

Medical Education Journal Club

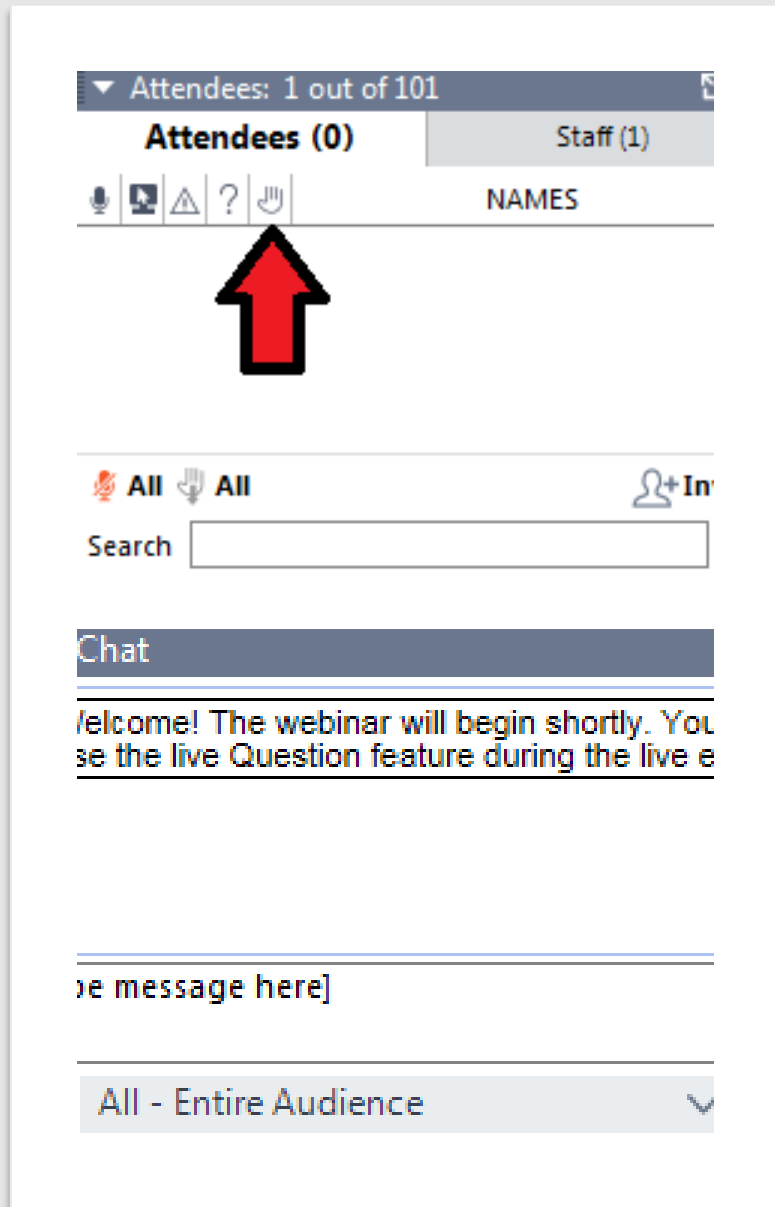
Controversies Surrounding USMLE:
Step 1 Timing / Ending Step 2 CS
February 13, 2018

Michelle Daniel, MD, MHPE, Assistant Dean for Curriculum, University of Michigan Medical School

Felise Milan, MD, Director, Clinical Skills Center, Albert Einstein College of Medicine

Webinar Housekeeping

- Enter in your Audio PIN
- All attendees are muted automatically. Please do not mute yourself.
- Use the chat box or press the Raised Hand icon to participate
- Webinar will be recorded

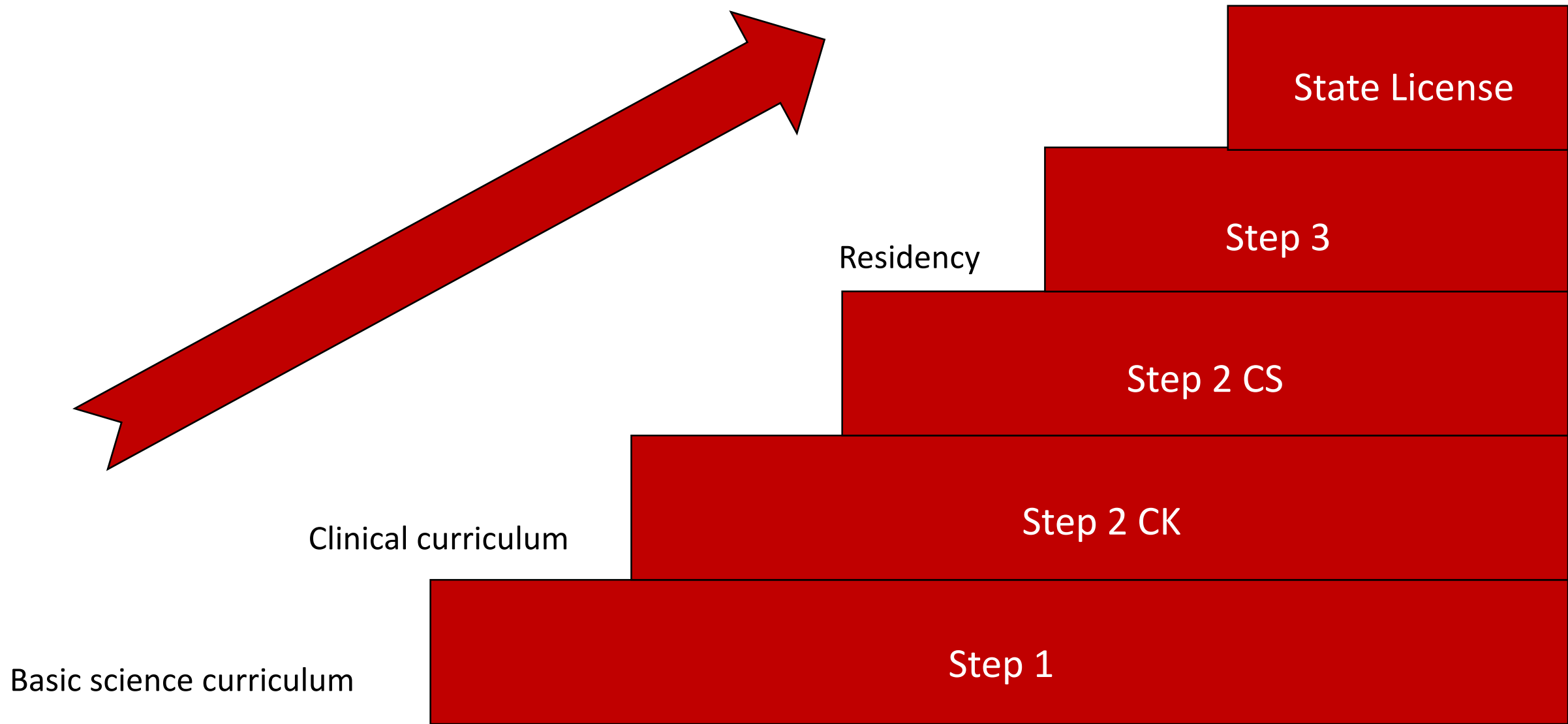


The screenshot displays a webinar control panel. At the top, it shows 'Attendees: 1 out of 101' and two tabs: 'Attendees (0)' and 'Staff (1)'. Below the tabs is a row of icons: a microphone (muted), a video camera (off), a triangle (mute/unmute), a question mark (help), and a raised hand (participate). A large red arrow with a black outline points directly to the raised hand icon. To the right of these icons is a 'NAMES' column. Below the icons is a search bar with the text 'Search' and a search icon. Further down is a 'Chat' section with a message: 'Welcome! The webinar will begin shortly. You can use the live Question feature during the live event.' At the bottom, there is a dropdown menu currently set to 'All - Entire Audience'.

Objectives

- Examine the rationale, logistics, and outcomes of delaying Step 1 to after core clerkships.
- Discuss financial considerations of medical licensing exams in the US.
- Explore potential consequences of ending Step 2 CS.

Steps to licensure



Key questions

Why is Step 1 traditionally placed before core clerkships?

Why is a national clinical skills (CS) assessment necessary?



Today's Articles

Daniel, M., Fleming, A., Grochowski, C. O. C., Harnik, V., Klimstra, S., Morrison, G., ... & Santen, S. (2017). Why not wait? Eight Institutions share their experiences moving United States Medical Licensing Examination Step 1 after core clinical clerkships. *Academic Medicine*, 92(11), 1515-1524.

Ecker, D. J., Milan, F. B., Cassese, T., Farnan, J. M., Madigosky, W. S., Massie, J. F., ... & Uchida, T. (2017). Step Up-Not On-The Step 2 Clinical Skills Exam: Directors of Clinical Skills Courses (DOCS) Oppose Ending Step 2 CS. *Academic medicine*.
[epub ahead of print]

Why Not Wait? Eight Institutions Share Their Experiences Moving United States Medical Licensing Examination Step 1 After Core Clinical Clerkships

Michelle Daniel, MD, MHPE, Amy Fleming, MD, MHPE, Colleen O'Conner Grochowski, PhD, Vicky Harnik, PhD, Sibel Klimstra, MD, Gail Morrison, MD, Arnyce Pock, MD, Michael L. Schwartz, PhD, and Sally Santen, MD, PhD

Abstract

The majority of medical students complete the United States Medical Licensing Examination Step 1 after their foundational sciences; however, there are compelling reasons to examine this practice. This article provides the perspectives of eight MD-granting medical schools that have moved Step 1 after the core clerkships, describing their rationale, logistics of the change, outcomes, and lessons learned. The primary reasons these institutions cite for moving Step 1 after clerkships are to foster more enduring and integrated basic

science learning connected to clinical care and to better prepare students for the increasingly clinical focus of Step 1. Each school provides key features of the preclerkship and clinical curricula and details concerning taking Steps 1 and 2, to allow other schools contemplating change to understand the landscape. Most schools report an increase in aggregate Step 1 scores after the change. Despite early positive outcomes, there may be unintended consequences to later scheduling of Step 1, including relatively late student reevaluations of

their career choice if Step 1 scores are not competitive in the specialty area of their choice. The score increases should be interpreted with caution: These schools may not be representative with regard to mean Step 1 scores and failure rates. Other aspects of curricular transformation and rising national Step 1 scores confound the data. Although the optimal timing of Step 1 has yet to be determined, this article summarizes the perspectives of eight schools that changed Step 1 timing, filling a gap in the literature on this important topic.

Step Up—Not On—The Step 2 Clinical Skills Exam: Directors of Clinical Skills Courses (DOCS) Oppose Ending Step 2 CS

David J. Ecker, MD, Felise B. Milan, MD, Todd Cassese, MD, Jeanne M. Farnan, MD, MHPE, Wendy S. Madigosky, MD, MSPH, F. Stanford Massie Jr, MD, Paul Mendez, MD, Sharon Obadia, DO, Robin K. Ovitsh, MD, Ronald Silvestri, MD, Toshiko Uchida, MD, and Michelle Daniel, MD, MHPE

Abstract

Recently, a student-initiated movement to end the United States Medical Licensing Examination Step 2 Clinical Skills and the Comprehensive Osteopathic Medical Licensing Examination Level 2-Performance Evaluation has gained momentum. These are the only national licensing examinations designed to assess clinical skills competence in the stepwise process through which physicians gain licensure and certification. Therefore, the movement to end these examinations and the ensuing

debate merit careful consideration. The authors, elected representatives of the Directors of Clinical Skills Courses, an organization comprising clinical skills educators in the United States and beyond, believe abolishing the national clinical skills examinations would have a major negative impact on the clinical skills training of medical students, and that forfeiting a national clinical skills competency standard has the potential to diminish the quality of care provided to patients. In this

Perspective, the authors offer important additional background information, outline key concerns regarding the consequences of ending these national clinical skills examinations, and provide recommendations for moving forward: reducing the costs for students, exploring alternatives, increasing the value and transparency of the current examinations, recognizing and enhancing the strengths of the current examinations, and engaging in a national dialogue about the issue.



Basic
Science

Clinical
Science

M1

M2

M3

M4



Basic, Clinical & Health System Science

Foundational Science

M1

M2

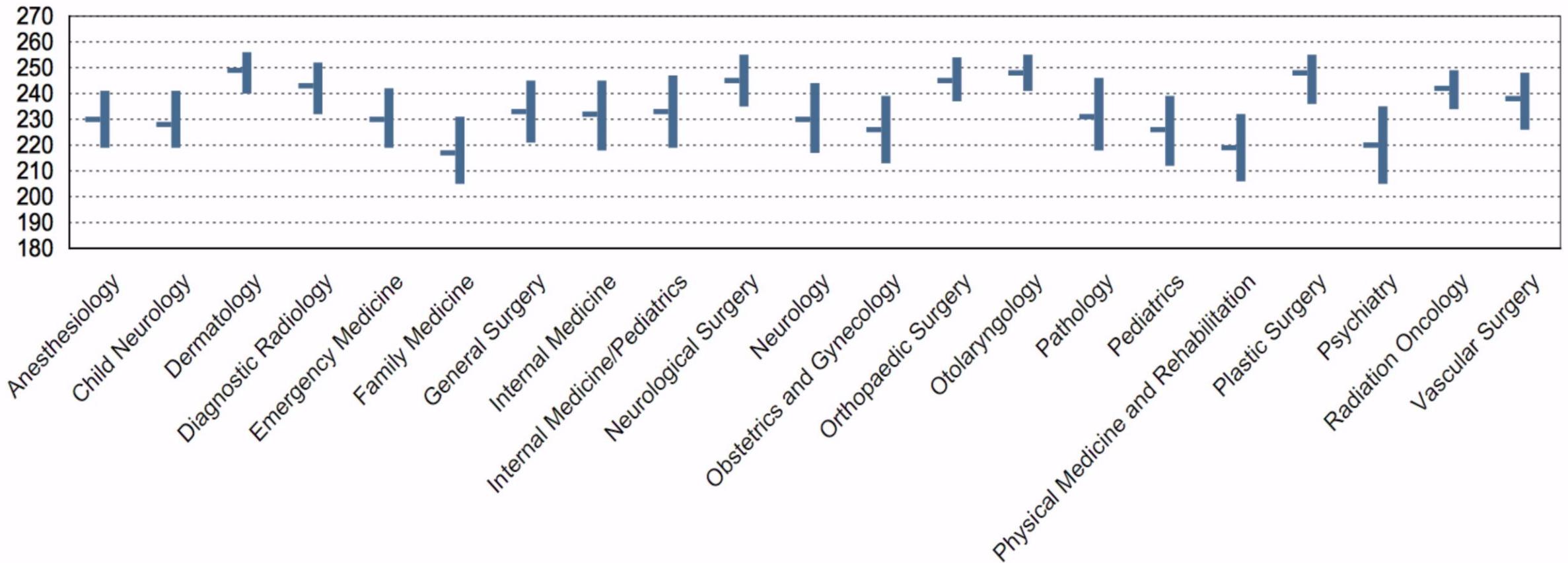
M3

M4



Improve Step 1 Scores

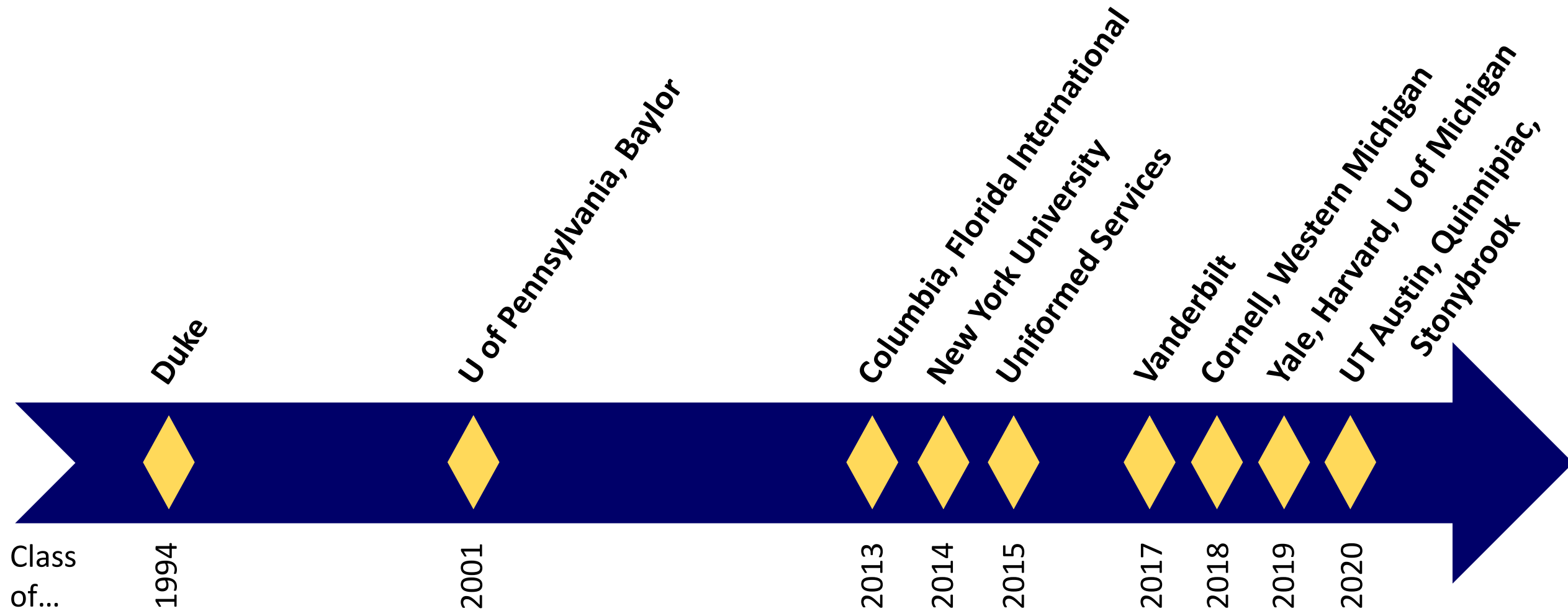
USMLE Step 1 Scores of Matched Applicants by Preferred Specialty



67 year-old male who was recently diagnosed with colorectal cancer presents with fever and shortness of breath that started 2 days prior to presentation. Patient also noticed that his hands are “more red than usual” and there are painful lesions on his fingers. Cardiovascular examination is remarkable for a holosystolic, “blowing” murmur best heard in the mitral area which was not present during prior examinations. Preliminary results of the blood culture is positive for a gram positive cocci. Which of the following organism is most likely responsible for patient’s disease?

- A. *Staphylococcus aureus*
- B. *Streptococcus viridians*
- C. *Staphylococcus epidermidis*
- D. *Streptococcus bovis***
- E. *Eikenella corrodens*

At least **16** schools have moved or are moving Step 1...



*USMLE Step 1 first offered in 1992

Logistics of the “Pre-clerkship” Curricula

- Duration of basic science curricula
 - Average 56 weeks (13 months)
 - Range 45 – 73 weeks
- Type of basic science curricula
 - (Most) Integrated single pass (normal taught simultaneously with abnormal)
 - (A few) Two pass (sequential normal followed by abnormal)
 - (All) Organ system based
- Grades – mostly Pass / Fail (1 school numeric, 1 H/P/F)
- 1/3 of schools offer a “knowledge consolidation alternative” to Step 1 such as the CBSE

Logistics of the Clinical Curricula

- Duration of the core clerkships
 - Majority 48 weeks
 - Range 41-52 weeks
- Grading during clerkships
 - Honors / High Pass / Pass / Fail in majority
 - Most used NBME clinical subject “shelf” exams
- All schools report deliberate basic science integration during clerkships, but it’s a “work in progress” for many

Details Concerning Step 1 and Step 2 CK

- Step 1 Study Aids Offered During Clerkships
 - Spaced repetition of learning and assessment (many platforms)
 - CBSSA Tokens
 - Access to question banks
- Timing of Step 1 AFTER clerkships
 - Mandatory for most
 - Schools that offer flexible option encounter some challenges...
- Duration of the Step 1 study period
 - Range 4-8 weeks
 - Sweet spot ~ 5 (most need less time to prepare when Step 1 after clerkships)



US·MLE
United States
Medical
Licensing
Examination

TM

Outcomes

- Most desirable outcomes are RETENTION of foundational knowledge and INTEGRATION of basic and clinical science learning (hard to measure)...
- In general, Step 1 scores go up:
 - Duke and Baylor have consistently high scores (but no data before the change)
 - University of Pennsylvania ↑ 20 points
 - Columbia ↑ 3 points
 - NYU ↑ 7-12 points
 - USUHS ↑ 10-13 points
 - FIU (new school) has higher scores than predicted by MCATs
 - Vanderbilt ↑ 9 points

CAUTION CAUTION CAUTION

Limitations

- Difficult to disentangle from impact of other curricular changes
- Change occurred in the context of rising national Step 1 scores
- Differences in cohort abilities (pre-post) were not accounted for
- Data was reported in aggregate, and the potential for different impacts on low versus high performing students was not addressed
- Most institutions had average or above-average baseline Step 1 scores, thus their experience may not generalize to other schools

Next Steps

- Detailed psychometric analysis of outcomes that accounts for rising national Step 1 scores and potentially different cohort abilities (based on entrance MCAT scores)
- Step 1 scores are not the only important outcomes. Step 1 historically has served a knowledge consolidation function prior to clinical clerkships. What happens to shelf exam scores when Step 1 is moved after core clerkships?

Next Steps

- Detailed psychometric analysis of outcomes that accounts for rising national Step 1 scores and potentially different cohort abilities (based on entrance MCAT scores)
- Step 1 scores are not the only important outcomes. Step 1 historically has served a knowledge consolidation function prior to clinical clerkships. What happens to shelf exam scores when Step 1 is moved after core clerkships?

An Update on Outcomes... (Press Embargo!)

Table 2

Descriptive Statistics Relative to Curricular Change Aggregated across the Study Schools

Cohort Relative to Implementation	N	Mean Three-Digit Score	SD Three-Digit Score	Mean Difference From National Average	SD Difference Score	Fail Rate Percentage
-3	548	230.09	20.94	6.38	20.84	3.83%
-2	566	229.75	19.79	5.08	20.04	2.12%
-1	554	230.03	19.71	3.61	20.25	2.71%
1	538	236.86	17.44	7.70	17.63	0.74%
2	536	238.36	17.09	8.89	17.09	0.19%
3	455	236.25	17.00	6.64	16.95	0.22%

Note. The -3 cohort represents three years prior to exam timing requirement change, -2 represents two years prior, and so forth

Next Steps

- Detailed psychometric analysis of outcomes that accounts for rising national Step 1 scores and potentially different cohort abilities (based on entrance MCAT scores)
- Step 1 scores are not the only important outcomes. Step 1 historically has served a knowledge consolidation function prior to clinical clerkships. What happens to shelf exam scores when Step 1 is moved after core clerkships?



Limitations

Late student reevaluation of their career choices if Step 1 scores are not competitive in specialty choice

Score increases need to be interpreted with caution

8 schools in article may not be representative w/regard to scores and failure rates

Students may not be prepared for clerkships w/out time to consolidate basic science knowledge

Concern for effect on struggling students

Bibliometrics

Why Not Wait? Eight Institutions Share Their Experiences Moving United States Medical Licensing Examination Step 1 After Core Clinical Clerkships

Overview of attention for article published in Academic medicine, April 2017



? About this Attention Score

In the top 25% of all research outputs scored by Altmetric

MORE...

Mentioned by

29 tweeters
1 Redditor

Readers on

5 Mendeley

SUMMARY

Twitter

Reddit

Title Why Not Wait? Eight Institutions Share Their Experiences Moving United States Medical Licensing Examination Step 1 After Core Clinical Clerkships

Published in Academic medicine, April 2017

DOI 10.1097/acm.0000000000001714

Pubmed ID 28422816

Authors Daniel, Michelle, Fleming, Amy, Grochowski, Colleen O'Conner, Harnik, Vicky, Klimstra, Sibel...
[\[show\]](#)

Abstract The majority of medical students complete the United States Medical Licensing Examination Step 1...
[\[show\]](#)

[View on publisher site](#)

[Alert me about new mentions](#)

TWITTER DEMOGRAPHICS

MENDELEY READERS

ATTENTION SCORE IN CONTEXT

The data shown below were collected from the profiles of 29 tweeters who shared this research output. [Click here to find out more about how the information was compiled.](#)



DONALD AND BARBARA
ZUCKER SCHOOL of MEDICINE
AT HOFSTRA/NORTHWELL



Step Up—Not On—The Step 2 Clinical Skills Exam: Directors of Clinical Skills Courses (DOCS) Oppose Ending Step 2 CS

David J. Ecker, MD, Felise B. Milan, MD, Todd Cassese, MD, Jeanne M. Farnan, MD, MHPE, Wendy S. Madigosky, MD, MSPH, F. Stanford Massie Jr, MD, Paul Mendez, MD, Sharon Obadia, DO, Robin K. Ovitsh, MD, Ronald Silvestri, MD, Toshiko Uchida, MD, and Michelle Daniel, MD, MHPE

Abstract

Recently, a student-initiated movement to end the United States Medical Licensing Examination Step 2 Clinical Skills and the Comprehensive Osteopathic Medical Licensing Examination Level 2-Performance Evaluation has gained momentum. These are the only national licensing examinations designed to assess clinical skills competence in the stepwise process through which physicians gain licensure and certification. Therefore, the movement to end these examinations and the ensuing

debate merit careful consideration. The authors, elected representatives of the Directors of Clinical Skills Courses, an organization comprising clinical skills educators in the United States and beyond, believe abolishing the national clinical skills examinations would have a major negative impact on the clinical skills training of medical students, and that forfeiting a national clinical skills competency standard has the potential to diminish the quality of care provided to patients. In this

Perspective, the authors offer important additional background information, outline key concerns regarding the consequences of ending these national clinical skills examinations, and provide recommendations for moving forward: reducing the costs for students, exploring alternatives, increasing the value and transparency of the current examinations, recognizing and enhancing the strengths of the current examinations, and engaging in a national dialogue about the issue.

Step 2 CS

- Originally only for foreign medical grads
- Largely to ensure all those with US medical license could communicate in English



Do Doctors Have Time for Empathy?

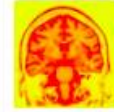
BY TARA PARKER-POPE SEPTEMBER 25, 2008 3:56 PM

A new study this week found that doctors often miss opportunities to express empathy to their patients. Does this mean doctors don't care? Or could it be they just don't have the time?

HOME SEARCH

The New York Times

More U.S. Children
Previously Thought
Have Fetal Alcohol
Disorders



A Brain Implant Improved
Memory, Scientists Report



Flu Patients Arrive in
Droves, and a Hospital
Rolls Out the 'Surge Tent'



THE NEW OLD AGE
If Immigrants Are P
Out, Who Will Care
Elderly?

ALL-NEW
TERRAIN
AVAILABLE 2.0L TURBO ENGINE



HEALTH | BEING A PATIENT

When the Doctor Is in, but You Wish He Weren't

By GINA KOLATA NOV. 30, 2005

- Influence of technology on doctor-patient relationship.
- Increasing concerns about physicians communication skills.
- Malpractice connected to poor communication skills.

History of the End Step 2 CS movement

- Step 2CS added to the licensing exam in 2005
- Students from Harvard started movement to end Step 2CS
- Students can vote in Mass, Michigan state AMAs, early 2016 passed resolutions to end Step 2CS
- With growing support, signatures on petitions, national AMA passed resolution

American Medical Association (AMA) Resolution Regarding the Abolition of the United States Medical Licensing Examination Step 2 Clinical Skills^a

D-295.988, Clinical Skills Assessment During Medical School

1. Our AMA will encourage its representatives to the Liaison Committee on Medical Education (LCME) to ask the LCME to determine and disseminate to medical schools a description of what constitutes appropriate compliance with the accreditation standard that schools should “develop a system of assessment” to assure that students have acquired and can demonstrate core clinical skills.
2. Our AMA will work with the Federation of State Medical Boards, National Board of Medical Examiners, state medical societies, state medical boards, and other key stakeholders to pursue the transition from and replacement for the current United States Medical Licensing Examination (USMLE) Step 2 Clinical Skills (CS) examination and the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) Level 2 Performance Examination (PE) with a requirement to pass a Liaison Committee on Medical Education-accredited or Commission on Osteopathic College Accreditation-accredited medical school-administered, clinical skills examination.
3. Our AMA will work to: (a) ensure rapid yet carefully considered changes to the current examination process to reduce costs, including travel expenses, as well as time away from educational pursuits, through immediate steps by the Federation of State Medical Boards and National Board of Medical Examiners; (b) encourage a significant and expeditious increase in the number of available testing sites; (c) allow international students and graduates to take the same examination at any available testing site; (d) engage in a transparent evaluation of basing this examination within our nation’s medical schools, rather than administered by an external organization; and (e) include active participation by faculty leaders and assessment experts from U.S. medical schools, as they work to develop new and improved methods of assessing medical student competence for advancement into residency.

Objections to Step 2 CS

- Cost of the exam
 - \$1285 for US grads
 - \$1565 for non-US grads
- Cost and Inconvenience of the travel
- Redundancy with medical school assessments
- Subjectivity of the evaluation



Potential Consequences of Ending Step 2CS

- Devaluing Clinical Skills in Medical Education
- Forfeiting national standard for clinical skills
- Exam reliability and psychometrics
- Cost of decentralized examination
- Professional compact with the public

Devaluing of Clinical Skills

- Concern about assessment of clinical skills
- Students rarely observed taking history, doing physical exam in clerkships (Howley Acad Med 2004)
- There was growing concern about our assessment system relying too heavily on knowledge exams and not assessing clinical skills (Kassebaum Acad Med 1999)

Evaluation drives Learning

- “While licensure examinations should not dictate medical school curriculum, it is evident that the content and structure of those examinations do directly influence medical student education and evaluation”

(AMA House of Delegates proceedings 2004)

Evaluation drives Learning

Since Step 2 CS :

1. Increased emphasis and curricular time to clinical skills (Gilliland Med Teach 2008)
2. Number of medical schools administering a final comprehensive OSCE increased from 75% in 2004 to 94% in 2016.



Assessment

...is the
engine
which drives
student learning

(John Cowan)

Forfeiting a National Standard

- While almost all schools have a comprehensive OSCE in 3rd or 4th year, only 80% require passing the exam for graduation.
- Each school has its own passing standard with MANY still using norm referenced standard setting.
- Criterion referenced standard setting requires time and expertise (psychometricians) which is lacking at many schools.
- Relying on local standards for clinical skills assessment would produce huge variation, poor reliability.
- Most schools do not have the capacity for the security needed for such a high stakes exam.

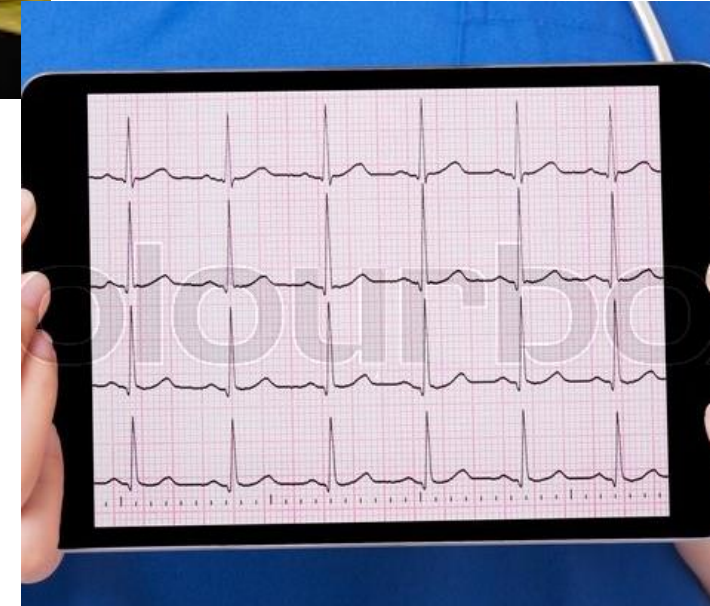
Costs of 140+ different clinical skills exams

To ensure

- Reliability (number of cases, psychometrics)
 - Technology (task trainers, images on tablets, moulage)
 - Security
 - Retests (most schools have scaled down retests for students who fail)
-
- Very likely would result in overall increased costs that would likely get passed onto students thru increased tuition.

Step 2 CS in evolution

- Passing standard just increased Sept 2017
- Incorporating several new dimensions in exam
 - Communication challenges
 - Interpretation of imaging, exams (i.e. EKGs)
 - Hybrid exams with abnormal physical exam findings
- Likely to continue to influence curriculum



Summary of Possible Consequences of Abandoning National Clinical Skills Examinations and of Key Recommendations

Potential Consequences

- Devaluing clinical skills in medical education
- Forfeiting a national standard and generalizability
- Threatening robust examination psychometrics
- Increasing costs for examinees
- Failing to protect the public

Key Recommendations

- Reduce the total cost of national licensing examinations for students
- Explore alternate assessment methods
- Increase value to examinees, medical schools, and residency programs
- Increase transparency
- Recognize and enhance the strengths of the current examinations
- Engage key stakeholders in a national dialogue

AMA addends Step 2 CS Resolution

- 4. Our AMA is committed to assuring that all medical school graduates entering graduate medical education programs have demonstrated competence in **clinical skills**.
- 5. Our AMA will continue to work with appropriate stakeholders to assure the processes for assessing **clinical skills** are evidence-based and most efficiently use the time and financial resources of those being assessed.
- 6. Our AMA encourages development of a post-examination feedback system for all USMLE test-takers that would: (a) identify areas of satisfactory or better performance; (b) identify areas of suboptimal performance; and (c) give students who fail the exam insight into the areas of unsatisfactory performance on the examination.
- 7. Our AMA, through the Council on Medical Education, will continue to monitor relevant data and engage with stakeholders as necessary should updates to this policy become necessary.



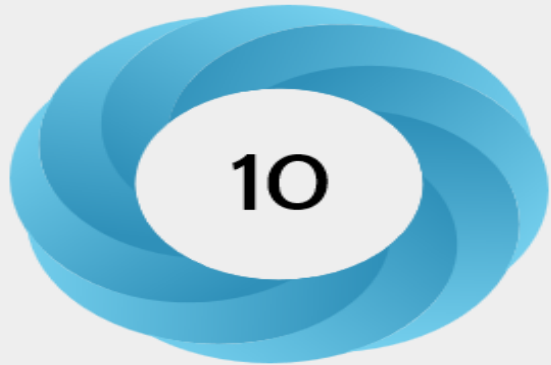
Limitations

- Major negative consequences on the clinical skills training of medical students
- Risk forfeiting a national clinical skills competency standard
- Long term diminish the quality of care provided to patients

Bibliometrics

Step Up—Not On—The Step 2 Clinical Skills Exam

Overview of attention for article published in Academic medicine, August 2017



About this Attention Score


In the top 25% of all research outputs scored by Altmetric

[MORE...](#)

Mentioned by

 16 tweeters

Readers on


 2 Mendeley

What is this page?

SUMMARY

Twitter

Title	Step Up—Not On—The Step 2 Clinical Skills Exam
Published in	Academic medicine, August 2017
DOI	10.1097/acm.0000000000001874
Pubmed ID	28834843
Authors	Ecker, David J., Milan, Felise B., Cassese, Todd, Farnan, Jeanne M., Madigosky, Wendy S., Massie, F... [show]
Abstract	Recently, a student-initiated movement to end the United States Medical Licensing Examination Step... [show]

 [View on publisher site](#)

 [Alert me about new mentions](#)

TWITTER DEMOGRAPHICS

MENDELEY READERS

ATTENTION SCORE IN CONTEXT

The data shown below were collected from the profiles of **16** tweeters who shared this research output. [Click here to find out more about how the information was compiled.](#)



DONALD AND BARBARA
ZUCKER SCHOOL of MEDICINE
AT HOFSTRA/NORTHWELL

Thank you!

Will the results of these articles impact your future practice?

Survey Link: <https://www.surveymonkey.com/r/D88GYZH>

Next Journal Club: Tuesday, March 13, 2018

Presented by: Rebecca Dougherty, MD

Topic: Quality and Medical Education Across the Continuum