Tufts University | School of Medicine

OEA Faculty Development

Faculty Medical Education Journal Club

Dear TUSM Faculty,

We hope you will enjoy the fifth edition of our quarterly Medical Education Faculty Journal Club. **Please keep us posted with your publications so that we announce them in future journal editions as well.** In addition, let us know if you would like to meet with a group of peers at TUSM to discuss these articles and share your insights (we will also be able to provide a conference call number to join this journal club discussion if this would best work for you).

For questions/comments/suggestions for improvement, please contact Maria at Maria.Blanco@tufts.edu. We look forward to learning from your constructive feedback on this initiative!

Warmly,

Amanda & Maria

TUSM Faculty Medical Education Journal Club – February 2015

What is new in the Lit?!

Ahmadi S-F, Baradaran HR, Ahmadi E. Effectiveness of teaching evidence-based medicine to undergraduate medical students: A BEME systematic review. Medical Teacher. 2015, 37(1): 21–30. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.3109/0142159X.2014.971724.

The authors claim that, despite the widespread teaching of evidence-based medicine (EBM) to medical students, the relevant literature has not been synthesized appropriately as to its value and effectiveness. In this Best Evidence Medical Education (BEME) Guide, the authors systematically reviewed the literature regarding the impact of teaching EBM to medical students on their EBM knowledge, attitudes, skills and behaviors. Results indicated that 10,111 potential studies were initially found, of which 27 were included in the review. Six studies examined the effect of clinically integrated methods, of which five had a low quality and the other one used no validated assessment tool. Twelve studies evaluated the effects of seminars, workshops and short courses, of which 11 had a low quality and the other one lacked a validated assessment tool. Six studies examined e-learning, of which five having a high or acceptable quality reported e-learning to be as effective as traditional teaching in improving knowledge, attitudes and skills. One robust study found problem-based learning less effective compared to usual teaching. Two studies with high or moderate quality linked multicomponent interventions to improved knowledge and attitudes. No included study assessed the long-term effects of the teaching of EBM. The authors conclude that some EBM teaching strategies have the potential to improve knowledge, attitudes and skills in undergraduate medical students, but the evidenced base does not demonstrate superiority of one method. There is no evidence demonstrating transfer to clinical practice.

Aylward M, Nixon J, Gladding S. An Entrustable Professional Activity (EPA) for Handoffs as a Model for EPA Assessment Development. Acad Med. 2014 Oct;89(10):1335-40. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000317

The American Board of Internal Medicine and American Board of Pediatrics milestones, and the concept of entrustable professional activities (EPA)—skills essential to the practice of medicine that educators progressively entrust learners to perform—provide new approaches to assessing outcomes. The authors argue that although some defined EPAs exist for

internal medicine and pediatrics residency programs, the continued development and implementation of EPAs remains challenging. As residency programs are expected to begin reporting milestone-based performance, however, they will need examples of how to overcome these challenges. The authors describe a model for the development and implementation of an EPA using the resident handoff as an example. The model includes nine steps: selecting the EPA, determining where skills are practiced and assessed, addressing barriers to assessment, determining components of the EPA, determining needed assessment tools, developing new assessments if needed, determining criteria for advancement through entrustment levels, mapping milestones to the EPA, and faculty development. Following implementation, 78% of interns at the University of Minnesota Medical School were observed giving handoffs and provided feedback. The authors suggest that this model of EPA development—which includes engaging stakeholders, an iterative process to describing the behavioral characteristics of each domain at each level of entrustment, and the development of specific assessment tools that support both formative feedback and summative decisions about entrustment—can serve as a model for EPA development for other clinical skills and specialty areas.

Chamberland M, Mamede S, St-Onge C, Setrakian J, Bergeron L, Schmidt H. Self-explanation in learning clinical reasoning: the added value of examples and prompts. Medical Education 2015: 49: 193–202. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1111/medu.12623.

The authors conducted a study aimed at assessing the impact on medical students' diagnostic performance of: (i) combining students' self-explanations (SEs) with their listening to examples of residents' SEs, and (ii) the addition of prompts (specific questions) while working with examples. The study consisted of a training phase and an assessment phase conducted 1 week later. In the training phase, 54 Year 3 medical students were randomly assigned to one of three groups. In all groups, students first solved four clinical cases using SE. Subsequently, Group 1 listened to examples of residents' SEs with prompts; Group 2 listened to examples of residents' SEs without prompts, and the control group solved word puzzles. Then, all students again solved the same four cases. One week later, all students solved four similar and four different cases. Students' diagnostic performance and diagnostic accuracy scores were assessed for each case at each time-point. Based on the study findings, the authors conclude that self-explanation seems to be an effective technique to help medical students learn clinical reasoning. Its impact is increased significantly by combining it with examples of residents' SEs and prompts. The authors also suggest that although students' exposure to examples of clinical reasoning is important, their 'active processing' of these examples appears to be critical to student's learning from them.

Day FC, Srinivasan M, Der-Martirosian C, Griffin E, Hoffman JR, Wilkes, MS. A Comparison of Web-Based and Small-Group Palliative and End-of-Life Care Curricula:A Quasi-Randomized Controlled Study at One Institution. Acad Med. 2015;90(3):00–00. First published online: http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000607.

The authors conducted a study to compare the effect of Web-based eLearning versus small-group learning on medical student outcomes. Palliative and end-of-life (PEOL) education is ideal for this comparison, given the uneven access to PEOL experts and content nationally. In 2010, the authors enrolled all third-year medical students at the University of California, Davis School of Medicine into a quasi-randomized controlled trial of Web-based interactive education (eDoctoring) compared with small-group education (Doctoring) on PEOL clinical content over two months. Students participated in three 3-hour PEOL sessions with similar content. Outcomes included a 24-item PEOL-specific self-efficacy scale with three domains (diagnosis/treatment [Cronbach alpha = 0.92; CI: 0.91–0.93], communication/ prognosis [alpha = 0.95; CI: 0.93–0.96], and social impact/self-care [alpha = 0.91; CI: 0.88–0.92]); 8 knowledge items; 10 curricular advantage/disadvantages; and curricular satisfaction (both students and faculty). Findings showed equivalent gains in self-efficacy and knowledge between students participating in a Web-based PEOL curriculum in comparison with students learning similar content in a small-group format. The authors conclude that Web-based curricula can standardize content presentation when local teaching expertise is limited, but it may lead to decreased user satisfaction.

Dornan T, Tan N, Boshuizen H, Gick R, Isba R, Mann K, Scherpbier A, Spencer J, Timmins E. How and what do medical students learn in clerkships? Experience based learning (ExBL). Adv in Health Sci Educ (2014) 19(5):721–749. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1007/s10459-014-9501-0.

The authors aimed at developing a blueprint for clerkship education in ambulatory and inpatient settings, and in single encounters, traditional rotations, or longitudinal experiences. They identified 548 causal links between conditions, processes, and outcomes of clerkship education in 168 empirical papers published over 7 years, and synthesized a theory of how students learn. The authors suggest that students do so when they are given affective, pedagogic, and

organizational support. Affective support comes from doctors' and many other health workers' interactions with students. Pedagogic support comes from informal interactions and modelling as well as doctors' teaching, supervision, and precepting. Organizational support comes from every tier of a curriculum. Core learning processes of observing, rehearsing, and contributing to authentic clinical activities take place within triadic relationships between students, patients, and practitioners. The phrase 'supported participation in practice' best describes the educational process. Much of the learning that results is too tacit, complex, contextualized, and individual to be defined as a set of competencies. The authors conclude that clerkship education takes place within relationships between students, patients, and doctors, supported by informal, individual, contextualized, and affective elements of the learned curriculum, alongside formal, standardized elements of the taught and assessed curriculum. This research provides a blueprint for designing and evaluating clerkship curricula, as well as helping patients, students, and practitioners collaborate in educating tomorrow's doctors.

Gaglani SM, Topol EJ. iMedEd: The Role of Mobile Health Technologies in Medical Education. Acad Med. 2014;89(9):1207-09. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000361.

The authors claim that, while much discussion has been devoted to how Mobile health (mHealth) technologies will impact the practice of medicine, surprisingly little has been written on the role these technologies will play in medical education. In this commentary, the authors describe the opportunities, applications, and challenges of mHealth apps and devices in medical education and argue that medical schools should make efforts to integrate these technologies into their curricula. The authors maintain that, by not doing so, medical educators risk producing a generation of clinicians underprepared for the changing realities of medical practice brought on by mHealth technologies.

Kost A, Chen FM. Socrates Was Not a Pimp: Changing the Paradigm of Questioning in Medical Education. Acad Med. 2015 Jan;90(1):20-4. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000446.

The authors explain that the slang term "pimping" is widely recognized by learners and educators in the clinical learning environment as the act of more senior members of the medical team publicly asking questions of more junior members. The authors argue that, although questioning as a pedagogical practice has many benefits, pimping, as described in the literature, evokes negative emotions in learners and leads to an environment that is not conducive to adult learning. They propose explicitly separating pimping from the larger practice of questioning, and make three recommendations for improving questioning practices. First, educators should examine the purpose of each question they pose to learners. Second, they should apply historic and modern interpretations of Socratic teaching methods that promote critical thinking skills. Finally, they should consider adult learning theories to make concrete changes to their questioning practices. These changes can result in questioning that is more learner centered, aids in the acquisition of knowledge and skills, performs helpful formative and summative assessments of the learner, and improves community in the clinical learning environment.

Nixon J, Wolpaw T, Schwartz A, Duffy B, Menk J, Bordage G. SNAPPS-Plus: An Educational Prescription for Students to Facilitate Formulating and Answering Clinical Questions. Acad Med. 2014 Aug; 89(8):1174-9. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000362.

The authors analyzed the content and quality of PICO-formatted questions (Patient–Intervention–Comparison–Outcome), and subsequent answers, from students' educational prescriptions added to the final SNAPPS* Select step (SNAPPS-Plus). Students were instructed to use educational prescriptions to complement their bedside SNAPPS case presentations during their inpatient rotation. The authors concluded that the SNAPPS-Plus technique was easily integrated into the inpatient clerkship structure and guaranteed that virtually every case presentation following this model had a well-formulated question and answer.

*SNAPPS: is a learner-centered model for case presentations to the preceptor that consists of six steps: (1) Summarize briefly the history and findings; (2) Narrow the differential to two or three relevant possibilities; (3) Analyze the differential by comparing and contrasting the possibilities; (4) Probe the preceptor by asking questions about uncertainties, difficulties, or alternative approaches; (5) Plan management for the patient's medical issues; and (6) Select a case-related issue for self-directed learning.

Patel MS, Arora V, Patel MS, Kinney JM, Pauly MV, Asch DA. The Role of MD and MBA Training in the Professional Development of a Physician: A Survey of 30 Years of Graduates From the Wharton Health Care Management Program.

Acad Med. 2014 Sep;89(9):1282-6.
http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1097/ACM.0000000000000366.

Given that the number of medical schools offering MD and MBA training has increased fivefold in the last two decades, the authors evaluated graduates' perceptions of the role of such training on their career and professional development. In 2011, the authors surveyed physician graduates from the Wharton School MBA Program in Heath Care Management at the University of Pennsylvania from 1981 to 2010. Survey responses were analyzed and evaluated using grounded theory. Graduates with an MD and MBA reported mostly positive attitudes towards their training, and many were pursuing leadership and primarily nonclinical roles later in their careers. The authors conclude that these findings reveal new insights for policies affecting physician workforce, and that further study is necessary to evaluate whether similar trends exist more broadly.

van der Zwet J, De la Croix A, de Jonge L, Stalmeijer R, Scherpbier A, Teunissen P. The power of questions: a discourse analysis about doctor–student interaction. Med Ed 2014; 48(8): 806–819.
http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1111/medu.12493.

The authors claim that how people talk with one another influences their identity, their position and what they are allowed to do. This paper focuses on the opportunities and challenges of such moments of interaction between doctors and students during a clerkship characterized by short supervisory relationships. The authors conducted the study in a 10-week internal medicine clerkship. Nine students and 10 doctors who worked with these nine students participated by regularly describing moments of interaction, using dictaphones. The authors performed a critical discourse analysis of material sourced from a total of 184 audio diary entries and seven student debriefing interviews to reveal how participants discursively shaped the way they could think, speak and conduct themselves. Findings suggested that the ways in which doctors and students posed and answered questions represented a recurrent and influential feature in the diaries. This Question and Answer dynamic revealed six discourses of Basic Learning Need, Care and Attention, Power Game, Exchange of Currency, Distance, and Equality and Reciprocity. The authors conclude that by purposefully bringing power structures to the surface, they have addressed the complexity of learning and teaching as it occurs in day-to-day moments of interaction in a clerkship with little continuity in supervision. Both doctors and students should be supported to reflect critically on how they contribute to supervisory relationships with reference to, for example, the ways in which they ask or answer questions.

Watling C, Driessen E, van der Vleuten CP, Lingard L. Learning culture and feedback: an international study of medical athletes and musicians. Med Ed 2014; 48(7): 713–723.
http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1111/medu.12407.

The authors explored the unique perspectives of doctors who had also trained extensively in sport or music to: (i) distinguish the elements of the response to feedback that are determined by the individual learner from those determined by the learning culture, and (ii) understand how these elements interact in order to make recommendations for improving feedback in medical education. The authors conducted semi-structured interviews with 27 doctors or medical students who had high level training and competitive or performance experience in sport (n = 15) or music (n = 12). The authors found that individual learner traits, such as motivation and orientation toward feedback, appeared stable across learning contexts. Similarly, certain feedback characteristics, including specificity, credibility and action ability, were valued in sport, music and medicine alike. Learning culture influenced feedback in three ways: (i) by defining expectations for teachers and teacher–learner relationships; (ii) by establishing norms for and expectations of feedback, and (iii) by directing teachers' and learners' attention toward certain dimensions of performance. Learning culture therefore neither creates motivated learners nor defines 'good feedback'; rather, it creates the conditions and opportunities that allow good feedback to occur and learners to respond. The authors conclude that an adequate understanding of feedback requires an integrated approach incorporating both the individual and the learning culture. Their research offers a clear direction for medicine's learning culture: normalize feedback; promote trusting teacher–learner relationships; define clear performance goals, and ensure that the goals of learners and teachers align.

Weaver SJ, Dy SM, Rosen MA. Team-training in healthcare: a narrative synthesis of the literature. BMJ Qual Saf. 2014 May;23(5):359-72. http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1136/bmjqs-2013-001848. Epub 2014 Feb 5.

The authors provide an updated review on the current state of team-training science and practice in acute care settings. They found that both simulation and classroom-based team-training interventions can improve teamwork processes (eg, communication, coordination and cooperation), and implementation has been associated with improvements in patient safety outcomes. Thirteen studies published between 2011 and 2012 reported statistically significant changes in teamwork behaviors, processes or emergent states and 10 reported significant improvement in clinical care processes or patient outcomes, including mortality and morbidity. Effects were reported across a range of clinical contexts. Larger effect sizes were reported for bundled team-training interventions that included tools and organizational changes to support sustainment and transfer of teamwork competencies into daily practice. The authors conclude that, overall, moderate-to-high-quality evidence suggests team-training can positively impact healthcare team processes and patient outcomes. Additionally, toolkits are available to support intervention development and implementation. Evidence suggests bundled team-training interventions and implementation strategies that embed effective teamwork as a foundation for other improvement efforts may offer greatest impact on patient outcomes.

Zazulia AR, Goldhoff P. Faculty and Medical Student Attitudes About Preclinical Classroom Attendance. Teach Learn Med. 2014. 26(4), 327–334.
http://ezproxy.library.tufts.edu/login?url=http://dx.doi.org/10.1080/10401334.2014.945028.

This study examines differences in medical student and faculty attitudes regarding preclinical classroom attendance, and the impact of nonattendance on educators and the learning environment. Data was collected using internet-based surveys. Quantitative and qualitative methods of data analysis were performed. A total of 382 (79%) of 484 eligible students and 248 (64%) of 387 eligible faculty completed the survey. Both groups recognized a negative impact of poor attendance on faculty enthusiasm for teaching (students 83%, faculty 75%), but faculty were significantly more likely to endorse a negative impact on effectiveness of lectures (75% vs. 42%, $p < .0001$) and small-groups (92% vs. 76%, $p < .0001$) and a relationship between attendance and professionalism (88% vs. 68%, $p < .0001$). Students were significantly more likely to support free choice among learning opportunities (90% vs. 41%, $p < .0001$) including regularly missing class for research and community service activities (70% vs. 14%, $p < .0001$) and to consider lecture videos an adequate substitute for attendance (70% vs. 15%, $p < .0001$). Free-text responses suggested that students tended to view class going primarily as a tool for learning factual material, whereas many faculty viewed it as serving important functions in the professional socialization process. The authors concluded that, in this single-center cohort, medical student and teaching faculty attitudes differed regarding the importance of classroom attendance and its relationship to professionalism, findings that were at least partially explained by differing expectations of the purpose of the preclinical classroom experience.

MeEdPortal News & Updates

Publications
Durham M, Lie D, Lohenry K. Interprofessional Care: an Introductory Session on the Roles of Health Professionals. MedEdPORTAL; 2014. Available from: www.mededportal.org/publication/9813.

Fishman L, Newman L. Dr. Novel and Dr. Sage: Developing Expertise in Leading Small Group Discussions. MedEdPORTAL; 2014. Available from: www.mededportal.org/publication/9838.

TUSM Faculty Educational Scholarship Publications

Bing-You RG, Trowbridge RL, Kruithoff C, Daggett Jr JL. Unfreezing the Flexnerian Model: introducing longitudinal integrated clerkships in rural communities. Rural and Remote Health 14(3): 2944. (Online) 2014. Available from: http://www.rrh.org.au.

Blanchard RD, Visintainer PF, Hinchey KT. A Compass for Scholarship: The Scholarly Activity Expectations Rubric. JGME. 2014; 6(4): 636-38. DOI: http://dx.doi.org/10.4300/JGME-D-14-00235.1.

Blanchard RD, Artino AR, Visintainer, PF. Applying Clinical Research Skills to Conduct Education Research: Important Recommendations for Success. JGME. 2014; 6(4): 619-22. DOI: http://dx.doi.org/10.4300/ JGME-D-14-00443.1.