Teaching Prevention and Screening: Applying Evidence-Informed Educational Strategies

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Background

- Preventative health and screening are fundamental aspects of medical practice yet are complex and challenging to teach learners and clinicians.
- There is a disconnect between how screening is taught to learners, how screening competency is assessed, and how it is applied to the clinical setting[1].
- The Federation of Medical Education in Canada (FMEC) has highlighted a shift towards developing education resources with an emphasis on improving patient outcomes[2].
- There is a need for the application of evidence-informed educational strategies in screening education to optimize learning and clinical translation.

Research Questions and Objective

1) What are the best ways for medical learners and practitioners to learn prevention and screening practices?

2) Which educational strategies would best reinforce the learning of prevention and screening practices?

Our objective is to create a book chapter which integrates evidence-informed educational strategies to address the challenges in learning preventive health and screening principles.

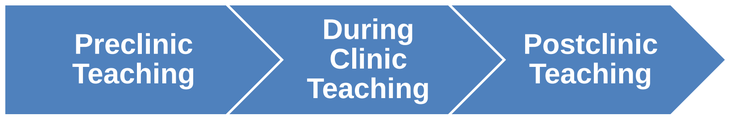

Figure 1: A simple framework for when to teach screening

Methodology

A literature review and key informant discussions with members of the Canadian Task Force on Preventative Health Care. Information gathered will be integrated into the educational resource which includes screening strategies, approaches, cases, and quizzes to be piloted and reviewed.

Results

Using a precision education framework[3], preliminary educational strategies identified include: Adaptive Expertise, Test Enhanced Learning, and Commitment to Change.

Adaptive Expertise

- Combining mastery of core competencies with the ability to innovate and adapt to novel settings/scenarios, enabling quick proficiency in addressing unique patient nuances.
- Cognitive Apprenticeships are a method that facilitates adaptive expertise by having teachers actively voice thought processes during clinical practice to give learners rationales for decision-making.

Test Enhanced Learning

- Utilizes repeated testing on learned material through active recall (quizzes, flashcards, etc.) to improve knowledge retention[4].
- Important factors to improve long-term retention include spaced repetition, interleaving (mixing different topics/subjects), question format (open-ended > MCQ), and feedback content (clinical reasoning).

Commitment to Change

- Learners make specific pledges/commitments to changes in their behaviours or approaches to translate educational material into clinical practice.
- Important factors to successful implementation include sufficient elapsed time, adequate clinical autonomy to make behaviour changes, and the amount of opportunities to apply changes to practice.

Discussion and Future Directions

- The development of this resource will assist learners, teachers, and clinicians in improving screening knowledge and competency gaps.
- Addressing educational gaps which translate to practice may help prevent wasted healthcare resources, unnecessary and potentially harmful screening, and poor patient outcomes.
- The next steps of this project are to finalize the chapter content, pilot and revise the chapter, and compile it with the other chapters for publication and dissemination.
- The resource may be used to develop a spiral-integrated curriculum to improve screening learning outcomes and/or within the healthcare setting to guide clinical teaching.

References:

1. Grad, R., Antao, V., Bell, N. R., Dickinson, J. A., Rezkallah, R., Singh, H., Szafran, O., Waugh, E., & Thériault, G. (2022). What should educators teach to improve preventive health care? *Canadian Family Physician*, *68*(8), 583–588. https://doi.org/10.46747/cfp.6808583
2. Campbell, C., & Sisler, J. (2019). Supporting learning and continuous practice improvement for physicians in Canada: a new way forward. *Summary report of the future of medical education in Canada (FMEC) CPD project*.
3. Triola, M. M., & Burk-Rafel, J. (2023). Precision Medical Education. *Academic Medicine*, *98*(7), 775–781. https://doi.org/10.1097/acm.0000000000005227
4. Roediger, H. L., & Karpicke, J. D. (2006). Test-enhanced learning. *Psychological Science*, *17*(3), 249–255. https://doi.org/10.1111/j.1467-9280.2006.01693.x

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