Stepping Beyond the Step 1 Climate

David Chen, MS3
Kathryn Andolsek, MD MPH

Stepping Beyond the Step 1 Climate

David Chen, MS3

My first year of medical school – an orientation to Step 1

- Little attention was given to systemic barriers to health and well-being
- Step 1 was seen as the sole take away of the preclinical years

My experience with Step 1

- Long hours spent memorizing content of questionable relevance and accuracy
- Physical and emotional exhaustion
- “When I walked out of the exam, I felt a sense of profound emptiness. I erupted from a void dissociated from reality. Life seemed surreal and chaotic” (Haider 2018)
- My experience was not unique

The “Step 1 climate”

- Learning environment: test-prep materials as the *de facto* national curriculum
  - Learning for real life versus the boards
- Impact on diversity: underrepresented minorities, women, and students from low income families; “tiered worthiness” among medical students
- Student well-being: depression, burnout, and suicide
- We joined others in calling for a “truly” pass/fail Step 1

Response of Drs. Katsufrakis and Chaudhry

- Title: “Improving residency selection requires close study and better understanding of stakeholder needs” (Katsufrakis and Chaudhry 2018)
- “Thoughtful and broad consideration of stakeholders and their concerns ... will be necessary...”
- “Does Step 1 performance predict residency success? To our knowledge, no study has been done to answer this question.”
  - This contradicts previous literature (Prober et al 2016; McGaghie et al 2011; Gliatto et al 2016)
  - Whose burden of proof is it?
- Conflict of interest?

Centering patients

- The purpose of licensure examinations is to ensure a minimum threshold of competency
- In a field rife with inequities based on race (Williams and Cooper 2019) and gender (Kent et al 2012), can we say we are guaranteeing competency?
- Our patients are not multiple choice questions

Step 1 reform as an opportunity

- A brief history of medical education: Flexner Report of 1910, the first NBME exam was given in 1916, a multiple choice version was developed in the 1950s, and it was converted to electronic format in the 1990s (www.nbme100.org)
- “The need for a fundamental redesign of the content of medical training is clear” (Cooke et al 2006)
- What are the barriers?
- It is an ominous sign for patients who interact with the medical establishment if we in medical education are unable to address our problems

Stepping Beyond the Step 1 Climate

Kathryn M Andolsek, MD MPH

Conflicts of interest

- *My opinions are my own, and do not reflect those of organization(s) of which I am a member, volunteer, or employee*

- *I was an invited participant to the* InCUS Conference

Important details about USMLE Step 1 exam

- Originated as a *licensing* exam
- Psychometrically designed “pass/fail”
- Students spend up to $825 on Step 1 resources
- Correlates with performance on subsequent exams; not
  - Residency progression
  - Faculty evaluations
  - Clinical skills
- Different groups perform “differently”
  - Women
  - Those historically underrepresented in medicine
  - Non-traditional students
  - Those with financial need

Stakeholders

- Medical students
- Patients ?
- Medical licensing boards
- Medical schools
- Program directors

Stakeholders

- Medical Students
  - The *de facto* curriculum
  - Judge curriculum as “high yield” or not

Stakeholders

- Medical Licensing Boards
  - Set floor for physician competency in their state

Stakeholders

- Medical Schools
  - Threshold for progression (?)
  - Metric to judge adequacy/quality of preclinical curriculum
  - Proxy for how likely their students will be “to match”

Program Directors

- Use Step 1 scores to identify which medical students will get full review of their application & interviews! Some PDs use "cut off score"
  - Frequently set at < 220-240 (higher for more competitive specialties)
  - 90% residency graduates (pediatrics, obstetrics, orthopaedic surgery, anesthesia, internal medicine) pass board exams if Step 1 scores 200-227
- Use as proxy for who will pass certification board (used as measure of program quality by ACGME)

Could Licensing Boards *instead* use?

The Program Director must provide a ***final evaluation*** for each resident upon completion of the program. V.A.2.a)

- The specialty-specific Milestones, and when applicable the specialty-specific Case Logs, must be used as tools to ensure residents are able to engage in autonomous practice upon completion of the program. V.A.2.a).(1)
- The final evaluation must: V.A.2.A).(2)
  - Become part of the resident's permanent record maintained by the institution, and must be accessible for review by the resident in accordance with institutional policy. V.A. 2.a).(a)
  - Verify that the resident has demonstrated the knowledge, skills, and behaviors necessary to enter autonomous practice. V.A.2.a).(2).(b)

Program Directors need:

- More relevant measures to assess and communicate medical school performance
  - ACGME Competencies – milestones language
  - Core Entrustable Professionable Activities for Entering Residency
- A tool specifically developed for resident selection (that correlates with performance)

My questions for those of you listening:

- How do YOU use Step 1 scores in your institution?
- What would you lose if Step 1 were either reported pass- fail, or discontinued entirely?

Contact us

- David Chen, MS3 – chend4@uw.edu
- Kathryn Andolsek, MD MPH – kathryn.andolsek@duke.edu

References

- Andolsek KM. One Small Step for Step 1. Acad Med. 2019 Mar;94(3):309-313
- Berner ES, Brooks CM, Erdmann JB. IV: Use of the USMLE to Select Residents. Acad Med. 1993;68:753-759
- Chen DR, Priest KC, Batten JN, Fragoso LE, Reinfield BI, Laitman BM. Student Perspectives on the "Step 1 Climate" in Preclinical Medical Education. Acad Med. 2019;94:302–304.
- Cooke M, Irby DM, Sullivan W, Ludmerer KM. American Medical Education 100 Years after the Flexner Report. N Engl J Med. 2006;355(13):1339-44
- Dias RD, Gupta A, Yule SJ. Using Machine Learning to Assess Physician Competence: A Systematic Review. Acad Med. 2019 Mar;94(3):427-439
- Gauer JL,Jackson JB. Relationships of demographic variables to USMLE physician licensing exam scores: a statistical analysis on five years of medical student data. Adv Med Educ Pract. 2018;10:39-44.
- Gliatto P, Leitman IM, Muller D. Scylla and Charybdis: The MCAT, USMLE, and Degrees of Freedom in Undergraduate Medical Education. Acad Med. 2016;91(11).
- Haider SR. Beyond USMLE Step 1. Acad Med. 2018;93(4).
- Haist SA, et al. The Evolution of the US Medical Licensing Examination (USMLE): Enhancing Assessment of Practice-Related Competencies. JAMA. 2013;310:2245-2246.
- Haist SA, Butler AP, Paniagua MA. Testing and evaluation: the present and future of the assessment of medical professionals. Adv. Physiol. Educ. 2017;41:149-153.
- Katsufrakis PJ, Chaudhry HJ. Improving Residency Selection Requires Close Study and Better Understanding of Stakeholder Needs. Acad Med. 2019;94:305–308.
- Kent JA, Patel V, Varela NA. Gender Disparities in Health Care. Mt Sinai J Med. 2012;79(5):555–9.
- Kim RH Tan TW. Interventions that affect resident performance on the American Board of Surgery In-Training Examination: A systematic review. J Surg Educ. 2015;72:418-29
- Lewis CE, et al. Numerical Versus Pass/Fail Scoring on the USMLE: What do Medical Students and Residents Want and Why? J Grad Med Educ. 2011;3:59-66.
- Marcus-Blank B et al. Predicting Performance of First-Year Residents: Correlations Between Structured Interview, Licensure Exam, and Competency Scores in a Multi-Institutional Study. Acad Med. 2019 Mar;94(3):378-387 28,
- McGaghie WC et al. Are US Medical Licensing Exam Step 1 & 2 Scores Valid Measures for Postgraduate Medical Residency Selection Decisions? Acad Med. 2011;86:48-52
- Prober CG, et al. A Plea to Reassess the Role of United States Medical Licensing Examination Step 1 Scores in Residency Selection. Acad Med. 2016; 91:12-15.
- Rubright JD, et al. Examining Demographics Prior Academic Performance and United States Medical Licensing Examination Scores. Acad Med. 2019 Mar;94(3):364-370
- Williams RD, Cooper AL. Reducing Racial Inequities in Health: Using What We Already Know to Take Action. *Int. J. Environ. Res. Public Health* **2019**, *16*(4), 606;
- Zuckerman SL et al. Predicting Resident Performance from Preresidency Factors: A Systematic Review & Applicability to Neurosurgical Training. World Neurosurg. 2018;110:475-484