

Commentary

Resource stewardship in Canadian undergraduate medical education

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Abstract

New research suggests Canadian physicians order more than 1,000,000 potentially unnecessary tests and treatments each year. Strategies to educate medical students about the CanMEDs Resource Stewardship directive and judicious testing practices can help the healthcare system manage fiscal stress and improve healthcare experiences for patients. This article outlines several strategies that can be implemented at the undergraduate medical education level through Choosing Wisely Canada's Students and Trainees Advocating for Resource Stewardship (STARS) program. The educational strategies feature group-based learning, lecture integration, and supportive online modules. Educating medical students across the country about judicious testing can produce the generation of resource-conscious doctors that healthcare's increasingly tight budget demands.

Keywords: Healthcare quality improvement; patient safety; unnecessary procedures; Choosing Wisely

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Introduction

There is a need for programs of resource stewardship to be implemented in medical education in order to improve the way healthcare is delivered in Canada. This article outlines methods of delivering resource stewardship education to medical students at the undergraduate level, specifically through Canada's Choosing Wisely program. Resource stewardship in medicine is defined as clinical practice that employs the most efficient options to care for a patient. It is medicine that focuses efforts toward necessary care and limits unnecessary care, thereby minimizing patient morbidity while making the most of limited resources.

New data suggests that unnecessary medical tests, procedures, and treatments are driving factors in the increased cost of health care in Canada.¹ The Canadian Institute for Health Information recently reported the use of more than 1,000,000 potentially unnecessary tests and treatments in Canada each year.² The problem of overuse is not confined to Canadian borders; rates of inappropriate antibiotic use are reaching 57% in China, and inappropriate hysterectomy rates in the United States (US) range from 16% to 70%.³

As part of the effort to address unnecessary interventions, Dr. Andrew Burke founded a program at McMaster University designed to teach students about resource stewardship: the Stewardship Curriculum and Audit for Residents to Cultivate Efficiency, or SCARCE program. SCARCE gave internal medicine residents feedback on their ordered tests and showed that 60% of these tests had little to no clinical utility.⁴ Such testing can be costly; the National Academy of Medicine in the US (previously known as the Institute of Medicine) estimates that roughly \$210 billion of the \$750 billion spent on American healthcare in 2012 was put towards inappropriate care.⁵ Unnecessary and inappropriate care can also cause physical and psychological harm to patients with limited benefit; this is particularly true in settings where palliative approaches are underutilized.^{6,7} For example, unnecessary imaging may identify unrelated abnormalities, or 'incidentalomas', which can precipitate further unnecessary and often invasive investigations, and increase patient anxiety.³ Particularly in end-of-life settings, it is not uncommon for patients to be subjected to admissions and treatments that afford little benefit.⁸ Although Canadians do not have access to detailed healthcare spending data, as compared to US data, existing research establishes clear patterns of unnecessary medical treatments and procedures.⁹⁻¹¹

This growing body of literature points to the need to improve stewardship of health care resources by changing clinical practice. Research suggests that interventions to improve resource stewardship during training have a lasting effect in practice.¹² Medical education and training afford unique opportunities to impress upon future physicians the burden of unnecessary treatment on the health care system, and the potential to improve patient care through better resource stewardship. The updated CanMEDS 2015 physician competency framework reflected the rising importance of this issue by adding "Resource Stewardship" to the Leader competency.¹³ Resource Stewardship in medical education is one focus of the Choosing Wisely Canada (CWC) campaign, which has initiated programs to raise awareness about the harms of unnecessary care.¹⁴

The CWC ultimately seeks to facilitate patient-physician conversations about unnecessary care. It enlists national medical specialty societies to develop recommendations of ‘Things Clinicians and Patients Should Question’.¹⁵ Several professional societies from a wide range of specialties, such as Anaesthesia, Emergency Medicine, and General Surgery have all contributed recommendations relevant to their field. They identify tests and treatments that are commonly used but are not supported by evidence and pose potential harms.¹⁶ By publicizing these lists, CWC promotes discourse and supports clinical staff and patients alike in having resource-conscious care discussions.

Outside of the clinic, CWC educates experts, learners, and the general population through multimedia resources and live conferences to raise awareness about the harms of unnecessary care. With medical students, CWC aims to foster local student leadership in support of the campaign through the Students and Trainees Advocating for Resource Stewardship (STARS) program.¹⁷ The STARS program engages passionate medical student leaders across the country and equips them with the tools to increase awareness and advocate for more curricular content on resource stewardship at their schools. Since the program’s inception in November 2015, initiatives led by STARS students have reached over 2000 Canadian medical students.¹⁸ Below are strategies which medical student leaders can implement through STARS at Canada’s 17 medical schools.

Group based learning

Many Canadian medical school curricula include formal small group learning sessions between a few students and a subject expert. The small-group sessions usually pair case studies to a teaching block’s lecture learning, giving medical students a chance to consolidate new knowledge through patient histories, symptom assessments, diagnostic approaches, and therapies. Resource stewardship principles can be incorporated into the diagnostic approach and therapy arms of the case studies.¹⁹ Students should be encouraged to consider resource stewardship of tests, treatments, and procedures for each case study. This will enrich their understanding of the practical applications and scenarios associated with unnecessary care in the clinical setting.

Lecture integration

Resource stewardship should also feature in lectures, where students are often being exposed to diagnostic pathways and therapies for the first time. Increasing novel imaging modalities in medicine have simplified the visualization of disease. For example, when learning about valvulopathies during a cardiology block, the use of Doppler echocardiography provides an excellent visual aid to observe shifting blood flow and the movement of a diseased valve. However, when students are always shown an echocardiography image in lecture, they may start to assume that every cardiac issue must be accompanied by an echocardiogram. This bias can

hinder a student's ability to think creatively about the cases they see in small group or clinic and can teach technology dependence. Including CWC recommendations into lectures can promote critical thinking and serve as a reminder that not all cases merit certain diagnostics. Introduction of resource stewardship material in pre-clerkship education through lecture integration can bolster student confidence in creating management plans that exhibit resource stewardship.²⁰

Online modules

The CWC offers online resource stewardship learning modules to all Canadian medical students. To encourage engagement with the modules, Canadian medical schools can offer their students certificates for completing the modules, which would serve to demonstrate student competency on the topic of resource stewardship. The modules serve as independent learning resources but can also be structured around pre-existing curricula to teach medical students about resource stewardship, such as the Open School course on quality, value, and cost in health care offered by the Institute of Health Care Improvement.²¹ Stewardship modules can also be handpicked to align with a given medical school's values and learning goals. Module teaching for improving resource stewardship has been shown to be effective; an initiative implemented to teach stewardship in rheumatology was successful in teaching total costs and time associated with trainees' diagnostic choices. Such modules were shown to be positively received and served as an effective tool in teaching resource stewardship in the approach to rheumatology patients.²²

Extra-curricular advocacy

Students can carry their advocacy for resource stewardship beyond the classroom and into extra-curricular initiatives. Several students have already taken up extra-curricular advocacy regarding CWC principles through on-campus speaker series, conferences, and awareness weeks to educate curriculum committees and medical students.²³ In addition to organizing on-campus events, CWC students can and have published articles in school journals regarding the importance of resource-conscious patient care to promote awareness among readers.²⁴

Conclusion

Physicians are the main responsible body for decisions regarding healthcare resource use, as they fill the role of healthcare provision managers. As such, physician decision-making has been estimated to drive nearly 80% of all health care costs.¹ We are uniquely positioned to minimize waste in health care and to maximize the value of limited health resources by engaging in conversations about resource stewardship in the clinic and the classroom. The CWC's speciality-specific lists of "Things Clinicians and Patients Should Question" empowers patients and health care providers alike to improve health care. Additionally, incorporating CWC

materials into lectures, small group learning environments, online modules, and other extra-curricular modalities empowers medical students to practice wisely in the future.

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