Many describe medical education as a continuum from medical school to practice, but this “continuum” is disrupted by multiple points of transition – from pre-med to medical school, pre-clerkship to clerkship, medical school to residency, residency to fellowship or to practice, not to mention the many transitions within a given stage of training (i.e., rotation to rotation). These transition points are widely recognized as both exhilarating opportunities for growth and stressful or overwhelming experiences that inhibit learning. Fortunately, educators have devoted much attention to these transition points over the last decade and much has been done in an effort to smooth the transitions across the continuum.
In this commentary, I focus on the transition from medical school to residency. Many studies have helped characterize the complexity of this transition, particularly given multiple stakeholders with competing priorities, varying perspectives on ‘the problem’ that needs fixing, and many potential ‘solutions’ to the problem.1-6

Efforts to smooth the transition from medical school to residency take many forms, including curricular interventions (formal courses or orientations), structural changes (procedures, policies), and individualization (advising/mentoring, learning plans informed by personal support). As I describe each of these, I will also comment on the implicit framing of the transition problem and possible implications for each effort.

**Curricular Interventions**

Programs on both sides of the transition have designed curricular interventions to help learners enter residency more prepared to perform key tasks and more confident in their ability to assume a higher level of responsibility. On the medical school side, more than half the schools responding to the LCME Annual Medical School Questionnaire for 2014-15 and 2015-16 reported a transition to residency preparatory course7 as shown in the above chart. Most of these courses occur during the fourth year of medical school, but vary widely in timing, length, content, and instructional methods or activities.7,8

On the residency program side of transitions, many programs have orientations9, bootcamps10, and immersion experiences11 to help interns adjust to new health care systems, new roles and new levels of responsibility so they can safely and effectively apply knowledge, perform skills, and communicate with patients, supervisors and team members.

These types of interventions frame the transition problem as one of preparation. A few studies suggest that program directors and supervisors of interns rate them below expected levels of performance in certain competency domains.12-16 However, reports from students and UME faculty suggest that students leave medical school relatively well prepared in these areas.14,17 Where is the lesion? Do students have difficulty applying competencies demonstrated in one context to a new context (a transfer problem)? Do GME faculty members' have different (higher) expectations than UME faculty?

**Structural Changes**

The transition to residency involves the complex process of matching graduating medical students to open positions in residency programs. In the 2016-17 Match cycle there were 35,969 active applicants for 31,757 positions. Although 99% of positions filled and nearly 80% of matched residents obtained one of their top three choices of programs18, many argue that the process is onerous, costly, and inefficient.1,19

Several policy and procedural changes have been recommended, such as limiting the number of applications by each individual, limiting the number of interviews offered to each candidate, designating a specific time period for interviews across all specialties, using videoconferencing for interviews, and improving the transparency of the process.1,3,4,19,20-22 Each of these has pros
and cons and at present none of these recommendations have been widely implemented. There have, however, been exciting pilot initiatives such as the use of standardized video interviews in emergency medicine to provide a more holistic view of applicants and the development of a set of core Entrustable Professional Activities (EPAs) for entering residency that could be used to provide standardized, performance-based benchmarks to increase transparency in the match process.\textsuperscript{24,25}

Changes to the Match process frame the transition problem primarily as problem of inefficient transactions. From this perspective, smoother transitions can be accomplished by making the process more transparent and fair, with less waste of time, effort, and money for all parties.

**Individualization**

Each learner has a unique constellation of strengths and weaknesses. When framed as a true continuum, learners’ progression through medical education should map to a developmental trajectory. Efforts to define and align milestones and EPAs across the continuum are underway in some specialties\textsuperscript{26} but much work remains. A recent conference held by the Josiah Macy, Jr. Foundation explored the notion of a medical education system that supports individualized learning trajectories through a competency-based, time-variable process.\textsuperscript{27} While several logistical challenges were identified, many endorse the idea as a way to move toward a system aligned with principles for effective learning. Some medical schools have also worked on improving career advising\textsuperscript{4,28,29} and development of individual learning plans that can span from medical school to residency.\textsuperscript{24,30}

These approaches to improve transitions in medical education address the problem of a discontinuous trajectory and a lack of clarity about the desired outcome from medical school education.\textsuperscript{31}

**Concluding thoughts on the “problem” with transition to residency**

There are many important efforts underway to address perceived problems with the transition from medical school to residency. Each of these efforts addresses a different perspective on the problem, which I characterize as:

- a transfer problem that suggests learners need better preparation for residency, particularly in adapting to new contexts and expectations
- a transaction problem that suggests all parties involved in the transition need a more efficient and transparent process
- a trajectory problem that suggests learners and educators need better benchmarks to assess progress and formulate customized learning plans

In reviewing each of these, I wonder if a deeper problem lies at the core. I view transitions as important opportunities for transformation and growth among learners. In a study of the effect of transitions in training on physicians’ performance, Kilminster and colleagues\textsuperscript{32} described transitions as critically intensive learning periods (CLIPs) in which individuals must adapt to new contexts, situations, and responsibilities. Supportive environments and relationships are critical factors in individuals’ ability to thrive and continue learning during these challenging experiences. Supporting this transformative process warrants our primary focus as we consider ways of improving the transition from medical school to residency.
Author:
Bridget C. O’Brien PhD is an associate professor and education researcher at the University of California, San Francisco, where she supervises doctoral students in the UCSF-University of Utrecht doctoral program and directs the San Francisco Veteran’s Affairs Fellowship in Health Professions Education Evaluation and Research. She co-authored Educating Physicians: A Call for Reform of Medical School and Residency and has published numerous peer-reviewed research papers and articles. Her research focuses on workplace learning across the continuum of health professions education.

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