Simulation-based Assessment to Ensure that Medical School Graduates can Demonstrate Fundamental Clinical Skills

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NBOME — National Board of Osteopathic Medical Examiners

Introduction

The Core Competency Capstone for Doctors of Osteopathic Medicine(C3DO) was developed in response to the recommendation of the Special Commission on Osteopathic Medical Licensure Assessment to create a "college of osteopathic medicine-based national standardized assessment which includes an in-person, hands-on evaluation of fundamental osteopathic clinical skills including interpersonal and communication skills and OMT, with quality assurance."[1-2] The NBOME Board of Directors provided resources given the importance of these skills in osteopathic medical education and patient care.[3-4]

Phase 1:

1. Feasibility: Can colleges of osteopathic medicine (COMs) administer a centrally developed examination? What is the experience like for them?
2. Standardization: Is the examination standardized across COMs?

Phase 2:

1. Psychometrics: Reliability, Validity
2. Scoring Models: Component aggregation

Methods and Materials

The NBOME worked with COMs to develop and administer a standardized assessment. Participants used a combination of online training materials (fixed amongst schools) and live training (unique to each school).

For each of the 4-8 cases administered, the candidates were evaluated on the following skills:

- Osteopathic history and physical examination - documented by standardized patients (SPs) using a case-specific checklist developed by osteopathic physicians
- Osteopathic Manipulative Treatment (OMT) - scored by a distributed physician examiner pool using a rubric developed by osteopathic physicians
- Communication and interpersonal skills - appraised by SPs using the NBOME developed Communication and Respectfulness Evaluation (CARE) rubric
- Clinical decision-making - candidates had to answer 2 questions (Phase 1) to 4 questions (Phase 2) about the case following each encounter

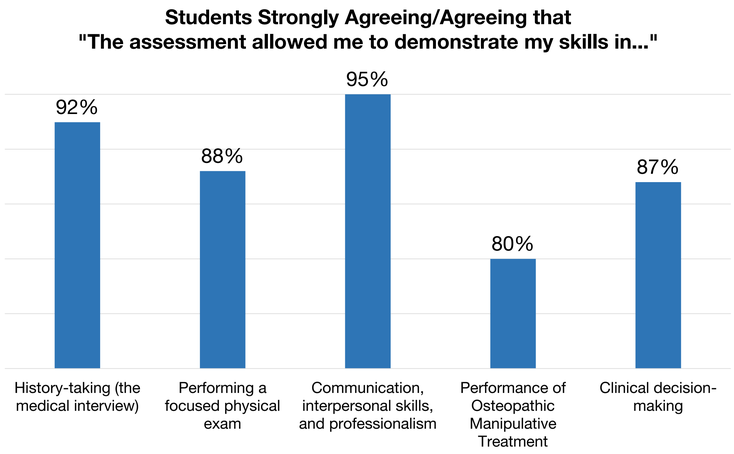

Table 1. Student feedback

Results

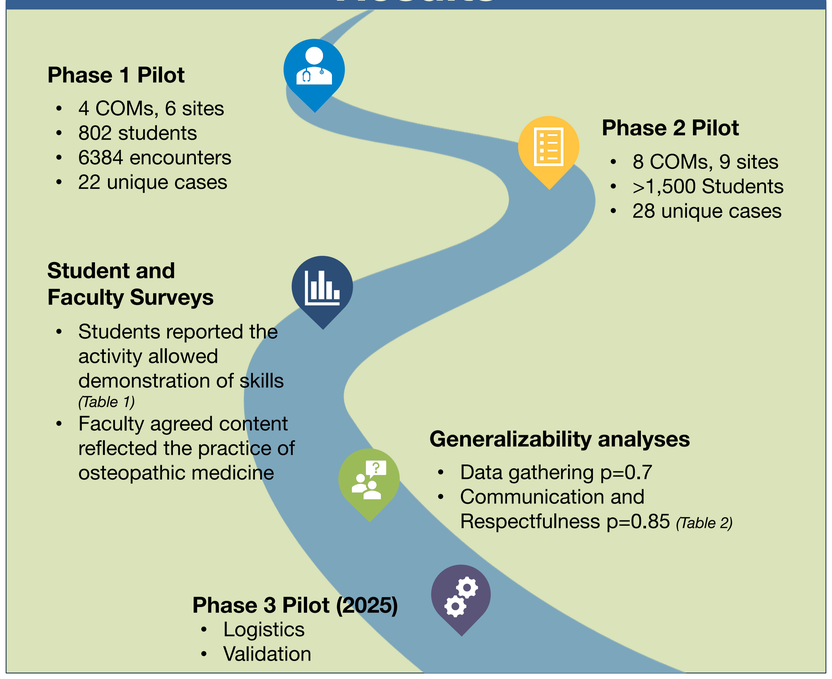

Figure 1. C3DO at a college of osteopathic medicine

Figure 2. Student with standardized patient

Feedback

STUDENTS

The incorporation of OMT makes the experience more realistic

After going through 2 years of clinical rotations, this was an opportunity to demonstrate what I have learned. I felt like my training as a medical student trained me well and this was my chance to show it.

Very smooth experience, great cases with diversity, and excellent diversity in SP selections and chief complaints

COM FACULTY

Thank you so much! This has been an amazing experience. Your team has been wonderful to work with throughout this Pilot. We truly believe in the importance of this work and look forward to all that we learn. We look forward to feedback and improving our process. It is a great time to be a DO!

Discussion

Phases 1 and 2 revealed minor limitations in the administration, most of which were adaptable.

Overall, surveys of staff, faculty, and students were positive, reflected the value of the activity, and provided additional suggestions to improve processes. Students, for the most part, gained value from participation in the activity; **Phase 3** will focus more on giving value to any feedback provided.

Measures of training of SPs and proctors allowed for an understanding of the goals of the pilots and how SP portrayal and scoring would be standardized across all schools. Our data show that shared understanding is achievable in training, and the results in the CARE scoring show it is achievable in scoring as well. There were some differences in the case checklist scoring, which may be explained by the case detail (too detailed/complex) or more distributed training.

OMT scoring is limited by the number of encounters but had similar results to the COMLEX-USA Level 2-PE. Members of advisory panels and external stakeholders value the objective evaluation of these skills. The post-encounter clinical decision-making exercises are limited by their number (only 32 items per student). Additional quality assurance and key validation is being performed on existing items, and additional cases/items will be available for **Phase 3**.

Conclusions

Phase 1 and 2 of the C3DO demonstrated the feasibility of administering a standardized osteopathic clinical skills examination at COMs. Positive student experience and reliability of communication scores were particularly successful. The distributed model can work.

Additional quality assurance steps (Phase 3) are needed to ensure standardization within and between sites is adequate.

C3DO Component	Number of Cases		
	6	8	3
Data Gathering (History Building + Physical Examination) DG	.63	.70 (.70)	
Communication and Respectfulness Evaluation (CARE)	.83	.87 (.83)	
Clinical Decision Making (CDM)	.25	.31 (0.15)	
Osteopathic Manipulative Treatment (OMT)			.17 (0.26)

() Phase 1

Table 2. Generalizability of Component Scores (Phase 2)

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2. Report of the Special Commission on Osteopathic Medical Licensure Assessment. June 2022. https://www.nbome.org/special-commission-on-osteopathic-medical-licensure-assessment/. Accessed April 2, 2024.
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4. Chi J Hosamani P Verghese A Elder A. "Don't Clinical Skills Matter? We need a new Step 2 Exam Now!" Medscape March 04, 2021.