

## The Demise of the Physical Exam: Lessons from the University of Colorado Medical School Task Force on Physical Examination

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**P**hysical diagnosis training once heralded an exciting transition for medical students as the focus of their education shifted from didactic learning to clinical application. In recent years, however, the importance of the traditional physical exam has come under scrutiny. Skill in the performance of the physical exam has declined among graduating medical students. As a result, fewer and fewer graduating medical students feel comfortable with this skill set nationally.<sup>1,2</sup>

In response to growing concern over loss of proficiency in performance of the physical exam, an interest group was recently convened by the Association of American Medical Colleges. The objective of this group was to redefine the purpose and scope of the physical exam. Concerns to be addressed include:<sup>3</sup>

- Lack of evidence in support of regular comprehensive physical examinations in healthy adults and the resultant decrease in frequency with which the comprehensive physical exam is performed;<sup>4</sup>
- Increased use of diagnostic imaging, including handheld ultrasonography, to replace physical exam components;
- Decreased visit times in private practice and academic settings and the desire for increased efficiency in the clinical encounter;
- Questions regarding examination maneuvers including their sensitivity, specificity, predictive

value, and reproducibility;

- Gradual decline in dexterity and a loss of “muscle memory,” as physicians perform fewer head-to-toe physicals in the general drift toward a selective hypothesis-testing physical; and
- Reduced interest in learning and teaching physical examination skills as experienced clinicians move on to administrative or other roles or retire and are replaced by a new generation of tech-savvy clinicians with a greater propensity for imaging and laboratory testing.

These pressures are formidable; however, a resurgence of interest in updating and reanimating the physical exam has also arisen, originating from the need to reduce costs and protect patients from the dangers of unnecessary testing. In addition, the emotional contribution of the physical exam to building trust in patients is still considered important. In fact, many national specialty groups and the “Choosing Wisely” movement still place the physical exam at the center of their decision-making algorithms.

The University of Colorado School of Medicine recently convened a task force to evaluate and rectify student performance on physical examination tasks. The group consisted of clinical faculty with expertise in medical student teaching focused on the physical exam, an outside academic clinician, and two fourth-year medical students. This task force met over six weeks and issued a unanimous report.

After reviewing both national experience and local performance, the task force concluded that the school had not invested sufficiently or optimally in teaching physical examination. Students perceived themselves to be poorly prepared, and clerkship directors concurred. The school had achieved only mediocre results on objective assessments of competence, there was little integration of exam skills into the rest of the curriculum, and the school was not actively performing research in the field.

Perhaps most importantly, the medical school had not inspired its senior clinical faculty to value and pass along skills in physical diagnosis. Those best qualified to teach physical exam had delegated the responsibility to standardized patients and hastily recruited volunteers—frequently fellows and junior faculty. Standardized physical examination teaching associates (SPETAs) have been the primary teachers of our students since 2006.

How did we arrive at the current state of affairs? Upon review of the evolution of our physical diagnosis (PD) curriculum, we found that well-intentioned incremental changes have led to our current state. In 2005, the national accrediting agency strongly recommended a shift away from department-based to a centralized curricular oversight and management system, resulting in some disengagement of our faculty on educational issues. At about the same time, a flawed study found no difference in student out-

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**Table 1. Major Themes of a Task Force Proposal for Reanimating Instruction in Physical Examination at the University of Colorado School of Medicine**

1. Employing respected physician role models to teach physical examination as master clinician-educators (MCEs);
2. Integrating physical examination with the fundamental types of medical knowledge (traditional and evolving): anatomy, physiology, imaging, and pathology;
3. Relating physical examination consistently to clinical problem solving by placing MCEs in charge of problem-based learning;
4. Teaching the cost benefit and trial evidence for physical examination maneuvers;
5. Creating, under the auspices of the chairs of each department, an institution-specific core head-to-toe and organ-system physical examination;
6. Practicing a relatively large number of exams under supervision to promote accuracy, speed, and muscle memory in performing three types of physical exam: core head-to-toe, organ system specific, and hypothesis directed;
7. Including physical examination as an academic requirement of all four years;
8. Establishing physical examination among the research priorities of the school; and
9. Recognizing that a demonstrably successful path to excellence in the performance of physical examination would be of national significance.

comes in PD proficiency when clinical faculty were replaced by less costly SPETA instructors. Replacement of clinical faculty members with SPETA instructors was therefore considered a viable and cost-effective alternative.<sup>5</sup>

Our task force determined that any future revisions to PD curricula needed to address the problem at the root cause by creating a cultural shift at our medical school. The task force emphasized the value of exposing students to role models who practice and teach the expert physical exam. Rather than advocating a return to older ways, the task force urged a restructuring of the curriculum with the physical examination at the heart of its new high-value approach to medicine.

Core recommendations of the task force include: 1) a coordinated four-year effort taught by a cadre of 20%-time experienced clinicians from across the medical specialties; 2) recruitment of master clinician-educators (MCE) teaching three approaches to physical exam: a core head-to-toe examination that the chairs of each clinical department would help to define, organ-specific maneuvers similarly identified, and a differential-diagnosis-directed physical examination; 3) assignment of

each MCE to the same group of students throughout all four years; and 4) the recruitment of approximately 20 fourth-year students to serve as PD coaches and mentors for second- and third-year colleagues. (These students, designated “Osler Scholars,” would be chosen after their third year by their MCEs.)

The PD curriculum will be led by a physician champion whose research and ongoing project focus is on the study of the PD curriculum. This leader will also carry the responsibility of disseminating a set of structured institution-specific guidelines for physical examination to clinician-educators throughout the institution. Before implementing such recommendations in a medical school of nearly 800 students, the task force will assess the effectiveness of the curriculum—including cost-effectiveness—by applying the curriculum to a smaller preliminary cohort in the incoming medical student class. We hope that by showing success in this small cohort, we may justify the expense of this program for the entire medical school class in the future. It is also hoped that our graduating doctors of tomorrow will use the experience of their role models and mentors to gain comfort and familiarity with the

physical examination in the diagnostic medical encounter.

Major themes of the task force report are shown in Table 1.

**References**

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