



# Key Studies in Medical Education from 2017: A Narrative Review

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## ABSTRACT

Education, like clinical medicine, should be based on the most current evidence in the field. Despite the overwhelming breadth of literature in medical education, pediatric educators desire and need to incorporate best practices into their educational approaches. This article provides an overview of 18 articles from the literature in 2017 that the authors consider to be key articles in the field of pediatric medical education. The 7 authors, all medical educators with combined leadership experience and expertise across the continuum of pediatric medical education, used an iterative, staged process to review more than 1682 abstracts published in 2017. This process aimed to identify a subset of articles that were most relevant to educational practice and most applicable to pediatric medical education. In the process, pairs of authors independently reviewed and scored abstracts in 13 medical education-related journals and reached consensus to identify the abstracts that best met

these criteria. Selected abstracts were discussed using different pairs to select the final articles included in this review. This paper presents summaries of the 18 articles that were selected. The results revealed a cluster of studies related to feedback, coaching, and observation; trainee progression, educator development, trainee entrustment, culture, and climate; and the medical student experience. This narrative review offers a useful tool for educators interested in keeping informed about the most relevant and valuable information in the field of medical education.

**KEYWORDS:** continuing medical education; graduate medical education; medical education; medical education research pediatrics

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THE BREADTH OF medical education scholarship published every year is a testament to the work being done by medical educators across the world. Yet, that very breadth can be intimidating to pediatric educators who seek to discover and incorporate new ideas into their practice of teaching. Journals focused on medical education, in pediatrics and beyond, and non-medical education journals publish thousands of studies every year, limiting the ability of an individual to access and review them all. To address this need, we reviewed medical education literature from key journals to determine those that could most significantly impact pediatric educator practice.

## METHODS

Six authors were selected from the Education Committee of the Academic Pediatric Association. The group was purposefully selected to include individuals with

educational leadership roles and experience across the continuum of undergraduate (M.S.R. and H.B.F.), graduate (H.B.F., S.P., T.L.T., and L.M.), and continuing (H.B.F., T.L.T., A.D., and D.D.) medical education. The team reviewed all articles published during 2017 from 13 medical education and specialty journals (Table 1). Journals selected for review were identified based on a combination of journal reputation, relevance of the journal to pediatric educational practice, and the consensus recommendation by the author group. We used a staged review process modeled after work done by Locke and colleagues<sup>1</sup> and used previously by our review team.<sup>2</sup> The goal was to identify articles that would be of notable interest to a pediatric educator and applicable to practice.

The 13 journals were distributed among each of the authors. Authors were placed in pairs and assigned 2 to 3 journals to review. Each author independently reviewed

**Table 1.** Journals Included for Review in Alphabetical Order

<i>Academic Medicine</i>	<i>Medical Education Online</i>
<i>Academic Pediatrics</i>	<i>Medical Science Educator-</i>
<i>BMC Education</i>	<i>IAMSE</i>
<i>Journal of the American Medical Association</i>	<i>Medical Teacher</i>
<i>Journal of General Internal Medicine</i>	<i>New England Journal of Medicine</i>
<i>Journal of Graduate Medical Education</i>	<i>Pediatrics</i>
<i>Medical Education</i>	<i>Teaching and Learning in Medicine</i>

abstracts for each volume of the assigned journal and scored them based on potential interest from 0 to 2 (0 = not of interest, 1 = possibly read, 2 = definitely read). All reviews were completed over a 4-month period in the fall/winter of 2017–2018. The time required for review varied by the number of issues and articles present in a given journal. Abstracts from commentaries and non-research articles were not reviewed. After their independent scores were added, each author arranged a 1-hour conference call with his/her partner to review findings and determine advancement to the next stage. All 4-point articles were automatically advanced, and any 3-point article was discussed to determine advancement. Articles were also advanced if the information in the abstract was insufficient to judge its potential interest. The authors worked with the intention of choosing articles applicable to practice; if there was doubt, the article was advanced. To decrease the risk of bias, if a reviewer was assigned to rate any article in which he or she was an author, the article was reassigned to another member of the study team for each stage of the process. Only 1 of the final articles was co-authored by a member of the study team.<sup>3</sup>

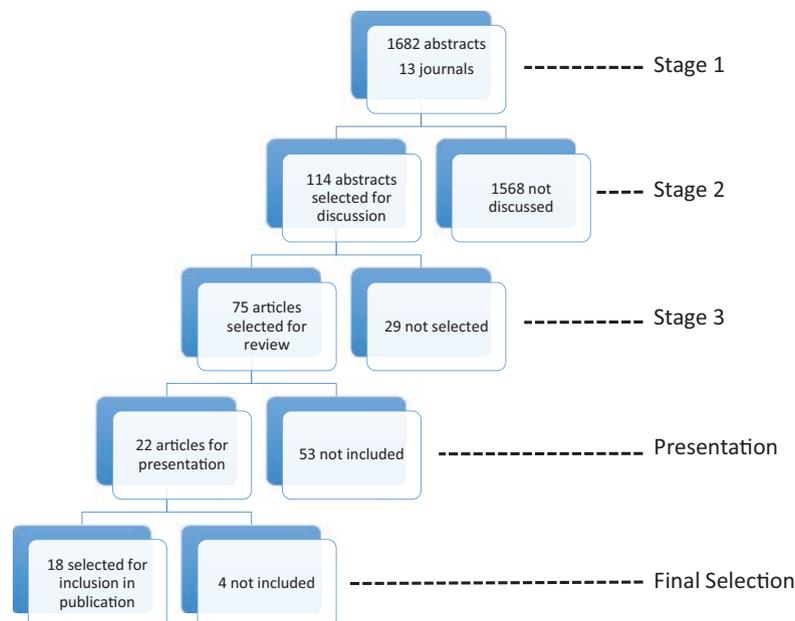
A total of 1682 abstracts were reviewed in stage 1; of these, 114 abstracts were selected for discussion, and

75 advanced to stage 2. In stage 2, articles were reviewed in their entirety by different author pairs and scored for applicability using the same scoring method and discussion (0 = no applicability to practice, 1 = possibly applicable to practice, 2 = definitely applicable to practice). Twenty-two articles were selected for inclusion in the 2018 Pediatric Academic Societies meeting as an invited science presentation. Selected manuscripts were then grouped by theme to provide an organized and cohesive presentation format. Following presentation and discussion, the authors eliminated 4 additional articles, resulting in 18 being selected for final inclusion in this manuscript. Those 4 were excluded, before development of the manuscript, based on the relative contribution of each article to the existing literature and feedback following presentation at the Pediatric Academic Societies meeting. The Figure summarizes the selection process. A summary of each article is included in the following text. The research question, study design, sample size, and key points of each article are summarized in Table 2.

## TOPIC 1. FEEDBACK AND COACHING

Sargeant J, Mann K, Manos S, et al. R2C2 in action: testing an evidence-based model to facilitate feedback and coaching in residency. *J Grad Med Educ.* 2017;9:165–170.<sup>4</sup>

This manuscript describes the value and acceptability of a new 4-stage, evidence- and theory-informed model developed to facilitate feedback and coaching in residency. The model is called R2C2, and each letter in the acronym stands for a phase or step in the feedback dialog: 1) rapport and relationship building, 2) exploring reactions to feedback, 3) exploring feedback content, and 4) coaching for change. In this qualitative study, supervisors

**Figure.** Process for article selection.

**Table 2.** Summary of Articles Reviewed

Article	Learner Level	Research Objective	Methodology	Sites/Sample Size	Results	Major Implication
<b>Feedback and Coaching</b>						
Sargeant J, et al. R2C2 in action: testing an evidence-based model to facilitate feedback and coaching in residency. <i>J Grad Med Educ.</i> 2017;9:165–170.	Internal medicine and pediatric residents	Explore the utility and acceptability of the R2C2 model.	Qualitative use of semi-structured interviews and verbal feedback provided at midpoint or end-of-rotation feedback encounters	7 residents and 5 faculty at 1 institution	The R2C2 model enabled meaningful feedback conversations focused on goals for improvement and strategies to meet these goals. Faculty appreciated a structure; both faculty and trainees found the coaching phase valuable.	The R2C2 model provides a structured framework for feedback that increases the likelihood of change.
Ramani S, et al. “It’s just not the culture”: a qualitative study exploring residents’ perceptions of the impact of institutional culture on feedback. <i>Teach Learn Med.</i> 2017;29:153–161.	Internal medicine residents	Examine residents’ perspectives on institutional factors that affect feedback.	Qualitative analysis of comments from focus group discussions	38 residents at 1 training program	Organizational culture is central to the process and impact of an effective feedback cycle. Culture should promote bidirectional honest dialog, which can enhance the credibility and receptivity of feedback, leading to professional growth of both trainees and faculty.	This article provides a starting point for organizations to assess their feedback culture and identify strategies for improvement.
Mueller AS, et al. Gender differences in attending physicians’ feedback to residents: a qualitative analysis. <i>J Grad Med Educ.</i> 2017;9:577–585.	EM residents	Understand gender differences in comments in written assessments.	Qualitative analysis of comments obtained from direct observation-based assessments by faculty	1317 direct observations from 67 faculty members collected from 47 EM residents at 1 institution	Valued traits are often stereotypically masculine. Struggling female residents receive discordant feedback, particularly regarding issues of autonomy and assertiveness.	These findings can be used to raise awareness of both gender bias in perceptions of residents’ capabilities and gender stereotypes of what traits are valued in physicians.
<b>Trainee Progress</b>						
Power A, et.al. Justify your answer: the role of written think aloud in script concordance testing. <i>Teach Learn Med.</i> 2017;29:59–67.	Pediatric residents	Determine the additive value of the TA when used in conjunction with a SCT.	Descriptive, using inductive thematic analysis obtained by reviewing responses to TA and SCT	6 cases reviewed from 91 residents at 4 institutions	Benefits of TA compared to SCT alone: 1) Determined incorrect reasoning despite correct SCT response and vice versa 2) Identified when trainees misinterpreted questions 3) Highlighted value of debriefing	A combination of TA and SCT provides the most comprehensive picture of learners’ clinical reasoning skills.

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Table 2 (Continued)

Article	Learner Level	Research Objective	Methodology	Sites/Sample Size	Results	Major Implication
Moreau KA, et. al. The development of the PARENTS: a tool for parents to assess residents' non-technical skills in pediatric emergency departments. <i>BMC Med Educ.</i> 2017;17:210–220.	EM residents	Obtain validity evidence for an instrument (PARENTS) designed to assess residents' non-technical skills in pediatric emergency departments.	Instrument development using Messick's validity framework	37 residents and 434 parents at 1 institution	A 19-item rubric was developed. Response process was demonstrated through interviews with parents; "resident" was identified as the only confusing term on the rubric. Factor analysis suggested that multiple items assessed trainees' non-technical skills.	The PARENTS instrument allows for important, authentic, and valid assessment of residents' non-technical skills in the workplace.
Sebok-Syer SS, et. al. Mixed messages or miscommunication? Investigating the relationship between assessors' workplace-based assessment scores and written comments. <i>Acad Med.</i> 2017;92:1774–1779.	EM residents	Examine relationships between qualitative and quantitative assessments used in the McMaster Modular Assessment Program.	Mixed methods using data from task ratings, 360° evaluations, comments, and checklists	23 first- and second-year residents at 1 institution	Significant association was found between task ratings and quality ratings of task strengths and weaknesses. Comments for trainees with perceived deficiency(s) addressed both strengths and weaknesses and were focused on criterion referencing. Written comments were avoided by 30% of assessors even when required by the system.	Associations between quantitative and qualitative assessments suggest opportunities for faculty development to assist in interpretation of narrative comments.
<b>Educator Development</b>						
Yoon MH, et al. Medical students' professional development as educators revealed through reflections on their teaching following a students-as-teachers course. <i>Teach Learn Med.</i> 2017;29:411–419.	Fourth-year medical students	Explore student reflections after completing students-as-teachers course.	Qualitative using inductive content analysis obtained from written reflective essays	96 students from 1 institution	Nine themes emerged showing identity development and emerging professional self-concept as an educator: 1) Adult learning strategies 2) Preparation 3) Clinical correlations 4) Feedback 5) Learning climate 6) Growing as educators 7) Exceeding course requirements 8) Peer counseling 9) Professionalism modeling	Narratives from medical students highlight how they develop their identities as clinician-educators.

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Table 2 (Continued)

Article	Learner Level	Research Objective	Methodology	Sites/Sample Size	Results	Major Implication
Branch WT Jr, et al. A multi-institutional longitudinal faculty development program in humanism supports the professional development of faculty teachers <i>Acad Med</i> . 2017;92:1680–1686.	Faculty	Describe a longitudinal, multi-institutional faculty development program in humanism.	Description of an educational innovation including mixed methods data obtained from two prospective cohort studies	993 faculty from 30 institutions in the United States and Canada	Participants improved in quantitative evaluations of humanism when compared to controls. Qualitative data suggested progression in professional identity development.	A longitudinal faculty development program can facilitate humanism in its participants.
Thammasitboon S, et al. Creating a medical education enterprise: leveling the playing fields of medical education vs. medical science research within core missions. <i>Med Educ Online</i> . 2017;22:1377038	Department of pediatrics	Describe the process of educational enterprise creation within a department.	Description of an innovation	1 academic pediatric department	The authors described the process in terms of 1) Charge—how they worked with the chair to create an “educational enterprise” 2) Challenge—how they elevated medical education scholarship to be on par with basic science research 3) Endeavor—how early success was demonstrated	Practical strategies are provided to advance the scholarly contributions of clinician-educators within a pediatrics department.
<b>Entrustment and Transitions</b>						
Sheu L, et al. How supervisor experience influences trust, supervision, and trainee learning: a qualitative study. <i>Acad Med</i> . 2017; 92:1320–1327.	Internal medicine residents	Explore how the experience of faculty supervisors relates to their decisions regarding supervision and entrustment.	Two-phase qualitative study using data obtained from semi-structured interviews of supervising faculty and residents (phase 1) combined with focus groups of residents (phase 2)	Phase 1—44 faculty and/or residents from 2 institutions Phase 2—23 residents engaged in 4 focus groups at 1 institution	Study identified 4 domains of trust (data, approach, perspective, and clinical experience) that changed with supervisor experience. Trainees described changes in their expectations and learning needs with their own experience. Incongruence was occasionally identified between trainee needs and supervisor practices.	The authors propose that faculty and trainee development may allow for graduated autonomy and improved learning opportunities throughout training.
Huda N, et al. Entrustment of the on-call senior medical resident role: implications for patient safety and collective care. <i>BMC Med Educ</i> . 2017;17:121.	Internal medicine residents	Describe the clinical activities of senior residents when they facilitate the transition of patients from the emergency department to the inpatient teaching teams.	Qualitative using constructivist grounded theory approach; included data from clinical case documentation, focus groups, and literature review	Documentation from 19 cases reviewed; 10 to 19 participants in focus groups at 2 institutions	Key supervisory tasks were identified that impacted patient safety and trainee learning: 1) Overseeing patient care 2) Briefing 3) Case review 4) Documentation 5) Preparing for handover	The key supervisory tasks can be used to inform curriculum development and entrustment decision-making in residency.

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Table 2 (Continued)

Article	Learner Level	Research Objective	Methodology	Sites/Sample Size	Results	Major Implication
Krupat E, et al. The Educational Climate Inventory: measuring students' perceptions of the preclerkship and clerkship settings. <i>Acad Med.</i> 2017;92:1757–1764.	Medical students	Provide validity evidence for an instrument designed to assess the educational learning environment.	Instrument development using Messick's validity framework	1441 students at 6 US medical schools	A 3-factor, 20-item scale developed. Satisfactory internal consistency ( $\alpha > .71$ ) was demonstrated for all factors. Clerkship experience was more performance oriented than preclerkship experience.	The medical school educational climate can be assessed using this validated instrument.
<b>Culture and Climate</b>						
Ladha M, et al. The effect of white coats and gender on medical students' perception of physicians. <i>BMC Med Educ.</i> 2017;17:93.	Medical students	Determine if components of a physician's physical appearance affect student ratings of competence.	Quantitative using self-administered questionnaire following 4 simulated scenarios portraying potential physician error	124 second-year medical students at 1 school	Although white coats did not change the perception of physicians, significant differences were seen when gender and ethnicity were modified.	This article reminds educators to evaluate how implicit bias may affect evaluations of individuals in a high-stakes environment.
Osta AD, et al. Acculturation needs of pediatric international medical graduates: a qualitative study. <i>Teach Learn Med.</i> 2017;29:143–152.	Interns and residents	Explore if pediatric IMG residents have specific acculturation needs when transitioning into US-based programs.	Qualitative using semi-structured focus groups	26 pediatric IMG residents from 12 countries at 1 training program	New and rich acculturation themes emerged that impact the transition of IMG residents: 1) Understanding the education system and family structure 2) Social determinants of health 3) Communication with African American parents 4) Contraception 5) Physician handoffs 6) Physicians' role in prevention 7) Adolescent health 8) Physicians' role in child advocacy	The themes identified may be used to guide curricular reform for IMGs during the transition from medical school to residency.
van Vliet M, et al. Long-term benefits by a mind-body medicine skills course on perceived stress and empathy among medical and nursing students. <i>Med Teach.</i> 2017;39:710–719.	Medical and nursing students	Explore short- and long-term effects of a mind-body medicine course on medical and nursing students.	Quasi-experimental, exploratory study using a validated questionnaire over 4 time points	74 medical and 47 nursing students at 1 Dutch medical school and 1 Swedish nursing school	The course either decreased perceived stress or prevented increased personal distress and fostered empathy in participants.	A mind-body medicine course may be of substantial value when incorporated early in undergraduate medical education.

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Table 2 (Continued)

Article	Learner Level	Research Objective	Methodology	Sites/Sample Size	Results	Major Implication
<b>Improving the Medical Student Experience</b>						
King MA, et al. Developing validity evidence for the written pediatric history and physical exam evaluation rubric. <i>Acad Pediatr.</i> 2017;17:68–73.	Third-year medical students on the pediatrics clerkship	Obtain validity evidence for an encounter note rubric.	Instrument development using Messick's validity framework	30 total encounter notes assessed by 18 total faculty and 5 total senior residents at 3 sites	A 10-item instrument, P-HAPEE, was developed. It demonstrated content, internal structure, and response process validity evidence.	P-HAPEE contains substantial validity evidence for evaluating the quality of electronic and paper-based encounter notes written by medical students.
Ludwig AB, et al. Group observed structured encounter (GOSCE) for third-year medical students improves self-assessment of clinical communication. <i>Med Teach.</i> 2017;39:931–935.	Third-year medical students on the internal medicine clerkship	Assess the feasibility of a group OSCE.	Description of educational innovation using pre-/post-test self-efficacy surveys and satisfaction ratings	155 students, placed in groups of 4 to 6 with 1 faculty preceptor per group at 1 institution	Students endorsed improved confidence in 9/12 areas assessed when comparing post-group OSCE surveys to pre-group OSCE surveys ( $P < .05$ ).	A group OSCE is a feasible and relatively low-cost alternative to traditional OSCEs and may be of particular benefit for formative feedback.
Gonzalo JD, et al. How can medical students add value? Identifying roles, barriers, and strategies to advance the value of undergraduate medical education to patient care and the health system. <i>Acad Med.</i> 2017;92:1294–1301.	Medical students	Provide recommendations for increasing student value in modern health care systems.	Qualitative analysis of discussions centered around student value	121 attendees (placed in small groups of 5 to 9) from 32 US medical schools present at an American Medical Association consortium meeting	Seven roles to increase medical student value were proposed: 1) Patient navigators 2) Care transition facilitators 3) Safety/patient care analysts 4) Quality improvement team extenders 5) Population health managers 6) Patient care technicians 7) Medical scribes	Medical students can contribute meaningfully to patient care by reconsidering their role in the health care system.

EM indicates emergency medicine; TA, think aloud; SCT, script concordance test; IMG, international medical graduates; and OSCE, objective structured clinical encounter.

felt that the R2C2 model was helpful in facilitating meaningful, collaborative, reflective, goal-oriented conversations. In particular, the coaching phase prompted the giver and receiver to think more positively about feedback and framed the conversations as opportunities to coach for improvement.

Ramani S, Post SE, Könings K, et al. "It's just not the culture": a qualitative study exploring residents' perceptions of the impact of institutional culture on feedback. *Teach Learn Med.* 2017;29:153–161.<sup>5</sup>

The purpose of this study was to explore resident perceptions regarding feedback they received from faculty and how feedback was valued at an institutional level. The authors identified 5 themes central to how the process of feedback can be impacted: 1) trusting relationships, 2) honest dialog, 3) credibility and receptivity, 4) professional growth, and 5) bidirectional feedback. The authors concluded that organizational culture is at the heart of feedback; therefore, effective feedback requires more than faculty development alone.

Mueller AS, Jenkins TM, Osborne M, et al. Gender differences in attending physicians' feedback to residents: a qualitative analysis. *J Grad Med Educ.* 2017;9:577–585.<sup>6</sup>

This study analyzed narrative comments written by attending emergency medicine (EM) physicians to identify why performance evaluations of female EM postgraduate year 3 residents lag behind their male peers. The authors identified qualities of highly performing EM residents associated with personality, practice style, and management style. When male trainees struggled, they received consistent constructive feedback. In contrast, female residents received discordant feedback, particularly related to domains of autonomy and assertiveness. The authors suggest that these findings provide evidence of gender bias in perceptions of residents' capabilities.

## TOPIC 2. TRAINEE PROGRESS

Power A, Lemay JF, Cooke S. Justify your answer: the role of written think aloud in script concordance testing. *Teach Learn Med.* 2017;29:59–67.<sup>7</sup>

Written think aloud is a reflective approach used to describe an individual's thought process for a specific task. A script concordance test is a case-based method of assessing clinical reasoning in ambiguous situations. Trainee clinical reasoning processes are probed, and their concordance with the processes of an expert panel is measured. The authors explored the value of think aloud when used in conjunction with a pediatric script concordance test. Think aloud provided important nuances of trainee clinical reasoning that were not captured by the script concordance test alone. For example, think aloud illustrated how learners may use the correct clinical reasoning but select the incorrect answer on a script concordance test and vice versa. The authors suggest that the addition of think aloud to quantitative measures of clinical reasoning may provide a more comprehensive picture of learners' clinical reasoning skills.

Moreau KA, Eady K, Tang K, et al. The development of the PARENTS: a tool for parents to assess residents' non-technical skills in pediatric emergency departments. *BMC Med Educ.* 2017;17:210–220.<sup>8</sup>

The purpose of this study was to obtain validity evidence for an instrument designed to measure the non-technical skills used by residents when interacting with parents in the emergency room. The authors developed a 17-item instrument with content, internal structure, and response process validity evidence. The resulting instrument can be administered to parents in the context of a clinical encounter and may provide an authentic opportunity to assess resident performance of non-technical skills in a clinical setting.

Sebok-Syer SS, Klinger DA, Sherbino J, et al. Mixed messages or miscommunication? Investigating the relationship between assessors' workplace-based assessment scores and written comments. *Acad Med.* 2017;92:1774–1779.<sup>9</sup>

This study explored associations between various qualitative and quantitative workplace-based assessments used in evaluating EM resident performance. Regression analysis revealed variable relationships between assessment measures of resident performance in the workplace, and the authors suggest the presence of a "hidden code" used by faculty to describe the competence of trainees. These findings suggest how individuals may interpret narrative assessments, offer insight on the utility of written comments, and suggest opportunities for faculty development to improve the quality of narrative comments.

## TOPIC 3. EDUCATOR DEVELOPMENT ACROSS THE CONTINUUM

Yoon MH, Blatt BC, Greenberg LW. Medical students' professional development as educators revealed through reflection on their teaching following a students-as-teachers course. *Teach Learn Med.* 2017;29:411–419.<sup>10</sup>

The purpose of this study was to explore how fourth-year medical students develop their identities as educators after completing a students-as-teachers course. Nine themes emerged from a qualitative analysis of students' reflective writing assignments: 1) using adult learning teaching strategies, 2) preparing to teach physical diagnosis, 3) incorporating clinical correlations, 4) giving and receiving feedback, 5) creating a positive learning climate, 6) growing as educators, 7) modeling professionalism, 8) exceeding course requirements, and 9) peer counseling. Overall, the authors suggest that these themes and the corresponding narratives provided by student teachers illustrate how clinicians develop their identities as educators. In addition, these findings highlight the value of such courses in developing a skilled medical educator workforce.

Branch WT Jr, Frankel RM, Hafner JP, et al. A multi-institutional longitudinal faculty development program in humanism supports the professional development of faculty teachers. *Acad Med.* 2017; 92:1680–1686.<sup>11</sup>

This study described the development, implementation, and outcomes of a longitudinal, multi-institutional faculty

development program in humanism. The small group-based curriculum was successfully implemented at 30 institutions across the United States and Canada. Participants scored higher on overall humanism questionnaires than controls and progressed toward more advanced levels of humanism self-identity. The authors suggested that this program may serve as a model to strengthen the humanistic side of medical education and thus improve the learning environment.

Thammasitboon S, Ligon BL, Singhal G, et al. Creating a medical education enterprise: leveling the playing fields of medical education vs. medical science research within core missions. *Med Educ Online*. 2017;22:1377038.<sup>3</sup>

The purpose of this study was to describe the creation of an educational initiative within a pediatric department designed to support clinician-educators. The authors utilized a business organizational model to develop the educational enterprise. Strategies were organized into 4 frames: 1) structural or administrative, 2) human resources or personnel, 3) political or authority, and 4) symbolic or cultural. The frames provided practical strategies for empowering and advancing the scholarly endeavors of clinician-educators and resulted in increased academic productivity.

#### TOPIC 4. ENTRUSTMENT AND TRANSITIONS

Sheu L, Kogan J, Hauer K. How supervisor experience influences trust, supervision, and trainee learning: a qualitative study. *Acad Med*. 2017;92:1320–1327.<sup>12</sup>

This study sought to understand how supervisors' decisions regarding trust and supervision vary based on their experience and how that variability impacts trainee learning. Differences in supervisor experience influenced their perspectives. These differences were characterized as the data used, approach, perspective, and clinical experience. Trainees preferred supervisors who balanced autonomy with supervision. They also reported that preferences regarding supervision, and specifically learning needs, shifted based on their own experience.

Huda N, Faden L, Goldszmidt M. Entrustment of the on-call senior medical resident role: implications for patient safety and collective care. *BMC Med Educ*. 2017;17:121.<sup>13</sup>

Second-year internal medicine residents often serve in a role designated as on-call senior medical residents (OC-SMRs), a position designed to facilitate the transition of care from the emergency department to inpatient teaching teams. The purpose of this study was to explore the clinical tasks of OC-SMRs to inform assessment and entrustment decisions. The authors identified 5 key tasks performed by OC-SMRs, such as documentation and preparing for handovers, that facilitate patient safety and care coordination during admission transitions. The authors concluded that identification of the key tasks and their respective challenges provides an understanding of the roles of OC-SMRs, and they described implications for training, assessment, and entrustment decision-making across disciplines.

Krupat E, Borges N, Brower R, et al. The Educational Climate Inventory: measuring students' perceptions of the preclerkship and clerkship settings. *Acad Med*. 2017;92:1757–1764.<sup>14</sup>

This study describes the development of, and validity evidence for, the Educational Climate Inventory (ECI). The purpose of this instrument was to differentiate between performance- and learning-oriented environments within medical schools. The resulting ECI was a 3-factor, 20-item instrument that demonstrated validity evidence in several domains. The authors suggested that medical schools may use the ECI to evaluate their educational climate and ensure that it promotes a learning-oriented environment.

#### TOPIC 5. CULTURE AND CLIMATE

Ladha M, Bharwani A, McLaughlin K, et al. The effect of white coats and gender on medical students' perception of physicians. *BMC Med Educ*. 2017;17:93.<sup>15</sup>

The purpose of this study was to determine if the physical appearance of simulated physicians affected students' rating of competence. The primary outcome of wearing a white coat showed no difference in perceptions of the students. However, secondary factors of gender and race altered how students rated simulated physicians in the areas of trustworthiness, physician management, competence, professionalism, and perception of medical error. The authors suggest that these results provide evidence of implicit bias associated with physical attributes of physicians.

Osta AD, Barnes MM, Pessagno R, et al. Acculturation needs of pediatric international medical graduates: a qualitative study. *Teach Learn Med*. 2017;29:143–152.<sup>16</sup>

The purpose of this study was to explore if pediatric international medical graduates have acculturation needs that have not been previously identified. The authors found several challenges faced by international medical graduates. These involved understanding unique cultural aspects of training in the United States related to population health, communication with specific ethnic groups, and advocacy. The results suggest that acculturation is an important factor to consider when orienting new trainees to their local community.

van Vliet M, Jong M, Jong MC. Long-term benefits by a mind-body medicine skills course on perceived stress and empathy among medical and nursing students. *Med Teach*. 2017;39:710–719.<sup>17</sup>

This study explored short- and long-term effects of a mind-body medicine (MBM) course among medical students and nursing students. The authors evaluated the effects of a MBM course using a validated questionnaire over 4 time points. Medical students demonstrated increased empathy after a 12-month period of follow up. The MBM course also decreased perceived stress in nursing students and prevented higher levels of personal distress in medical students. The authors suggest that teaching MBM earlier may have long-term effects on both wellbeing and stress management.

## TOPIC 6. IMPROVING THE MEDICAL STUDENT EXPERIENCE

King MA, Phillipi CA, Buchanan PM, et al. Developing validity evidence for the written pediatric history and physical exam evaluation rubric. *Acad Pediatr*. 2017;17:68–73.<sup>18</sup>

The purpose of this study was to obtain validity evidence for an instrument developed to assess the quality of medical student encounter notes. The authors developed the Pediatric History and Physical Exam Evaluation (P-HAPEE) rubric, a 10-item instrument. Content was developed using input from more than 50 educators and a review of previously published instruments. Inter-rater reliability was strong for each component, and the time to score ranged from 15.1 to 19.1 minutes. This instrument is 1 of only 2 published instruments developed to specifically assess the quality of the pediatric encounter note.

Ludwig AB, Raff AC, Lin J, et al. Group observed structured encounter (GOSCE) for third-year medical students improves self-assessment of clinical communication. *Med Teach*. 2017;39:931–935.<sup>19</sup>

The group objective structured clinical examination (GOSCE) is a relatively novel variant of the traditional objective structured clinical examination, which incorporates standardized patients in a team-based format. This study described the feasibility and perceived effectiveness of the GOSCE. The GOSCE was conducted with small groups of medical students paired with a faculty preceptor in internal medicine. When compared to the pre-intervention surveys, students who completed the GOSCE reported increased confidence in 9 of the 12 behaviors assessed. The authors propose that the GOSCE may be an appealing method for providing training and feedback on group dynamics, peer role modeling, and processing feedback encounters while serving as a low-cost alternative to the traditional objective structured clinical examination.

Gonzalo JD, Dekhtyar M, Hawkins RE, et al. How can medical students add value? Identifying roles, barriers, and strategies to advance the value of undergraduate medical education to patient care and the health system. *Acad Med*. 2017;92:1294–1301.<sup>20</sup>

The purpose of this study was to explore the value that medical students could add to enhance patient and health systems outcomes. Through a qualitative inquiry, the authors identified 3 principles that could enhance the value that students provide, addressed key barriers and proposed strategies for overcoming these barriers, and suggested 7 new roles to enhance student value in modern health care systems. The authors challenge the non-essential role of medical students in modern health care systems and suggest opportunity for contribution health care systems.

### CONCLUSIONS

A comprehensive review of the medical education literature from 2017 resulted in the selection of 18 key articles pertaining to 6 major themes. Similar to the previous year, we selected a cluster of key manuscripts pertaining to topics such as competency-based education, educator

development, and assessment.<sup>2</sup> In addition, culture and climate emerged as a major topic area in the list of key articles. When compared to the previous year, we identified more studies utilizing qualitative methods or focusing on collecting validity evidence. Collectively, these findings may suggest an increase in the rigor, quality, and/or quantity of studies using qualitative methods or an increase in instrument development. However, the process for inclusion was limited by an un-blinded review process, and selection was ultimately determined at the discretion of our review team. Therefore, it is possible that the articles included in this review represent the authors' interests rather than the state of the literature. In conclusion, we suggest readers consider these findings in the context of their educational environment to both promote evidence-based teaching and advance the field of educational scholarship.

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