Self-Paced Sinusitis Learning Module for Medical Students: Improving Otolaryngology Knowledge Across All Future Specialties

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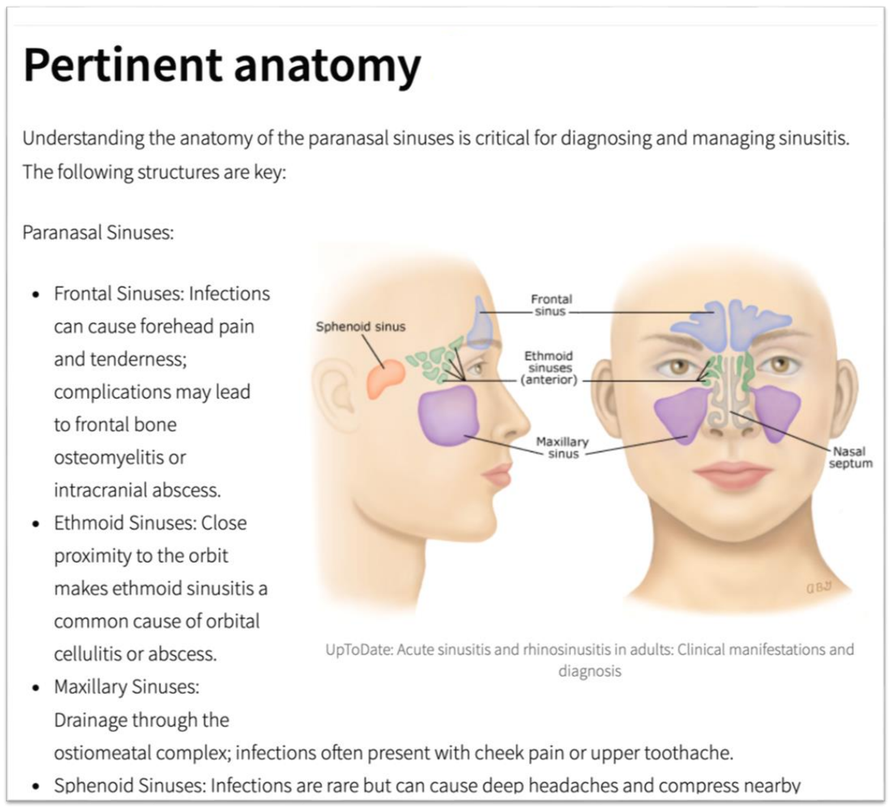
Background: 25% of adult and 50% of pediatric primary care visits are ENT-related, but most medical schools lack an ENT curriculum, contributing to future primary care physician unfamiliarity with basic ENT clinical practice guidelines.[1-4]

Aim: Assess and enhance medical students' exposure through an online learning module to a common ENT complaint (sinusitis)

Methods

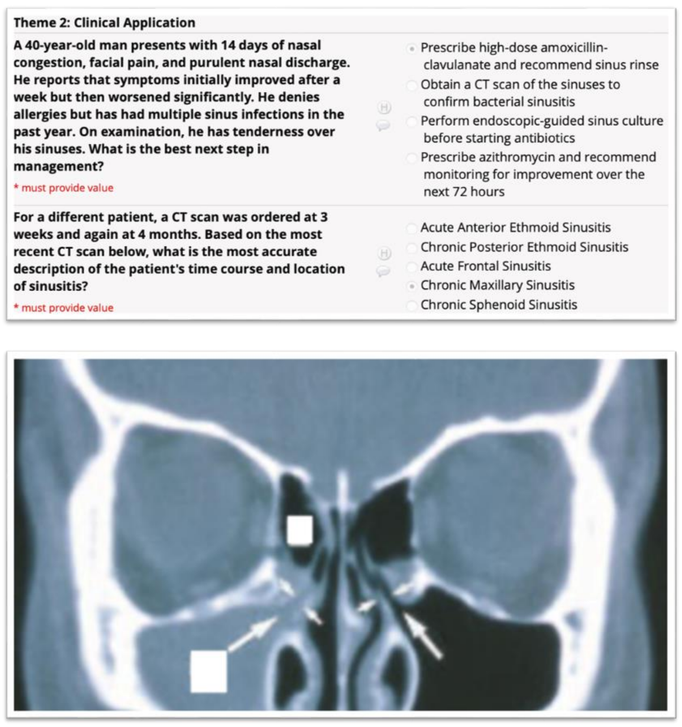
Development of Learning Module

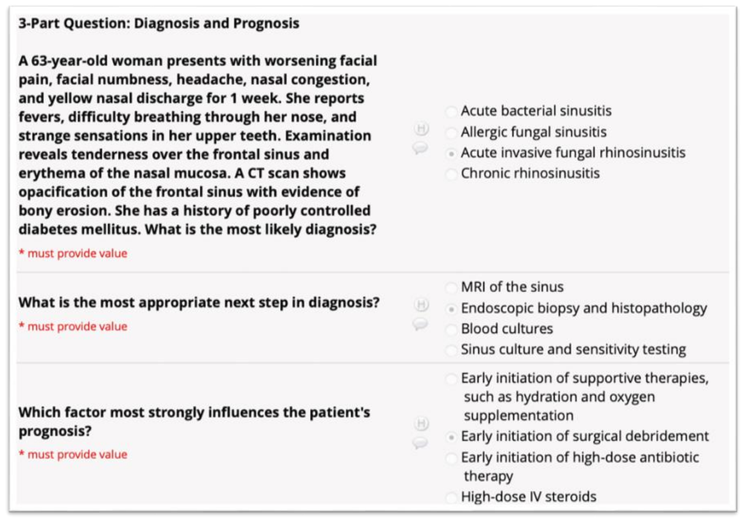
1. Self-paced online sinusitis module to 29 medical students
2. Learning objectives: relevant anatomy, differential diagnosis, workup, warning signs, when to refer, prognosis, treatment



Pre- and Post-Module Assessments

2. Demographics: year of study, specialty of interest, ENT exposure, clerkships/USMLE exams
3. Assessment: 10 multiple-choice questions incorporating pathophysiology and clinical scenarios administered before and after completing the module.
4. Pre- and post-intervention scores were compared using a paired t-test.





Results

Baseline Demographics

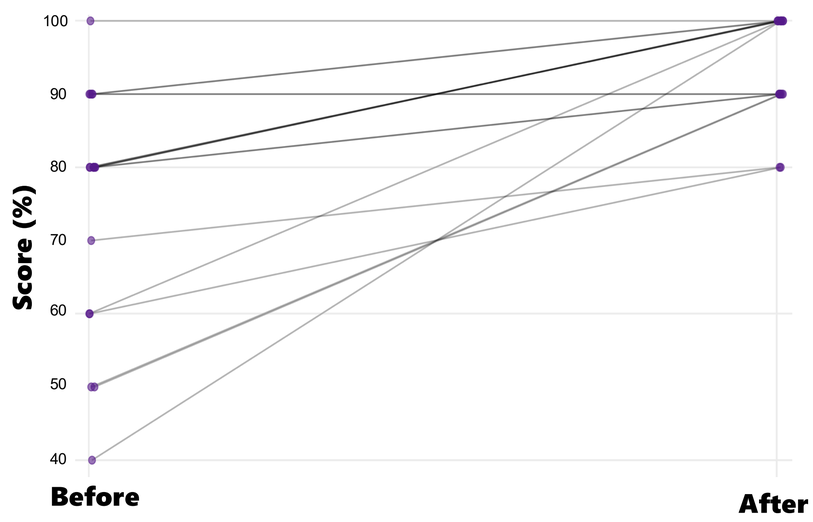
Pre- and Post-Module Assessments

Table 1. Respondent Characteristics and Assessment Performance

Variable	N (%)
Year in Medical School	
MS1	2 (6.9%)
MS2	4 (13.8%)
MS3	14 (48.3%)
MS4	5 (17.2%)
Dual degree (PhD, MBA, MPH)	3 (10.3%)
Current Specialty of Interest	
Internal Medicine	3 (10.3%)
Emergency Medicine	2 (6.9%)
General Surgery	2 (6.9%)
OBGYN	2 (6.9%)
Otolaryngology	8 (27.6%)
Other Surgical Subspecialty	6 (20.7%)
Radiology	3 (10.3%)
Psychiatry	2 (6.9%)
Undecided	1 (3.4%)
Board Exams Taken	
USMLE Step 1	20 (69.0%)
USMLE Step 2	20 (69.0%)
None	6 (20.7%)

Variable	N (%)
ENT Exposure	
2-week ENT Elective	10 (34.5%)
4-week ENT Elective	5 (17.2%)
Clinical Shadowing	7 (24.1%)
Operating Room shadowing	10 (34.5%)
ENT interest group member	12 (41.4%)
None	11 (37.9%)
Other	6 (20.7%)
Completed Clinical Clerkships	
Internal Medicine	25 (86.2%)
OBGYN	24 (82.8%)
Pediatrics	24 (82.8%)
Surgery	24 (82.8%)
Neurology	26 (89.7%)
Psychiatry	22 (75.9%)
None	23 (79.3%)
	2 (6.9%)
Module	
Median [IQR] duration (minutes)	8 [5.0-10.0]
Median [IQR] pre-intervention score	80% [60-90%]
Median [IQR] post-intervention score	90% [90-100%]
Median [IQR] score change	+10% [+10-20%], p<.001

Figure 1. Pre- and Post-Intervention Scores



Conclusion: Despite students completing most core clerkships and ≥1 USMLE exams, baseline sinusitis understanding could be improved. A brief educational adjunct increased sinusitis knowledge for students interested in various specialties without imposing a substantial time burden on educators or students.

References
1. Hu A, Sardesai MG, Meyer TK. A need for otolaryngology education among primary care providers. Med Educ Online. 2012;17:17350. doi: 10.3402/meo.v17i0.17350. Epub 2012 Jun 27. PMID: 22754276; PMCID: PMC3386554.
2. Ishman SL, Stewart CM, Senser E, Stewart RW, Stanley J, Stierer KD, Benke JR, Kern DE. Qualitative synthesis and systematic review of otolaryngology in undergraduate medical education. Laryngoscope. 2015 Dec;125(12):2695-708. doi: 10.1002/lary.25350. Epub 2015 May 6. PMID: 25945425.
3. Michel MC, Thal A, Sparks AD, Zapanta PE. Using Computer-Assisted Instruction to Increase Otolaryngology Education During Medical School. MedEdPORTAL. 2021 Jan 15;17:11065. doi: 10.15766/mep_2374-8265.11065. PMID: 33473376; PMCID: PMC7809942.
4. Glicksman JT, Brandt MG, Parr J, Fung K. Needs assessment of undergraduate education in otolaryngology among family medicine residents. J Otolaryngol Head Neck Surg. 2008 Oct;37(5):668-75. PMID: 19128674.

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