Supplemental Digital Appendix 1

Directors of Clinical Skills Courses (DOCS) Survey: Teaching and Assessing the Physical Examination. From a National Study of Resources Used to Teach the Physical Exam to Medical Students, 2015–2016

Instructions:

We anticipate that it will take you less than 30 minutes to complete the survey. You may save your responses and come back to the survey at a later time.

The purpose of this survey is to characterize the current state of teaching and assessing the physical exam with medical students in the pre-clerkship years. This survey is being conducted by the Directors of Clinical Skills Courses (DOCS), and the survey should be completed by the DOCS Institutional Representative at your medical school. The Institutional Representative may ask for input from other members of your faculty and administration but there should be only one survey completed per medical school. Please note that all questions relate to teaching and assessing the pre-clerkship physical exam ONLY. The questions below do NOT pertain to teaching the physical exam in the clerkship year(s) or later, and the questions do NOT pertain to teaching and assessing other clinical skills (communication skills, history-taking, clinical reasoning, etc.).

Only required activities which are a part of the official curriculum should be included.

This survey is not anonymous but data will only be reported in aggregate. There are no known risks associated with completing this survey. This project has been granted exempt status from The University of Chicago Institutional Review Board (IRB). By completing this survey you are agreeing to have your responses analyzed and reported in the aggregate with the rest of the survey respondents. If you have any questions please contact Toshi Uchida: toshiko-uchida@northwestern.edu.

This survey is best viewed on a desktop computer (rather than mobile device) with a larger, maximized screen.

1) What is the duration of your school’s entire pre-clerkship curriculum? (do not include summer vacation)
   ( ) 12 months
   ( ) 13-15 months
   ( ) 16-18 months
   ( ) 19-21 months
   ( ) 22-24 months
   ( ) Other: ________________________________________________
2) **After how many months into your curriculum do you introduce the physical exam?**
e.g., if the curriculum begins in August and the introduction to the physical exam begins in October, the introduction occurs 2 months into the curriculum.

[Questions #3 and 4 are intentionally removed as they are repeats of questions #1 and 2.]

5) **What percentage of your physical exam curriculum is taught interprofessionally; i.e., with other health professions students?**
   ( ) 0-25%
   ( ) 26-50%
   ( ) 51-75%
   ( ) 76-100%
   ( ) We do not include interprofessional education

6) **In addition to medical students, which other health professions students are included in your physical exam curriculum?** (choose all that apply)
   [ ] Dental students
   [ ] Physician Assistant (PA) students
   [ ] Nurse Practitioner (NP) students
   [ ] Physical Therapy (PT) students
   [ ] Other (please specify): ________________________________
   [ ] We do not include other health professions students in the physical exam curriculum

7) **Is your physical exam curriculum integrated with any of the following courses/content?** (choose all that apply)
   [ ] History-taking
   [ ] Anatomy
   [ ] Physiology/Pathophysiology
   [ ] Other (please specify): ________________________________
   [ ] We do not integrate with any other courses/content

8) **How does your school teach basic physical exam skills (inspection, palpation, percussion, auscultation) and advanced physical exam skills (e.g., egophony, evaluating for ascites, provocative musculoskeletal tests)?**
   ( ) Basic skills and advanced skills are taught at the same time by organ system
   ( ) Basic skills are taught first, then advanced skills are taught later, but both are covered in the pre-clerkship curriculum
   ( ) Basic skills are taught in the pre-clerkship curriculum and advanced skills are taught during or beyond the clerkships
   ( ) Basic skills are taught first, then advanced skills are taught later, some in the pre-clerkship curriculum and some in the clerkships and beyond
   ( ) Other (please specify): ________________________________
9) What general approach is used to teach the physical exam? (choose all that apply)
   [ ] Comprehensive physical exam (e.g., head-to-toe, organ system-based approach, in which a “toolbox” of maneuvers is taught)
   [ ] Clinical reasoning physical exam (e.g., Core + Clusters, Hypothesis-Driven Physical Exam, problem-focused physical exam, evidence-based physical exam; in which clinical reasoning determines which physical exam maneuvers are performed)
   [ ] Other (please specify): ______________________________________

10) What percentage of time is devoted to each approach, selected in the preceding question?
    (should add up to approximately 100%)
    ______Comprehensive physical exam
    ______Clinical reasoning physical exam
    ______Other (as specified in above question)

11) What percent of time is spent in the following settings when teaching the physical exam?* 
    (should add up to approximately 100%)
    ______Lecture or other large group format
    ______Small groups in a classroom setting
    ______Inpatient clinical settings
    ______Outpatient clinical settings
    ______Simulation Center
    ______Other

12) If you selected "other" for the preceding question, please specify what other settings you use to teach the physical exam.*
    ____________________________________________________________

13) If small groups (up to 20 students) are used for teaching the physical exam, what is the average number of students within each group?*
    0 ________________________[__]_____________________________ 20

14) If inpatient settings are used for teaching the physical exam, what is the average number of students per inpatient preceptor at any one time?*
    0 ________________________[__]_____________________________ 12

15) If outpatient settings are used for teaching the physical exam, what is the average number of students per outpatient preceptor at any one time?*
    0 ________________________[__]_____________________________ 12

16) What percent of time are the following instructors used to teach the physical exam?* 
    (should add up to approximately 100%)
    ______Generalist faculty (family physicians, general internists, general pediatricians, and emergency physicians)
    ______Specialist faculty teaching the physical exam of their specialty (e.g., neurologists teaching the neuro exam)
    ______Specialist faculty teaching the entire physical exam (e.g., neurologists teaching the entire physical exam)
17) **What percent of time do students practice the physical exam in the following ways?**
(should add up to approximately 100%)

- [ ] Students practice on each other
- [ ] Students practice with standardized patients
- [ ] Students practice with actual inpatients patients (NOT standardized patients)
- [ ] Students practice with actual outpatients patients (NOT standardized patients)
- [ ] Students practice with actual patients in the Emergency Department (NOT standardized patients)
- [ ] Students practice using mannequins, simulators, CD-ROMs, virtual patient programs
- [ ] Other

18) **If you selected "other" for the preceding question, please specify what other ways students practice the physical exam.**
________________________________________________________

19) **For each of the formats listed below, indicate whether students are directly observed by an instructor (faculty, senior students, etc.) while they are practicing the physical exam.** *(choose all that apply)*

<table>
<thead>
<tr>
<th>Format</th>
<th>Directly observed by instructor (at least part of the time)</th>
<th>NOT directly observed by instructor</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students practice on each other</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Students practice with standardized patients (SPs)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Students practice with actual inpatients (not SPs)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Students practice with actual outpatients (not SPs)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Students practice using mannequins, simulators, CD-ROMs, virtual patient programs</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
20) **How do students learn the genitourinary examinations?**
(Choose all that apply).
- [ ] Students practice with trained patients (in-house)
- [ ] Students practice with trained patients (outside 3rd party)
- [ ] Students practice with actual patients (NOT standardized patients)
- [ ] Students practice using mannequins, simulators, CD-ROMs, virtual patient programs
- [ ] Other (please specify): ____________________________________

21) **Do you have policies in place for students who feel uncomfortable (for religious or personal reasons) with peer examinations?** (This question pertains to peer examinations of any kind, not only genitourinary examinations).
- ( ) Yes
- ( ) No

22) **If you have policies in place for students who feel uncomfortable with peer examinations, please describe them here:**
___________________________________________________________________________
___________________________________________________________________________

23) **If Standardized Patients independently TEACH (without faculty or other instructors present) the physical exam (aside from the genitourinary exams), please specify the parts of the exam they teach.**
(choose all that apply)
- [ ] Vital Signs
- [ ] HEENT
- [ ] Chest/Lungs
- [ ] Cardiovascular
- [ ] Abdominal
- [ ] Breast
- [ ] Musculoskeletal
- [ ] Neuro
- [ ] Other (please specify): ____________________________________

24) **Which of your instructors are compensated (in money or in protected time) for their teaching?**
(choose all that apply)

<table>
<thead>
<tr>
<th>Instructor Type</th>
<th>Compensated with money</th>
<th>Compensated with protected time</th>
<th>No compensation provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Director(s)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Large group lecturers</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Small group facilitators</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Inpatient clinical preceptors</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Outpatient clinical preceptors</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
25) If senior students act as teaching assistants for physical exam instruction/observation/assessment, are they compensated?* (choose all that apply)
   [ ] Yes our senior students are compensated monetarily
   [ ] Yes our senior students are compensated with course credit
   [ ] No our senior students are not compensated monetarily or with course credit
   [ ] We do not use senior students as teaching assistants in our curriculum

26) In which settings do you TEACH and ASSESS the physical exam? (choose all that apply)

<table>
<thead>
<tr>
<th></th>
<th>Teach PE</th>
<th>Assess PE</th>
</tr>
</thead>
<tbody>
<tr>
<td>At your medical school’s clinical skills center</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>At another medical school’s clinical skills center</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>In classrooms</td>
<td>[ ]</td>
<td></td>
</tr>
<tr>
<td>In clinical settings (inpatient or outpatient, e.g., teaching or assessing the eye exam in the eye clinic)</td>
<td>[ ]</td>
<td></td>
</tr>
</tbody>
</table>

27) Which online multimedia resources are used in your physical exam curriculum?* (choose all that apply)
   [ ] Online learning modules/videos created by your own institution.
   [ ] Online learning modules/videos created by another medical school.
   [ ] Online learning modules/videos created by textbook publishers.
   [ ] Online learning modules/videos posted on YouTube, Vimeo or other similar public websites
   [ ] We do not use online learning modules/videos
   [ ] Other (please specify): ____________________________________

28) From the question immediately above, what are the two (2) most useful multimedia resources you have found?

_________________________________________________________
_________________________________________________________

29) Which of the following resources are used in your physical exam curriculum?* (choose all that apply)
   [ ] Virtual patient programs (e.g., DxR Clinician, i-Human, etc.)
   [ ] Mechanical human simulators (e.g., task trainers, mannequins, etc.)
   [ ] Videos, CD-ROMs, etc.
   [ ] Bedside ultrasonography
   [ ] Our curriculum does not use any of the above resources
   [ ] Other (please specify): ____________________________________
30) **From which of the following textbooks do you assign required readings?** *(choose all that apply)*

- Bates’ Guide to Physical Examination and History-Taking by Lynn Bickley
- DeGowin’s Diagnostic Examination by LeBlond, Brown, and DeGowin
- Sapira’s Art and Science of Bedside Diagnosis by Jane M. Orient
- Seidel’s Guide to Physical Examination (Mosby’s) by Jane W. Ball
- Textbook of Physical Diagnosis: History and Examination by Mark H. Swartz
- No textbook readings are required
- Other (please specify): _____________________________________

31) **Indicate whether the following medical equipment is required, recommended or neither for your physical exam curriculum.**

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Required</th>
<th>Recommended</th>
<th>Neither required nor recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stethoscope</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Sphygmomanometer</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Otoscope/ophthalmoscope</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Otoscope insufflator</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Snellen card</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Reflex hammer</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
<tr>
<td>Tuning fork(s)</td>
<td>( )</td>
<td>( )</td>
<td>( )</td>
</tr>
</tbody>
</table>

32) **How many structured assessments of physical exam skills does your school have in the pre-clerkship years?** *(include assessments of the physical exam only AND comprehensive encounters that include a physical exam)*

- Number of summative assessments (which contribute to final score/grade): _____
- Number of structured formative assessments (which do not contribute to final score/grade): _____

33) **For your formative and summative assessments of the physical exam in the pre-clerkship years, please mark the grid below to indicate: who serves as the patient?**
34) For your formative and summative assessments of the physical exam in the pre-clerkship years, please mark the grid below to indicate: who scores the checklist?

<table>
<thead>
<tr>
<th></th>
<th>Formative</th>
<th>Summative</th>
<th>Not used in assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standardized Patient (SP) who serves as the patient</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Separate SP from the one who serves as the patient</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Senior Student</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Faculty</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

35) For your formative and summative assessments of the physical exam in the pre-clerkship years, please mark the grid below to indicate: when is the initial scoring done?

<table>
<thead>
<tr>
<th></th>
<th>Formative</th>
<th>Summative</th>
<th>Not used in assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>Later by watching a video</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

36) For your summative assessments (including OSCEs, written exams and other assessments) which of the following techniques do you use to set your passing standards? (choose all that apply)

- [ ] Norm-referenced standard (e.g., standard deviation)
- [ ] Angoff and/or Hofstee methods
- [ ] Borderline method
- [ ] Bookmark method
- [ ] Standard set by Course Director
- [ ] Standard set by internal committee
- [ ] I do not know how our standards are set
- [ ] Other (please specify): ____________________________________

37) If checklists are used in your physical exam assessments, who is involved in the creation of the items? (choose all that apply)

- [ ] Course director(s)
- [ ] Course faculty instructors
- [ ] Relevant sub-specialists
- [ ] Accepted list used at my and other institutions
- [ ] Other (please specify): ____________________________________
38) **For your students who fail summative physical exam assessments, what type of remediation program do you use?** (choose all that apply)
   - [] A pre-determined remediation program that is the same for all students who fail
   - [] An individualized remediation program based on the student's needs
   - [] We do not remediate failed physical exam assessments
   - [] Other (please specify): _____________________________________

39) **If you have a remediation program, who works with the students who are remediating?** (choose all that apply)
   - [] Faculty
   - [] Standardized Patients
   - [] Senior students
   - [] Other (please specify): _____________________________________

40) **How do you evaluate your physical exam curriculum?** (choose all that apply)
   - [] Student satisfaction on course evaluations
   - [] AAMC Graduation Questionnaire data
   - [] Students' ability to demonstrate passing performance on institution-based standardized testing (e.g. SP-based assessment, OSCEs, multiple choice questions, etc.)
   - [] Students' ability to demonstrate passing performance on the USMLE Step 2CS examination
   - [] Students' performance of physical examination skills in the clerkships
   - [] Other (please specify): _____________________________________

41) **How many total hours do you spend teaching the physical exam in the pre-clerkship years?**
   ___________________________________________________________

42) **Please list the two (2) most successful aspects of your physical exam curriculum.**
   ___________________________________________________________
   ___________________________________________________________

43) **Please list the two (2) aspects of your physical exam curriculum that present the greatest challenges.**
   ___________________________________________________________
   ___________________________________________________________

44) **Please provide any other comments you have on teaching and assessment of the physical exam in the pre-clerkship curriculum**
   ___________________________________________________________
   ___________________________________________________________

45) **Demographics**
   First name: _______________________________________________
   Last name: _______________________________________________
   Title/position (in relation to clinical skills curriculum): _______ 
   Email address: ___________________________________________
46) **Which years of your school’s physical exam curriculum are you responsible for:** (choose all that apply)
   - [ ] 1st Year
   - [ ] 2nd Year
   - [ ] 3rd Year
   - [ ] 4th Year

47) **How many years have you been in a leadership position teaching and assessing the physical exam?**
   - ( ) 0-2 years
   - ( ) 3-5 years
   - ( ) 6-8 years
   - ( ) 9-11 years
   - ( ) 12-14 years
   - ( ) >15 years

48) **Class size: (number of students per year)**
   - ( ) 1-50
   - ( ) 51-100
   - ( ) 101-150
   - ( ) 151-200
   - ( ) 201-250
   - ( ) 251-300
   - ( ) 300+

49) **Your institution**
   - ( ) Albany Medical College
   - ( ) Albert Einstein College of Medicine of Yeshiva University
   - ( ) Baylor College of Medicine
   - ( ) Boonshoft School of Medicine Wright State University
   - ( ) Boston University School of Medicine
   - ( ) Brody School of Medicine at East Carolina University
   - ( ) Case Western Reserve University School of Medicine
   - ( ) Central Michigan University College of Medicine
   - ( ) Charles E. Schmidt College of Medicine at Florida Atlantic University
   - ( ) Chicago Medical School at Rosalind Franklin University of Medicine and Science
   - ( ) Columbia University College of Physicians and Surgeons
   - ( ) Commonwealth Medical College
   - ( ) Cooper Medical School of Rowan University
   - ( ) Creighton University School of Medicine
   - ( ) David Geffen School of Medicine at UCLA
   - ( ) Drexel University College of Medicine
   - ( ) Duke University School of Medicine
   - ( ) East Tennessee State University James H. Quillen College of Medicine
   - ( ) Eastern Virginia Medical School
   - ( ) Emory University School of Medicine
   - ( ) Feinberg School of Medicine Northwestern University
Supplemental digital content for Uchida T, Achike FI, Blood AD, et al. Resources used to teach the physical exam to preclerkship medical students: Results of a national survey. Acad Med.

( ) Florida International University Herbert Wertheim College of Medicine
( ) Florida State University College of Medicine
( ) Frank H. Netter MD School of Medicine at Quinnipiac University
( ) Geisel School of Medicine at Dartmouth
( ) George Washington University School of Medicine and Health Sciences
( ) Georgetown University School of Medicine
( ) Harvard Medical School
( ) Hofstra North Shore-LIJ School of Medicine at Hofstra University
( ) Howard University College of Medicine
( ) Icahn School of Medicine at Mount Sinai
( ) Indiana University School of Medicine
( ) John A. Burns School of Medicine University of Hawaii at Manoa
( ) Johns Hopkins University School of Medicine
( ) Keck School of Medicine of the University of Southern California
( ) Loma Linda University School of Medicine
( ) Louisiana State University School of Medicine in New Orleans
( ) Louisiana State University School of Medicine in Shreveport
( ) Marshall University Joan C. Edwards School of Medicine
( ) Mayo Medical School
( ) Medical College of Georgia at Georgia Regents University
( ) Medical College of Wisconsin
( ) Medical University of South Carolina College of Medicine
( ) Meharry Medical College School of Medicine
( ) Mercer University School of Medicine
( ) Michigan State University College of Human Medicine
( ) Morehouse School of Medicine
( ) New York Medical College
( ) New York University School of Medicine
( ) Northeast Ohio Medical University College of Medicine
( ) Oakland University William Beaumont School of Medicine
( ) Ohio State University College of Medicine
( ) Oregon Health & Science University School of Medicine
( ) Paul L. Foster School of Medicine Texas Tech University of Health Sciences Center
( ) Pennsylvania State University College of Medicine
( ) Ponce School of Medicine and Health Sciences
( ) Raymond and Ruth Perelman School of Medicine at the University of Pennsylvania
( ) Rush Medical College of Rush University Medical Center
( ) Rutgers New Jersey Medical School
( ) Rutgers, Robert Wood Johnson Medical School
( ) Saint Louis University School of Medicine
( ) San Juan Bautista School of Medicine
( ) Sidney Kimmel Medical College at Thomas Jefferson University
( ) Southern Illinois University School of Medicine
( ) Stanford University School of Medicine
( ) State University of New York Upstate Medical University College of Medicine
( ) State University of New York, Downstate Medical Center, College of Medicine
( ) Stony Brook University School of Medicine
( ) University of South Carolina School of Medicine, Columbia
( ) University of South Carolina School of Medicine, Greenville
( ) University of South Dakota Sanford School of Medicine
( ) University of Tennessee Health Science Center College of Medicine
( ) University of Texas Medical Branch at Galveston
( ) University of Texas Medical School at Houston
( ) University of Texas School of Medicine at San Antonio
( ) University of Texas Southwestern Medical Center at Dallas, Southwestern Medical School
( ) University of Toledo College of Medicine
( ) University of Utah School of Medicine
( ) University of Vermont College of Medicine
( ) University of Virginia School of Medicine
( ) University of Washington School of Medicine
( ) University of Wisconsin School of Medicine and Public Health
( ) USF Health Morsani College of Medicine
( ) Vanderbilt University School of Medicine
( ) Virginia Commonwealth University School of Medicine
( ) Virginia Tech Carilion School of Medicine
( ) Wake Forest School of Medicine of Wake Forest Baptist Medical Center
( ) Warren Alpert Medical School of Brown University
( ) Washington University in St. Louis School of Medicine
( ) Wayne State University School of Medicine
( ) Weill Cornell Medical College of Cornell University
( ) West Virginia University School of Medicine
( ) Western Michigan University School of Medicine
( ) Yale University School of Medicine

Thank you!

*Items analyzed in current study