 and 91.67% of the respondents felt that their confidence with the evaluation and work up of the conditions discussed was improved as the result of these session, between 58.34 and 75% of the respondents felt their confidence with building a differential diagnosis of the conditions discussed

CONTINUED:

Effectiveness of Surgery Virtual Patient Case-Based Learning Using Commercially Available Virtual Patient Learning Platforms (Aquifer WISE MD) to Enhance the Quality of Surgical Education of 3rd-Year Medical Students and Implementation of a New Didactics

Curriculum for GCSOM Surgery Clerkship

—SILVIU C. MARICA, MD, FACS, FSVS, RPVI

was improved, between 75 and 91.67% of the respondents felt that the confidence in recommending the appropriate management of the conditions discussed was improved, and between 50 and 75% of the respondents felt that they have learned the principle of the surgical treatment of the conditions discussed. A total of 66.67% of the respondents felt that they have learned the principles of management of postoperative complications, and 58.34% of the respondents felt that they have developed their oral presentation skills of a surgical patient. A total of 83.33% of the respondents felt that the Virtual Surgery Sessions have facilitated their transition to the clinical rotations of the surgery clerkship.

Discussion:

The respondents had a positive response (strongly agree or agree) to the questions asked in our survey reflecting satisfaction with this learning modality. We have designed a new didactics curriculum for the 2021–2022 academic year which is now scheduled during the clinical rotations. The Surgery Virtual Patient Case Based learning sessions, in the format described above are a large part of this new curriculum, using the majority of the WISE MD video modules.

Limitations:

The response rate was low, likely due to the administration of the survey almost one year after the delivery of the curriculum.

Conclusion:

The Surgery Virtual Patient Case-Based learning using commercially available virtual patient learning platforms (Aquifer WISE MD) is an effective surgical education tool for the 3rd-year medical students Surgery Clerkship.

Project Mentor:

Dr. Amalia Cochran

Lilah Morris-Wiseman, MD, FACS

Chief of Endocrine Surgery; Associate Professor of Surgery, Department of Surgery, Johns Hopkins University School of Medicine



TITLE:

Values-Directed General Surgery Resident Applicant Review

Introduction/Background:

Our residency program sought a method to review general surgery residency applications in a systematic and reproducible manner to identify applicants whose values will most align with our program values and decrease reliance on metrics.

Methods:

We conducted interviews with key program leaders and those with particular insight on specific groups of applicants (e.g., international medical graduates (IMG), Doctor of Osteopathic Medicine (DO) candidates) to develop initial application screening tools. We conducted an interactive workshop for department faculty, staff, and residents to characterize the mission of our program and determine which values were most important for prospective residents.^{1,2}

Results:

It became clear that we needed to define a clearer mission for our program. The metrics we had been previously using to screen applicants were not aligned with our key values.³⁻⁵ We identified 8 key values that were both important and feasible to determine from an ERAS review (attention to detail, conscientiousness/dependability, professionalism, leadership, teamwork, emotional intelligence, communication skills, and resilience/grit/determination) and 6 additional items that are important but less feasible to obtain from an ERAS

application review (time management, problem solving, adaptability, self-directed learning, cultural fluidity/humility, and integrity). We are refining a tool that links each value with one or more ERAS application elements and can help us to screen applicants. We identified a method to include specific IMG and DO graduates to the application review.

Discussion:

Without a clear program mission, describing the program to prospective applicants and defining who is a good candidate may be haphazard and subject to bias. 6-8 Some objective limitations can be placed on the number of applications screened while keeping the process fair and inclusive. 9

Limitations:

Understanding the success of a new method of residency recruitment requires at least one application cycle for true assessment.

Conclusion:

Values-based application review is both important and feasible; additional work is needed to determine whether the review can effectively differentiate between applicants.

Project Mentor:

Dr. Karen Brasel

- Association of American Medical Colleges. Applicant Criteria Identification and Prioritization. Available at: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.aamc. org%2Fsystem%2Ffiles%2F2020-08%2Faa-member-capacity-building-holistic-review-activities-residents-1-081420.docx. Accessed November 19, 2021.
- Gardner AK, Cavanaugh KJ, Willis RE, et al. Great Expectations? Future Competency Requirements Among Candidates Entering Surgery Training. Journal of Surgical Education. 2020;77:267-272.
- 3. Gardner AK. How Can Best Practices in Recruitment and Selection Improve Diversity in Surgery? Ann Surg. 2018;267:e1-e2
- 4. Spector AR, Railey KM. Reducing Reliance on Test Scores Reduces Racial Bias in Neurology Residency Recruitment. J Nat Med Assoc. 2019;111:471-474.
- 5. Quesada PR, Solis RN, Ojeaga M, et al. Overemphasis of USMLE and Its Potential Impact on Diversity in Otolaryngology. OTO Open; 5. Epub ahead of print 2021. DOI: 10.1177/2473974X211031470
- 6. Joshi ART, Vargo D, Mathis A, et al. Surgical Residency Recruitment—Opportunities for Improvement. J Surg Ed. 2016;73:e104-e110.
- 7. Dinh J, Salas E. Prioritization of Diversity During the Residency Match: Trends for a New Workforce. J Grad Med Ed. 2019;11:319-323.
- 8. Doolittle BB. Who Gets Chosen for Your Residency and Who Gets Overlooked? Implicit Bias in Medical Education. NEJM Knowledge Plus. Available at: https://knowledgeplus.nejm.org/blog/implicit-bias-in-medical-education-who-gets-chosen-and-who-gets-overlooked/. Accessed December 2, 2020.
- 9. Smith KW, Amini R, Banerjee M, et al. The Feasibility of Blinding Residency Programs to USMLE Step 1 Scores During GME Application, Interview, and Match Processes. J Grad Med Ed; 13. Epub ahead of print April 2, 2021. DOI: 10.4300/JGME-D-20-00653.1

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TITLE:

Implementation of Education Value Units in the Community Health Care Setting: A Feasibility Study

Introduction/Background:

Cultural change is a monumental task especially when starting new residencies at an institution without prior educational milieu or scholarly pursuits. The ACGME requires an environment of inquiry which is particularly challenging for health systems that do not yet highly value scholarly activity. Yet faculty engagement in scholarly activity is requisite for accreditation and of paramount importance to trainee experience. The goals of this project were to: 1. Incentivizes scholarly activity as defined by the ACGME, 2. Utilizes existing PPG/Parkview compensation incentive structure and 3. Remains budget neutral and does not require additional funding source (I recognize its significance especially during COVID).

Methods:

With the engagement of stakeholders and institutional leadership including the chief physician executive, designated institutional official, graduate medical education executive council, corporate counsel for physician compensation, we will implement a scoring rubric for academic pursuits to satisfy the citizenship bonus. The design of the rubric will be conducted in an iterative process. The initial version will be based on existing literature. We will incorporate local factors, particular those unique to community tertiary centers. Outcomes of interest include eventual tracking of scholarly activity as outlined by ACGME.

Results:

A revised version of the scoring rubric was ratified by the executive compensation committee after consulting our original rubric and an external compensation consultant. Overall, 30% of annual incentive bonus structure is now dependent on pursuit of academic activity including mentorship and pursuit of scholarly activity.

Discussion:

While financial incentive is not the only manner by which to motivate busy surgeons to meaningfully engage resident education and scholarly pursuits, it is a tangible method by which to recognize the added effort. In a community setting where training is new, implementing academic component is particularly advantageous as it utilizes a familiar, existing incentive structure.

Limitations:

We do not have any data on the performance of incentive program based on this new paradigm, so it is uncertain if this will be a "success."

Conclusion:

It is feasible to implement an academic component to existing incentive structure in a community setting.

Project Mentor:

Dr. Mary Klingensmith

- 1. Brenner AM, Beresin EV, Coverdale JH, et al. Time to Teach: Addressing the Pressure on Faculty Time for Education. Academic Psychiatry. 2018/02/01;42(1):5-10.
- 2. Morales DX, Grineski SE, Collins TW. Faculty Motivation to Mentor Students Through Undergraduate Research Programs: A Study of Enabling and Constraining Factors. Res High Educ. 2017;58(5):520-544.
- 3. Chen JG, Saidi A, Rivkees S, Black NP. University- Versus Community-Based Residency Programs: Does the Distinction Matter? J Grad Med Educ. 2017 Aug;9(4):426-429.
- 4. Luft HS. Economic incentives to promote innovation in healthcare delivery. Clinical orthopaedics and related research. 2009 Oct;467(10):2497-2505.
- 5. Reschovsky JD, Hadley J, Landon BE. Effects of compensation methods and physician group structure on physicians' perceived incentives to alter services to patients. Health Serv Res. 2006;41(4 Pt 1):1200-1220.
- 6. Regan L, Jung J, Kelen GD. Educational Value Units: A Mission-Based Approach to Assigning and Monitoring Faculty Teaching Activities in an Academic Medical Department. Academic medicine: Journal of the Association of American Medical Colleges. 2016 Dec;91(12):1642-1646

Luise Pernar, MD, FACS

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TITLE:

An Educational Framework for Teaching Assistant Cases

Introduction/Background:

Senior general surgery residents must complete 25 teaching assistant (TA) cases during the last two years of training, guiding a junior resident through a procedure. The purpose of this work was to develop an educational framework for TA cases to optimize their educational benefit.

Methods:

A literature review was conducted using four databases; 25 articles were included.

Anonymized interviews exploring TA cases conducted with resident (5) and attending surgeons (16) were qualitatively analyzed. ATLAS.ti software was used to code interviews using the codes 'permission to participate in TA cases,' 'benefits of participating,' and 'attending role.' Coded content was sub-categorized and grouped by themes.

Based on information from the literature review and qualitative analysis, a best practice guide (job aid) and assessment tools for TA cases were developed.

Results:

The topics of focus of the literature on TA cases are case numbers and safety. The discussions of papers allude to perceived benefits of TA cases, including learning to teach, to develop technical and non-technical skills, and to promote

autonomy. Topics that also emerged from the qualitative interview analysis. The literature review, also supported by the interview analysis, reveals that residents are more likely to be granted TA opportunities if they show themselves worthy of entrustment.

Discussion:

The work elucidates aspects of TA cases that have not previously been emphasized. The literature review and qualitative analysis allowed construction of a job aid to promote scaffolding of the TA experience. The assessment tools complement the job aid.

Limitations:

Limitations of the study include the small cohort of interview subjects and potential bias, as those who agreed to be interviewed may feel particularly strongly about the topic.

Conclusion:

A comprehensive job aid to help senior residents prepare for the TA role and complementary assessment tools have been developed. Both have been disseminated locally.

Project Mentor:

Dr. Loretto Glynn

REFERENCES: (SELECTED)

- 1. American Board of Surgery. Booklet of Information Surgery. Available at: http://www.absurgery.org/xfer/BookletofInfo-Surgery.pdf. Accessed January 15, 2021.
- 2. Jayanthi P, Patel MB, Mittal V. Effect of Establishing a Teaching Assistant Case Minimum on General Surgery Residents: 18-Year Comparison of a Single Institution to National Data. J Am Coll Surg. 2020;231(1):172-178. doi:10.1016/j.jamcollsurg.2020.04.036
- 3. Mahmoud A, Ward C, Padmesh H, Daher M. Safety and Feasibility of the Teaching Assistant Role of Senior Surgical Residents: A Prospective Randomized Study. *J Surg Educ.* 2012;69(2):249-252. doi:10.1016/j.jsurg.2011.11.002
- 4. Sterkenburg A, Barach P, Kalkman C, Gielen M, ten Cate O. When Do Supervising Physicians Decide to Entrust Residents With Unsupervised Tasks? Acad Med. 2010;85(9):1408-1417. doi:10.1097/ACM.0b013e3181eab0ec
- Roberts NK, Williams RG, Kim MJ, Dunnington GL. The briefing, intraoperative teaching, debriefing model for teaching in the operating room. J Am Coll Surg. 2009;208(2):299-303. doi:10.1016/j.jamcollsurg.2008.10.024
- 6. van Merriënboer JJG, Sweller J. Cognitive load theory in health professional education: design principles and strategies. Med Educ. 2010;44(1):85-93. doi:10.1111/j.1365-2923.2009.03498.x
- 7. Anderson CI, Gupta RN, Larson JR, et al. Impact of objectively assessing surgeons' teaching on effective perioperative instructional behaviors. *JAMA Surg.* 2013;148(10):915-922. doi:10.1001/jamasurg.2013.2144
- 8. George BC, Teitelbaum EN, Meyerson SL, et al. Reliability, Validity, and Feasibility of the Zwisch Scale for the Assessment of Intraoperative Performance. *J Surg Educ*. 2014;71(6):e90-e96. doi:10.1016/j.jsurg.2014.06.018
- 9. Horwitz IB, Horwitz SK, Daram P, Brandt ML, Brunicardi FC, Awad SS. Transformational, transactional, and passive-avoidant leadership characteristics of a surgical resident cohort: analysis using the multifactor leadership questionnaire and implications for improving surgical education curriculums. *J Surg Res.* 2008;148(1):49-59. doi:10.1016/j.jss.2008.03.007

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TITLE:

Choosing Surgical Leadership Curriculum in a Rural Residency Program

Introduction/Background:

Surgeons have a unique opportunity for leadership, leading teams within the operating room, trauma bay, or surgical intensive care unit. However, though leaderships skills are expected at the start of a surgeon's practice, formal leadership training has not historically been included in residency curricula. Thus, a focus on the need for this training during residency has increased, and multiple approaches have been incorporated. However, rural surgeons face unique challenges, and no organized curriculum has been developed to address the specific leadership skills needed. With 60 million Americans living in rural areas and only 8% of the general surgeon workforce practicing in these communities, many of whom will soon retire, rural surgery leadership training may prove critical in providing care to these communities. The goal of this study was to characterize the leadership development experiences and perceived needs for skills development of residents in a rural general surgery program.

Methods:

A one-hour focus group was conducted, recorded and transcribed. Participants included 14 surgical residents ranging in PGY1 to PGY5 at a rural general surgery residency program. Topics included prior leadership training, skills and qualities specific to rural surgery leadership, and ways leadership can improve equality within rural surgery. A thematic analysis was then performed.

Results/Discussion:

Three participants had attended the ACS Residents as Teachers and Leaders conference. No participants reported receiving any other formal leadership training during residency. Due to limited resources and personnel in rural settings as well as the often greater perceived role of physicians within rural communities, skills and qualities that the participants found important in rural leadership were emotional intelligence, empathy, an attitude of service, the ability to work strategically with care and creativity, developing capability, having a broad and flexible skill set, relationship building and community integration, patient advocacy, and engaging the team while inspiring a shared purpose. These skills are important because rural surgery is personal. Rural surgeons know their patients living in a community and their practice affords no anonymity or objectivity.

Limitations:

We have 17 surgical residents in our rural program and this focus group was completed in one program.

Conclusion:

Awareness has recently grown regarding the importance of leadership development in residency. In this focus group of rural surgical residents, the development of leadership skills was universally valued with a particular focus on those that confront the challenges practitioners in rural environments face. It also highlights the importance of leadership training in rural surgery programs. With this information, we can develop an interventional arm to create intentional curriculum to address this need. Further research should be completed to assess whether leadership training helps prepare residents for these unique challenges and helps lower attrition rates of rural surgeons.

Project Mentor:

Dr. Sarah Jung

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TITLE:

Creation and Implementation of an Online Tool for Feedback on Resident Teaching

Introduction/Background:

Residents are expected to teach are not confident in their abilities. The impact of programs to improve teaching quality are not well quantified. This project investigates the feasibility and impact of an observed Feedback Tool (FT) on resident teaching.

Methods:

A FT was created based on faculty, residents, and students focus groups. Clerkship students and residents are given links and QR code stickers to use the FT. Following clerkship grade submission, residents are given their feedback. Use and utility are evaluated by students and residents.

Results:

The FT (Figure 1) was implemented on the surgery clerkship. The first group of 11 students completed 40 evaluations of 21 residents (of 50).

The median ratings on the scaled questions were all 100. The median number of positive behaviors was 10 of 16 (4-14), with "It was clear that the goal was teaching" checked most frequently (39) and "Use of images/drawings" and "Given tools/resources for further study" checked least (7).

Response on post-clerkship survey was 55%; 100% used the FT and were prompted by resident request, weekly reminder, or initial discussion (all 4). Motivation was interest in improving the learning environment (4), helping the specific resident (4), or good teaching experience (5). 80% said the tool was the right length and all felt it was intuitive. Residents have not received ratings nor been asked for feedback yet.



Figure 1

Discussion:

Implementing a FT on resident teaching is feasible; it is easy to use and relevant.

Limitations:

This is a small pilot study with possible bias in which residents/students use the tool. Durability and utility are unknown.

Conclusion:

It appears feasible to obtain on the job feedback on resident teaching from medical students.

Project Mentor:

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TITLE:

Effects of a Focused Mentor Remediation Program on Academic Performance

Introduction/Background:

The American Surgery In-Service Exam (ABSITE) performance is an important marker of medical knowledge deficiency. We hypothesized our focused academic remediation program (FARP) would be successful in improving scores and medical knowledge.

Methods:

This was a retrospective review of three academic cycles (2018-2021). Residents were entered into our FARP based on previous ABSITE scores (<30th percentile). Demographics were collected and compared to residents not in FARP. Weekly assignments in SCORE and Decker were given to residents. Completion compliance was tracked and compared against outcomes. Additionally, residents were required to attend one of two available faculty sessions and meet with a faculty mentor.

Results:

There were 26 unique surgical residents enrolled in FARP over three years. No difference was seen in number of females (16 vs. 14; p=0.58) and STEP 2 scores (243 vs. 242; p > 0.05) between residents in FARP, and residents

not in FARP. Residents in FARP had significantly lower STEP 1 (230 vs. 237; p=0.0029) and STEP 3 (214 vs. 217; p=0.0005) than those residents not in FARP. Participation in the program correlated with higher ABSITE scores (TWIS completion, 77% vs. 53%, Decker 80% vs. 49%(p<0.05)). Continued participation post-ABSITE (February-June) correlated with a continued ABSITE score above the 30th percentile (p<0.05).

Discussion:

In conclusion, surgical residents that participated more in this program especially with regards to using the online resources had improvement in their ABSITE score above the 30th percentile. Scoring above this threshold is predictive of successful passage of the American Board of Surgery Qualifying Exam.

Limitations:

We have limited number of residents in the program and so gives a limited sample size.

Project Mentor:

Dr. Susan Steinemann

- 1. Chang D, Kenel-Pierre S, Basa J, et al. Study habits centered on completing review questions result in quantitatively higher American Board of Surgery In-Training Exam scores. J Surg Educ. Nov-Dec 2014;71(6):e127-31. doi:10.1016/j.jsurg.2014.07.011
- 2. de Virgilio C, Chan T, Kaji A, Miller K. Weekly assigned reading and examinations during residency, ABSITE performance, and improved pass rates on the American Board of Surgery Examinations. *J Surg Educ*. Nov-Dec 2008;65(6):499-503. doi:10.1016/j.jsurg.2008.05.007
- 3. Decoteau MA, Rivera L, Umali K, Chan AD, Soballe P, Ignacio RC. A multimodal approach improves American Board of Surgery In-Training Examination scores. Am J Surg. Feb 2018;215(2):315-321. doi:10.1016/j.amjsurg.2017.10.039
- 4. Harthun NL, Schirmer BD, Sanfey H. Remediation of low ABSITE scores. Curr Surg. Sep-Oct 2005;62(5):539-542. doi:10.1016/j.cursur.2005.04.020
- 5. Kim JJ, Gifford ED, Moazzez A, et al. Program Factors That Influence American Board of Surgery In-Training Examination Performance: A Multi-Institutional Study. J Surg Educ. Nov-Dec 2015;72(6):e236-242. doi:10.1016/j.jsurg.2015.06.014
- 6. Kim JJ, Kim DY, Kaji AH, et al. Reading Habits of General Surgery Residents and Association With American Board of Surgery In-Training Examination Performance. *JAMA Surg.* Sep 2015;150(9):882-889. doi:10.1001/jamasurg.2015.1698
- 7. Kosir MA, Fuller L, Tyburski J, Berant L, Yu M. The Kolb learning cycle in American Board of Surgery In-Training Exam remediation: the Accelerated Clinical Education in Surgery course. Am J Surg. Nov 2008;196(5):657-662. doi:10.1016/j.amjsurg.2008.07.004
- 8. Sugar JG, Chu QD, Cole PA, Li BD, Kim RH. Effect of January vacations and prior night call status on resident ABSITE performance. J Surg Educ. Nov-Dec 2013;70(6):720-724. doi:10.1016/j. jsurg.2013.06.013
- 9. Wasicek PJ, Wise ES, Kavic SM. A Structured Remediation Program Results in Durable Improvement of American Board of Surgery In-Training Examination (ABSITE®)
 Performance. Am Surg. Jun 2019;85(6):606-610

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TITLE:

Southeast Michigan General Surgery Resident Skills Course

Introduction/Background:

Multi-institutional collaboration in graduate medical education has been shown to be beneficial^{1,2} and is often used by surgical residency programs for mock oral board exams.³⁻⁴ Southeast Michigan Center for Medical Education (SEMCME) is a medical education consortium which includes 13 hospitals, 277 residency/fellowship programs in 90 specialties. General Surgery residents participate in a SEMCME sponsored Mock Oral Exam multi-institutional course that has been beneficial and cost-effective.⁵ This collaborative method has not been well-studied as it relates to technical skills assessment. We have developed a multi-institutional technical skills course that allows for broad exposure to faculty educators, standardization of skills, and robust skills assessment.

Methods:

The course will be conducted in one half day and participants will include all PGY 2 residents from the 6 participating surgical residencies in the SEMCME consortium. Faculty and resident instructions would be distributed prior to the course, and a brief didactic on the day of the course will include an explanation of each station. The faculty will be oriented to the scoring tools. The residents will be divided into groups and rotate through 6 stations, each proctored by faculty from one of the participating institutions, who will complete an assessment for each participant.

Results:

The course has not yet taken place, but a practice run of the course will occur with a small group of residents in September.

Discussion:

The technical skills included in this course have been described in the literature^{6,7} and/or the ACS/APDS curriculum. This course allows for the assessment of each of these skills performed by a large group of residents from multiple institutions.

Project Mentor:

Dr. Ranjan Sudan

- 1. Salles, et al. Multi-institutional Surgical Education Interventions, A Scoping Review. Ann Surg. 2019;270:257-269.
- 2. Lu, et al. Standardized Multi-Institutional Mock Oral Examination: A Feasible and Valuable Educational Experience for General Surgery Residents. J Surg Ed. 000:1-9.
- 3. Falcone, et al. Validity and Interrater Reliability of a Regional Mock Oral Board Examination. J Surg. 70:402-407.
- 4. Kimbrough, et al. National Landscape of General Surgery Mock Oral Examination Practices: Survey of Residency Program Directors. J Surg Ed. 2018;75:e54-e60.
- 5. Subhas, at al. Benefits of mock oral examinations in a multi-institutional consortium for board certification in general surgery training. Am Surg. 2009 Sept;75(9):817-821.
- 6. Webb, et al. Protected block curriculum enhances learning during general surgery residency training. Arch Surg. 2009 Feb;144(2):160-166
- 7. Vaidya, et al. Current Status of Technical Skills Assessment Tools in Surgery: A Systematic Review. JSR. Feb 2020;246:242-378.

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