

Cohort Data Suggest Patterns of Student Errors in Performing Focused Physical Exams

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Rationale: Previous cross-sectional standardized patient (SP) studies suggest that students are better at knowing how than knowing when to perform Specific physical exam maneuvers. A comparison of cohorts' rates of successful performance of the same maneuvers on comprehensive physicals in Year 1-2 and on focused visits in year 4 may help us to understand development of physical examination skills.

Methods: Cohort 1 (n=81) was scored on a comprehensive physical for clinical skills assessment (CSA) at the end of first year and a focused Dyspnea/chest tightness on exertion case at the beginning of fourth year. Cohort 2 (n=96) was scored on the same comprehensive physical during a Second year CSA and a focused dyspnea/chest tightness on exertion case and a focused chest pain/pulmonary embolus case for fourth year CSA. Items were rated Satisfactory, Unsatisfactory or Not Done by an SP trained to evaluate the checklist (inter-rater agreement>90%). Data are presented as % students satisfactory performing each item in year 1 and at a minimum attempting the item in year 4. In addition, reasoning was probed immediately following each fourth year SP encounter with a 5 minute pen and paper exercise asking students to list their top 3 differential diagnoses and history and physical findings supporting or refuting each.

Results/Discussion:

Table: % Performing Selected Physical Exam Maneuvers

Maneuver	Cohort 1 (n=81)		Cohort 1 (n=96)	
	Yr 1	Yr 4	Yr 2	Yr4
Radial pulse	98	92	78	74
Blood pressure 1 arm	99	95	85	82
Auscultate heart: 4 areas	95	95	97	94
Auscultate lungs posterior	98	100	96	99
Percuss lungs	77	71	92	77
Inspect legs for swelling	--	--	--	32
Palpate legs for corde	--	--	--	32
Palpate chest for tenderness	--	--	--	34
Palpate PMI	85	100	91	48
Auscultate heart, left lateral decubitus	--	33	--	53
Check legs for edema	100	75	92	60

Students know how to perform the maneuvers on the comprehensive physical exam in year 1-2 as evidenced by performing well on all items (>75%). In year 4, they perform well on general maneuvers taught in the structured physical exam skills curriculum in the first 2 years such as auscultation of heart and lungs (>75%). Students perform significantly less well on additional maneuvers that help to rule in or rule out specific diagnoses (<40% check legs for swelling, palpate cords, or palpate chest wall tenderness, palpate PMI, auscultate heart left lateral decubitus position, and 63% check legs for edema). We conclude that errors in focused visits by fourth year students may be traced to omission of maneuvers that help to rule in/out specific diagnoses. These data suggest that teaching and learning may be improved by more structured curricula to emphasize the pertinence of additional maneuvers in ruling in and ruling out specific diagnoses.

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