

Appendices

Appendix 1: Student-as-Teacher (SaT), Resident-as-Teacher (RaT), and Continuing Medical Education (CME) curricula in medical education.

Table 1. SaT curricula

| Medical School | Citation of documents reviewed |
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| George Washington University (DC, United States) | Blatt B, Greenberg L. A multi-level assessment of a program to teach medical students to teach. <i>Adv Health Sci Educ Theory Pract.</i> 2007 Feb;12(1):7-18. |
| Iowa University (IA, United States) | Office of Consultation and Research in Medical Education, Iowa University School of Medicine. 050:300 Weekly Schedule, January, 2013 [course schedule]. 2013. Petit J, Ferguson K. 050:300 Teaching Skills for Medical Students M4 Elective Course Fall 2013-Spring 2014 [course syllabus]. 2013. |
| Tufts University (MA, United States) | Blanco MA, Maderer A, Oriel A, Epstein SK. How we launched a developmental student-as-teacher (SAT) program for all medical students. <i>Med Teach.</i> 2014 May;36(5):385-9. Tufts School of Medicine. Medical Education Elective 2014 [course calendar]. 2013. |
| University of British Columbia (BC, Canada) | Craig JL, Page G. Teaching in medicine: an elective course for third-year students. <i>Med Educ.</i> 1987 Sep;21(5):386-90. |
| University of California San Francisco (CA, United States) | Bardach NS, Vedanthan R, Haber RJ. 'Teaching to teach': enhancing fourth year medical students' teaching skills. <i>Med Educ.</i> 2003 Nov;37(11):1031-2. Haber RJ, Bardach NS, Vedanthan R, Gillum LA, Haber LA, Dhaliwal GS. Preparing fourth-year medical students to teach during internship. <i>J Gen Intern Med.</i> 2006 May;21(5):518-20. |
| University of Massachusetts (MA, United States) | Pasquale SJ, Pugnaire MP. Preparing medical students to teach. <i>Acad Med.</i> 2002 Nov;77(11):1175-6. |
| University Medical Center Utrecht (The Netherlands) | Zijdenbos I, Fick T, ten Cate O. How we offer all medical students training in basic teaching skills. <i>Med Teach.</i> 2011;33(1):24-6. |
| University of Michigan (MI, United States) | University of Michigan School of Medicine. Resident as Teacher 4 th Year Elective February 10 th to March 7 th 2014 schedule [course calendar]. 2014. |

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| University of Tuebingen (Germany) | <p>Shiozawa T, Hirt B, Celebi N, Baur F, Weyrich P, Lammerding-Köppel M. Development and implementation of a technical and didactical training program for student tutors in the dissection course. <i>Ann Anat.</i> 2010 Dec 20;192(6):355-60.</p> <p>Weyrich P, Celebi N, Schrauth M, Moltner A, Lammerding-Köppel M, Nikendei C. Peer-assisted versus faculty staff-led skills laboratory training: a randomised controlled trial. <i>Med Educ.</i> 2009;43(2): 113–120</p> |
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Table 2. RaT curricula

| Institution/Organization | Citation of documents reviewed |
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| Beth Israel Deaconess Medical Center, Internal Medicine (MA, United States) | <p>Smith CC, McCormick I, Huang GC. The clinician-educator track: training internal medicine residents as clinician-educators. <i>Acad Med.</i> 2014 Jun;89(6):888-91.</p> <p>Newman L, Tibbles C, Atkins KM, Burgin S, Fisher L, Kent T, Smith C, Aluko A, Ricciotti H. BIDMC Resident-as-Teacher Multidisciplinary DVD Series Curriculum. Poster presented at: The Harvard Medical School Academy Resident/Fellow As Teacher Curriculum Showcase; September 2014; Boston, MA.</p> |
| Beth Israel Deaconess Medical Center, Dermatology (MA, United States) | Burgin S, Newman L. The Harvard Dermatology Resident-as-Teacher Program. Poster presented at: The Harvard Medical School Academy Resident/Fellow As Teacher Curriculum Showcase; September 2014; Boston, MA. |
| Brigham and Women's Hospital, Internal Medicine (MA, United States) | <p>Julian KA, Monaghan C, Wamsley MA, Wipf JE, Zabar S. Residents-as-teachers curricula: how to initiate, evaluate, and sustain. 27th annual SGIM Meeting. Society of General Internal Medicine.</p> <p>http://impak.sgim.org/userfiles/file/AMHandouts/AM04/Workshops/WB08.pdf Published May 2004. Accessed October 2014.</p> |
| National survey of US pediatric program directors | Fromme HB, Whicker SA, Paik S, Konopasek L, Koestler JL, Wood B, Greenberg L. Pediatric Resident-as-Teacher Curricula: A National Survey of Existing Programs and Future Needs. <i>J Grad Med Educ.</i> 2011 Jun;3(2):168-75. |
| New York University (NY, United States) | <p>Julian KA, Monaghan C, Wamsley MA, Wipf JE, Zabar S. Residents-as-teachers curricula: how to initiate, evaluate, and sustain. 27th annual SGIM Meeting. Society of General Internal Medicine.</p> <p>http://impak.sgim.org/userfiles/file/AMHandouts/AM04/Workshops/WB08.pdf</p> |

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| | ops/WB08.pdf Published May 2004. Accessed October 2014. |
| University of Auckland (New Zealand) | Hill AG, Srinivasa S, Hawken SJ, Barrow M, Farrell SE, Hattie J, Yu TC. Impact of a Resident-as-Teacher Workshop on Teaching Behavior of Interns and Learning Outcomes of Medical Students. <i>J Grad Med Educ.</i> 2012 Mar;4(1):34-41. |
| University of California Irvine (CA, United States) | Morrison EH, Rucker L, Boker JR, Hollingshead J, Hitchcock MA, Prislun MD, Hubbell FA. A pilot randomized, controlled trial of a longitudinal residents-as-teachers curriculum. <i>Acad Med.</i> 2003 Jul;78(7):722-9. |
| University of California San Francisco (CA, United States) | Julian KA, Monaghan C, Wamsley MA, Wipf JE, Zabar S. Residents-as-teachers curricula: how to initiate, evaluate, and sustain. 27 th annual SGIM Meeting. Society of General Internal Medicine. http://impak.sгим.org/userfiles/file/AMHandouts/AM04/Workshops/WB08.pdf Published May 2004. Accessed October 2014. |
| University of Washington (WA, United States) | Julian KA, Monaghan C, Wamsley MA, Wipf JE, Zabar S. Residents-as-teachers curricula: how to initiate, evaluate, and sustain. 27 th annual SGIM Meeting. Society of General Internal Medicine. http://impak.sгим.org/userfiles/file/AMHandouts/AM04/Workshops/WB08.pdf Published May 2004. Accessed October 2014. |
| Workshop of US internal medicine program directors | Heflin MT, Pinheiro S, Kamintzky CP, McNeill D. 'So you want to be a clinician-educator...': designing a clinician-educator curriculum for internal medicine residents. <i>Med Teach.</i> 2009 Jun;31(6):e233-40. |

Table 3. CME curricula

| Institution/Organization | Citation of documents reviewed |
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| Association of Professors of Gynecology and Obstetrics (Washington DC, United States) | Association of Professors of Gynecology and Obstetrics. 2010-2011 Academic Scholars and Leaders Program [course syllabus]. 2010. |
| Beth Israel Deaconess Medical Center (MA, United States) | Beth Israel Deaconess Medical Center. 2015 Maximizing Your Teaching Skills CME [course syllabus]. 2015. |
| Beth Israel Deaconess Medical Center | Smith C, Newman L. Rabkin Fellowship in Medical Education Schedule 2013-4 [course syllabus]. 2014. |

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| (MA, United States) | Smith C, Newman L. Rabkin Fellowship in Medical Education Schedule 2014-5 [course syllabus]. 2014. |
| Harvard Macy Institute (MA, United States) | Harvard Macy Institute. 2015 Program for Educators in Health Professions January Calendar [course calendar]. 2015. Harvard Macy Institute. 2015 Program for Educators in Health Professions May Calendar [course calendar]. 2015. |

Appendix 2: SaT Delphi Round One Survey Development. Twenty-eight unique content areas were identified from existing RaT, SaT, and CME curricula (listed in Appendix 1) and organized into eight thematic domains (bolded below).

- **Classroom instruction topics (4)**
 - *Instructional design/pedagogical approaches* (e.g. flipped classroom, problem-based learning, team-based learning)
 - *Lesson/curriculum planning* (e.g. Kern's 6-step approach to curriculum development, writing learning goals/objectives)
 - *Small-group teaching* (e.g. facilitating small-group discussions and didactic workshops)
 - *Large-group teaching* (e.g. lecturing for large audiences)
- **Clinical instruction topics (4)**
 - *Bedside teaching* (e.g. how to teach small groups or individuals in the presence of a patient)
 - *Procedural and skills-based teaching* (e.g. how to teach a clinical skill or procedure such as suturing, lumbar puncture, auscultating, etc.)
 - *Precepting in clinical contexts* (e.g. how to employ "one-minute preceptor"/SNAPPS precepting models in inpatient and outpatient settings)
 - *Teaching patients* (e.g. how to teach a patient about a medical diagnosis, shared-decision making)
- **Feedback & assessment topics (3)**
 - *Feedback* (e.g. providing effective formative and summative feedback to learners)
 - *Learner assessment in medical education* (e.g. Miller's pyramid, ACGME competencies and milestones, OSCEs, creating MCQs)
 - *Working with "difficult learners"* (e.g. how to address problematic teaching-learning encounters, remediation plans)
- **Learning theory & science topics (3)**
 - *Adult and experiential learning theory* (e.g. Kolb's cycle, andragogy)
 - *Cognitive science principles for teaching and learning* (e.g. cognitive load theory, novice-expert shifts, transfer of learning)
 - *Learning environment* (e.g. role of emotion/context in learning, creating a safe learning environment)
- **Modes of teaching topics (4)** (modified in Round 2 to "**Teaching strategies & skills**")
 - *Case-based teaching* (e.g. teaching through a clinical case)

- *High-fidelity simulation teaching* (e.g. teaching through high-fidelity simulation exercises with a computerized manikin)
- *Interprofessional teaching* (e.g. teaching in outpatient and inpatient interprofessional settings)
- *Teaching through arts & the humanities* (e.g. teaching about patient-doctor relationships/visual diagnosis skills through arts & humanities)
- **Reflective practice topics (3)**
 - *Peer observation of teaching* (e.g. observing/evaluating a peer's teaching)
 - *Metacognitive strategies for teaching & learning* (e.g. how to self-reflect on one's teaching and learning processes)
 - *Self-directed learning principles* (e.g. how to engage in self-assessment, how to build self-directed learning plans)
- **Scholarship & leadership topics (3)**
 - *Career development as a medical educator* (e.g. how to build an educator's portfolio, mentorship)
 - *Research in medical education* (e.g. research questions, study designs, avenues for scholarship)
 - *Leading clinical teams* (e.g. role modeling, conflict management, time management)
- **Miscellaneous topics (4)**
 - *The hidden/informal curriculum* (e.g. behaviors that may convey messages about professional culture and values)
 - *Digital innovations in teaching and learning* (e.g. social media, podcasts, mobile applications for teaching and learning)
 - *Professionalism as a medical educator* (e.g. accountability, commitment to students, digital professionalism)
 - *Program evaluation* (e.g. Kirkpatrick's pyramid, evaluation logic model)