

## Six Things Medical Students and Trainees Should Question

### **1 Don't suggest ordering the most invasive test or treatment before considering other less invasive options.**

There are often diagnostic approaches and treatment options that result in the same clinical outcome but are less invasive. Examples include the use of ultrasound instead of computed tomography (CT) scanning to diagnose acute appendicitis in children, or the use of an oral antibiotic that has similar oral bioavailability as its intravenous counterpart. Taking time to consider the diagnostic sensitivity and specificity of less invasive tests or the therapeutic effectiveness of less invasive treatments can minimize unnecessary patient exposure to harmful side effects of more invasive tests or treatments.

### **2 Don't suggest a test, treatment, or procedure that will not change the patient's clinical course.**

When ordering tests, it is important to always consider the diagnostic characteristics such as sensitivity, specificity and predictive value in light of the patient's pre-test probability. Patients who are at very low baseline risk often do not require an additional test to rule out the diagnosis. Furthermore, evidence suggests that in such low-risk patients, diagnostic tests do not reassure patients, decrease their anxiety, or resolve their symptoms. Examples include the use of computed tomography (CT) scanning in low-risk patients to rule out pulmonary embolism, or pre-operative cardiac testing for patients prior to low risk surgery. Evaluation of baseline risk and the use of decision tools wherever possible, along with a 'how will this change my management' approach, can help to avoid unnecessary 'rule out' testing in patients.

### **3 Don't miss the opportunity to initiate conversations with patients about whether a test, treatment or procedure is necessary.**

Patient requests sometimes drive overuse. For example, a parent might request antibiotics for his or her child who likely has viral sinusitis, or a patient might request magnetic resonance imaging (MRI) for low-back pain. Often patients are unaware of the benefits, side-effects and risks of tests and treatments. Taking time to explore a patient's concerns, and counseling them about the relative benefits and risks of tests or treatments represents a patient-centered approach to ensuring the appropriate use of resources.

### **4 Don't hesitate to ask for clarification on tests, treatments, or procedures that you believe are unnecessary.**

Unfortunately, in some learning environments, a hierarchy exists between supervisors and students that makes it difficult for students to feel comfortable speaking up. As a result, students might observe unnecessary care, but avoid saying anything for fear of potential consequences. Supervisors need to encourage students to feel free to question whether tests or treatments are truly necessary without fear of repercussion. The clinical training environment should be one where students feel safe to ask questions.

### **5 Don't suggest ordering tests or performing procedures for the sole purpose of gaining personal clinical experience.**

The clinical training years in medical school represent an important opportunity for students to translate what was learned in the classroom to the bedside. This can be a challenging time of great uncertainty for students. Students may order tests excessively due to a lack of clinical experience, or recommend investigations in order to build upon their personal experience.

### **6 Don't suggest ordering tests or treatments pre-emptively for the sole purpose of anticipating what your supervisor would want.**

A "hidden curriculum" pervasive in the academic environment encourages medical students to search for zebras through extensive (and often unnecessary) diagnostic workups. Because restraint is often discouraged, students adopt the belief that faculty expect an exhaustive diagnostic approach, and feel that they need to demonstrate their knowledge, thoroughness and curiosity through test ordering. Students can overcome this practice by articulating why they chose not to order a specific test. This, combined with a shift towards 'celebrating restraint' by faculty can help to combat this pervasive practice in medical training.

## How the list was created

The list of “Six Things Medical Students and Trainees Should Question” was developed in partnership with the Canadian Federation of Medical Students (CFMS), and the Fédération médicale étudiante du Québec (FMEQ), which together represent all medical students in Canada. A student-led taskforce, including 3 medical students and 3 Choosing Wisely Canada leads, convened to develop recommendations that target behaviors medical students should question during their training. The task force generated a list of 10 candidate recommendations with input from a key informant group that included student, resident, and faculty representatives. The candidate recommendations were distributed to medical students across Canada through an online questionnaire. Students were asked to rate recommendations while keeping the following criteria in mind: the issue should (i) arise frequently in medical school training, (ii) have relevance to medical students, (iii) play a role in shaping future behaviors, and (iv) be one that medical students could feasibly address during their training. Nearly 2,000 students from all 17 Canadian medical schools provided feedback, which the taskforce used to inform the final list of six recommendations. Both the CFMS and the FMEQ executives approved and officially endorse the list of medical student recommendations.

## Sources

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**About Choosing Wisely Canada:** *Choosing Wisely Canada* is a campaign to help physicians and patients engage in conversations about unnecessary tests, treatments and procedures, and to help physicians and patients make smart and effective choices to ensure high-quality care. For more information on *Choosing Wisely Canada* or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwiselycanada.org](http://www.choosingwiselycanada.org). Join the conversation on Twitter @ChooseWiselyCA.

**About The Canadian Federation of Medical Students:** The Canadian Federation of Medical Students (CFMS) is a proud partner of the *Choosing Wisely Canada* campaign. The CFMS is the organization representing over 8,000 medical students from 14 Canadian medical student societies from coast to coast. The CFMS represents medical students to the public, to the federal government, and to national and international medical organizations.

**About The Fédération médicale étudiante du Québec:** The Fédération médicale étudiante du Québec (FMEQ) is a proud partner of the *Choosing Wisely Canada* campaign. The FMEQ is the body that represents the voice of the four Quebec medical associations and promotes their interests, serving more than 3900 medical students in Quebec.