

Choosing Words Wisely: Residents' Use of Rhetorical Appeals in Conversations About Unnecessary Tests

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Abstract

Purpose

To characterize how residents employ rhetorical appeals (i.e., the strategic use of communication to achieve specifiable goals) when discussing unnecessary diagnostic tests with patients.

Method

In 2015, senior hematology residents from 10 Canadian universities participating in a national formative objective structured clinical examination (OSCE) completed a resource stewardship communication station. In this communication scenario, a standardized patient (SP) portrayed a patient requesting unnecessary thrombophilia testing following early pregnancy loss. The authors performed

a thematic analysis of audio transcripts using a qualitative description approach to identify residents' rhetorical appeals to logic (rational appeals), credibility, and emotion.

Results

For persuasive communication, residents ($n = 27$) relied primarily on rational appeals that fit into 3 categories (with themes) focused on medical evidence (poor utility, professional guidelines and recommendations), avoidance of harm (insurance implications, unnecessary or potentially harmful interventions, patient anxiety), and reassurance to patient (normalizing, clinical pretest probability, criteria for reconsidering testing). Appeals to credibility and emotion were rarely used.

Conclusions

In an OSCE setting, residents relied predominantly on rational appeals when engaging SPs in conversations about unnecessary tests. These observations yield insights into how recent emphasis within residency education on appropriate test utilization may manifest when residents put recommendations into practice in conversations with patients. This study's framework of rational appeals may be helpful in designing communication curricula about unnecessary testing. Future studies should explore rhetoric about unnecessary testing in the clinical environment, strategies to teach and coach residents leading these conversations, and patients' preferences and responses to different appeals.

Concerns regarding the overuse of health care resources have called into question the unnecessary use of tests, treatments, and procedures. National campaigns, such as Choosing Wisely, that raise awareness about issues related to resource stewardship have recommended that physicians engage in shared decision making with patients—a process that involves sharing information, eliciting patient values and preferences, and developing consensus for treatment plans^{1–5}—as a

strategy to avoid unnecessary tests and treatments. However, such conversations can be challenging and emotion laden, especially in circumstances when patients are requesting unnecessary tests or treatments.

Clinicians often turn to *rhetoric*—the strategic use of oral or written communication to achieve specifiable goals⁶—to frame options when communicating with patients.⁷ Persuasive communication within health care may employ rhetorical appeals to logic (rational appeals), the speaker's credibility, or emotion or, as Aristotle described, appeals to *logos*, *ethos*, and *pathos*, respectively.^{8,9} Such rhetoric, while providing patients with clinical information, may also affect their decision regarding a particular course of action.

significance, to correct misconceptions and persuade patients to make logical, informed decisions.^{10,11} Rhetorical appeals to credibility focus on the clinician's authority and may involve overt appeals (e.g., citing clinical or research experience) or implicit appeals (e.g., body language, clothing). Appeals to emotion are complex; while such appeals may unduly influence decision making, an acknowledgment of underlying emotions may be necessary when the clinician is attempting to shift incorrect preconceptions.^{12,13} Emotional appeals may include language that invokes fear or stigma, or they may elicit feelings by using metaphors.^{14,15}

Nuanced dialogue and persuasive communication are often needed when physicians address patient requests for unnecessary tests. Such conversations begin early in residency, and trainees must demonstrate the ability to carry out these conversations as they develop competence in providing high-value, cost-conscious

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When advancing rational appeals, clinicians present facts, along with an interpretation of their clinical

care and in resource stewardship.¹⁶ Several of us previously published a study assessing resident communication skills with patients requesting unnecessary tests, focusing primarily on the residents' ability to apply a structured communication framework.¹⁷ However, to the best of our knowledge, there are no studies that have examined how residents use rhetorical strategies as part of these conversations. While it is unclear what types of rhetorical appeals are deemed by patients to be most effective, a description of how residents employ such appeals would improve our understanding of how current communication skills curricula and clinical experiences affect the ways in which these conversations are taking place. Characterizing these rhetorical appeals may also inform the development of future communication skills training about unnecessary tests. Therefore, our study aims to characterize how residents employ the classic rhetorical appeals to logic, credibility, and emotion during conversations with patients about unnecessary diagnostic testing.

Method

Study setting and participants

In 2015, we incorporated a resource stewardship communication station addressing unnecessary testing as one of the 9 stations in a national formative objective structured clinical examination (OSCE) for hematology residents in their fifth and sixth postgraduate years (PGYs) from 10 Canadian university programs. The scenario was designed to assess communication skills using a novel communication rating scale for resource stewardship. In this report, we present the qualitative analysis of the transcripts of audio recordings from these encounters. This is a secondary analysis; the quantitative results have been presented previously.¹⁸ The quantitative results demonstrated that hematology residents generally performed well in these conversations, as rated by standardized patients (SPs) and faculty examiners. The residents provided clear recommendations, elicited patient concerns, and demonstrated empathy effectively, but there were gaps in how they confirmed agreement on investigations and treatment plans with patients.

In this study, residents did not receive specific communication skills training

related to unnecessary tests. Their performance, therefore, reflects skills acquired through their usual clinical and training experiences at their respective programs. All residents who participated in the OSCE completed this communication station for formative purposes. Before the OSCE, a research coordinator invited all residents to participate in this study by having their quantitative and/or qualitative data collected for research purposes. Only those who consented to participate in the qualitative study had their encounters recorded for inclusion in this analysis. This study received approval from the University of Toronto Research Ethics Board.

Communication scenario and data collection

We developed a scenario to assess residents' skills in communicating with patients about unnecessary testing (Box 1), designed with input from an author with content expertise in thrombophilia (blood clotting disorders) in pregnancy (A.M.). Residents interacted in their language of choice (English or French) with a bilingual SP portraying a woman requesting thrombophilia testing after a first-trimester pregnancy loss. This testing is deemed unnecessary by clinical practice guidelines and Choosing Wisely Canada (CWC).^{19,20}

We provided residents with a brief evidence summary and the associated CWC recommendation in advance to standardize their baseline knowledge. Encounters were audiorecorded, transcribed, and deidentified. French-speaking encounters were translated into English during transcription. SPs and faculty examiners assessed residents using the aforementioned communication rating scale¹⁵ and provided them with written feedback after the OSCE. The SPs were instructed to ask specifically about 2 issues if they were not already addressed by residents: whether the tests were not being offered to save the health care system money and whether there were guidelines about whether testing was indicated. SPs did not provide any other prompts.

Methodologic approach: Qualitative description

We applied a qualitative description approach to identify appeals to logic (rational appeals), credibility, and emotion employed by residents as persuasive communication strategies during these encounters.^{21,22} In this methodology, the researcher stays closer to the data, taking a low-inference approach to obtain unadorned and minimally theorized answers to research questions that require an accurate

Box 1

Unnecessary Testing Communication Scenario Used During OSCE Encounters Between Standardized Patients and PGY-5 and PGY-6 Canadian Hematology Residents, 2015

Jane Doe is a 35-year-old female who has been referred by her family physician with a recent first-trimester pregnancy loss, for consideration of thrombophilia testing.

She had a recent spontaneous abortion at 8 weeks gestational age. She is previously healthy and has no personal history of arterial or venous thrombosis. She has otherwise never been pregnant.

She would like for you to investigate her miscarriage by ordering testing for heritable thrombophilias.

Before seeing the patient, you perform a quick literature search and find out the following:

- Recent observational studies have shown only a weak association between early fetal loss and heritable thrombophilia.
- Randomized studies in women with thrombophilia (TIPPS study) and in nonthrombophilic women with unexplained pregnancy loss have not demonstrated a benefit of antepartum LMWH over placebo in reducing rates of pregnancy complications, including miscarriage.

The 2014 Canadian Hematology Society Choosing Wisely recommendation states:

Do not order thrombophilia testing in women with early pregnancy loss.

Please discuss the role of testing for thrombophilias with this patient. You are being assessed based on your communication skills in this station.

Abbreviations: OSCE indicates objective structured clinical examination; PGY, postgraduate year; TIPPS, Thrombophilia in Pregnancy Prophylaxis Study; LMWH, low molecular weight heparin.

descriptive summary. In contrast to other qualitative methodologies, such as phenomenology (exploration of individual subjective experience) or grounded theory (building theories of social phenomena),²³ the purpose of qualitative description is to present words and events in their own terms, relatively free of interpretation. Therefore, this approach was selected as we sought to describe themes in their most naturalistic terms and because it facilitated a baseline description of the rhetorical appeals that residents used in these conversations.

The primary investigator (E.K.T.) performed content analysis of audio transcripts via multiple successive reads to identify rhetorical appeals. He started with preestablished rhetorical categories of logic, credibility, and emotion and then developed a coding framework within these categories. Based on this initial thematic analysis, he generated a preliminary coding framework with definitions for themes. All coinvestigators reviewed exemplars of each theme in regular team meetings to clarify the thematic definitions, and disagreements between coinvestigators were resolved via group consensus. The primary investigator iteratively applied the revised finalized coding framework

to the transcripts to further refine the thematic analysis. Difficult transcript sections were brought to team meetings of all coinvestigators for discussion until consensus was reached. The primary investigator then reviewed the transcripts again with the final coding framework (Table 1) to determine how frequently themes were cited. All qualitative analysis was completed using NVivo Version 11 (QSR International, Victoria, Australia).

Techniques to ensure methodologic rigor included incorporating team members from differing disciplines (clinical medicine, medical education, resource stewardship), scheduling regular team conferences, and including coinvestigators with experience in qualitative methods. Reflexivity was promoted, with collaborators being explicitly mindful of their relevant experiences in teaching, resource stewardship, and assessment.

Results

Participants

As shown in Table 2, 27 of 54 residents (50.0%) from 10 universities consented to have their encounters audiotaped for qualitative analysis. Of these residents,

11 (40.7%) were female and 7 (25.9%) conducted their encounters in French. Fifteen (55.6%) were PGY-5s, and 12 (44.4%) were PGY-6s.

Rational appeals

Our analysis identified 3 categories of rational appeals: *medical evidence*, *avoidance of harm*, and *reassurance to patient*. Definitions of these categories and of themes within them are presented in Table 1; exemplars are provided in Table 3.

Medical evidence. The most common rational appeals cited medical evidence (Table 2). When introducing these appeals, residents would allude to scientific evidence or to statements from professional organizations that were supported by such evidence. The appeals to medical evidence were grouped into 2 themes: *poor utility* and *professional guidelines and recommendations*.

Residents generally contended that the tests for thrombophilia were of poor utility, meaning they were unnecessary due to a lack of medical evidence for benefit. Residents explained that the tests would not affect clinical care, because their results “would not change the way [they managed] the patient” (Encounter 27, PGY-6). They frequently cited what health care providers regard as the highest quality of evidence, the randomized controlled trial. For example, one resident stated:

[D]espite what you’ve come across in the Internet, we actually know from some pretty good data that’s available, from clinical trials that have been done, that testing for these sorts of thrombophilias actually has very little role. (Encounter 13, PGY-5)

This statement also served the purpose of correcting misconceptions (i.e., incorrect information from the Internet), which may play a role in persuasive communication.^{24,25}

A minority of residents referred to professional guidelines and recommendations to bolster their position that testing was unnecessary. In most cases, trainees cited “guidelines” in general, without stating which professional body made the recommendation (Table 3). None referred explicitly to the Choosing Wisely campaign as a form of supporting evidence.

Table 1

Framework for Coding the Rational Rhetorical Appeals Used by Canadian Senior Hematology Residents When Discussing Unnecessary Diagnostic Testing With Standardized Patients, 2015^a

Themes by category	Description
Medical evidence	
Poor utility	Tests do not benefit patient care or clinical outcomes
Guidelines and recommendations	Published guidelines, recommendations from professional organizations, and resource stewardship campaigns
Avoidance of harm	
Insurance implications	Abnormal test results may lead to an increase in insurance premiums
Unnecessary or potentially harmful interventions	Abnormal test results may lead to additional downstream tests or exposure to medical therapies that may cause more harm than benefit
Patient anxiety	Positive or negative test results may lead to patient anxiety over implications of results
Reassurance to patient	
Normalizing	Arguments stating that the index clinical event is a common occurrence in the general population
Clinical pretest probability	The prevalence and/or likelihood of the condition in question is low, so testing is unlikely to yield an abnormal result
Criteria for reconsidering testing	Physician specifies under what clinical circumstances he/she would reconsider whether to order the test in question

^aRhetorical appeals to credibility (n = 1) and emotion (n = 2) were not included in this coding framework as they were rarely observed in this study.

Table 2

Frequency of Rational Appeals Used by PGY-5 and PGY-6 Canadian Hematology Residents (n = 27) When Discussing Unnecessary Diagnostic Testing With Standardized Patients, 2015

Theme	Rational appeal category	Used by no. (%) of residents (n = 27)	Overall frequency ^a
Poor utility	Medical evidence	27 (100.0)	46
Insurance implications	Avoidance of harm	20 (74.1)	22
Normalizing	Reassurance to patient	17 (63.0)	20
Unnecessary or potentially harmful interventions	Avoidance of harm	11 (40.7)	12
Criteria for reconsidering testing	Reassurance to patient	10 (37.0)	14
Patient anxiety	Avoidance of harm	10 (37.0)	11
Professional guidelines and recommendations	Medical evidence	6 (22.2)	7
Clinical pretest probability	Reassurance to patient	3 (11.1)	5

Abbreviation: PGY indicates postgraduate year.

^aTotal number of instances that this type of rational appeal was employed.

Avoidance of harm. The avoidance of downstream adverse effects from unnecessary testing was a frequently cited category of rational appeals. These appeals could be divided into 3 themes: *insurance implications, patient anxiety, and unnecessary or potentially harmful interventions.*

Three-quarters of residents cited adverse insurance implications, recognizing that diagnosing genetic abnormalities of doubtful clinical consequence could have an adverse financial impact. The term “labeling” was used to describe how abnormal test results could affect the ways patients would be categorized by insurance companies regarding “genetic predisposition to disease” (Encounter 22, PGY-6), which would potentially have adverse financial ramifications.

Residents also argued that test results could lead to patient anxiety. They explained that anxiety could stem from concerns about having an incidental diagnosis the patient did not understand as well as potential clinical consequences related to that diagnosis. For example, when an SP asked whether it would be better to “just know” whether there was an abnormal result, one resident responded:

“It can be a source of anxiety . . . therefore, you might be thinking, ‘I will never get pregnant’ when it’s very probable that this is not [true].” (Encounter 16, PGY-6)

Finally, residents commonly warned SPs that test results could prompt

unnecessary or potentially harmful downstream tests or interventions. For example, one resident described that testing inappropriately for an inherited blood clotting disorder could lead another physician to prescribe a blood thinner (heparin), which has not been proven to be beneficial for preventing pregnancy loss but could cause an adverse effect (bleeding) (Table 3). Residents rarely cited financial costs or harms to patients.

Reassurance to patient. The third type of rational appeal involved providing reassurance to patients about the safety of forgoing unnecessary testing. These appeals had 3 themes: *normalizing, clinical pretest probability, and criteria for reconsidering testing.*

Normalizing reassured patients that the tests would not be of benefit because the event prompting that request (first-trimester miscarriage) was frequent in the general population and was not predictive of future adverse outcomes. (Most such individuals are still able to successfully conceive and carry a pregnancy to term.) The example in Table 3 is representative of how residents placed the patient’s experience in a broader context. One resident stated:

[A] single miscarriage is very, very frequent. So, you are a bit like everyone else. You have as much chance as anyone else to get pregnant again. (Encounter 16, PGY-6)

A similar appeal was clinical pretest probability, in which the low likelihood

of an abnormal test result was cited. Residents explained that the genetic conditions in question were uncommon, especially relative to the frequency of the index event (miscarriage), and as such, testing was not necessary. For example, one resident said that testing was not recommended because it was not “high yield” (Table 3).

Residents also provided reassurance by specifying criteria for reconsidering testing. They indicated that they were open to considering testing under different circumstances. Some acknowledged the changing nature of evidence, stating “this is an area that’s always under study” (Encounter 2, PGY-5). Residents also listed medical events that would change the pretest probability of an abnormal result; Table 3 provides an exemplar.

Appeals to credibility and emotion

We identified only one encounter in which a resident spoke explicitly about her own credibility or authority as a rhetorical appeal. The resident cited her status as a specialist to bolster a rational appeal about the poor utility of testing:

[M]y specialty is coagulation problems, [and] I know that coagulation problems are not what would explain your miscarriage at 8 weeks. (Encounter 18, PGY-5)

Similarly, residents rarely used emotional appeals. Two residents framed the potential negative impact of testing on insurance premiums by stating that patients would be “stuck” with a “horrible label” of illness (Encounter 12, PGY-5) and would “never be insured in exactly the same way ever again” (Encounter 10, PGY-6). This exaggerated language could potentially provoke patient anxiety or fear about the adverse consequences of testing. There were no other emotional appeals to persuade SPs about the advisability of these tests.

Discussion

In this qualitative study, we found that when senior hematology residents discussed unnecessary diagnostic tests with SPs, they relied primarily on rhetorical appeals to logic (*logos*) that focused on citing medical evidence, avoiding harm, and providing reassurance. They rarely cited their own

Table 3

Examples of Rational Rhetorical Appeals Used by PGY-5 and PGY-6 Canadian Hematology Residents (n = 27) When Discussing Unnecessary Diagnostic Testing With Standardized Patients, 2015

Theme	Example
Medical evidence	
Poor utility	<p>SP: Well, I do have to ask . . . I'm wondering sometimes if tests are not ordered because we want to save the health care system's money, you know.</p> <p>Resident: In your particular situation, we wouldn't be sending off the blood tests because we're trying to save the health care dollars. I wouldn't be sending it off because the results of those tests would not change the way I manage you. So even if it came back as being positive, me prescribing you an injection or prescribing you a baby Aspirin would not be the case. Um, because we know that taking those medications does <i>not</i> increase the chances of, uh, you getting pregnant and ensuring that you have safe pregnancy. (Encounter 27, PGY-6)</p>
Professional guidelines and recommendations	<p>SP: Are you just not prescribing me the test because you want to save the health care system some money?</p> <p>Resident: No. To be honest, um, if the test was really helpful for you, we'd absolutely suggest it, but the guidelines have been done taking into account the best . . . interests of the patients and it has been shown that it is not useful for the patients to have this information . . . because you'll probably go on to have a normal pregnancy just as easy as if you had the test done or not. (Encounter 3, PGY-6)</p>
Avoidance of harm	
Insurance implications	<p>Resident: The drawbacks to know that you have the disease is, um, firstly the psychological thing, knowing that you have the disease, um, and then secondly, for example, insurance purposes. If you have insurance through whatever company, it could be declined or the rates could go up for having a disease that doesn't even cause you anything. (Encounter 23, PGY-5)</p>
Unnecessary or potentially harmful interventions	<p>Resident: It's true that requesting tests that are not needed can be very expensive, but also requesting tests that won't help fix the problem can cause a stress.</p> <p>SP: Yes.</p> <p>Resident: This can also lead to more tests that won't help, and maybe even treatments that won't help, as well. Because giving these—it's actually not a small matter, to give a patient heparin.</p> <p>SP: Mmm hmmm.</p> <p>Resident: Because it increases the risk of bleeding. (Encounter 18, PGY-5)</p>
Patient anxiety	<p>Resident: The current recommendations actually are not to test for it.</p> <p>SP: Really?</p> <p>Resident: Yeah. And I can kind of go through the reasons why and you can tell me what you think about them.</p> <p>SP: Yeah.</p> <p>Resident: Okay? Because it might be a bit difficult to understand.</p> <p>SP: Mm hmm.</p> <p>Resident: The first thing is that now we know that whether or not you have it or not, it doesn't really change your risk of having a miscarriage. So, testing for it can actually cause a lot more anxiety, because you might think you have something where it actually plays no effect. One of the ways to think about this is that the Factor V Leiden is actually present in 5% to 10% of Caucasian people. So that's 1 in 10 people sitting in a waiting room that are of Caucasian descent, but most of them <i>don't</i> have any problems. (Encounter 1, PGY-5)</p>
Reassurance to patient	
Normalizing	<p>Resident: Of course, we want to know why things happen in order to prevent it, you know.</p> <p>SP: That's exactly what I want.</p> <p>Resident: The reality is actually that there are many women in your case who have had miscarriages before. I cannot think of the percentage right now, but it's astonishingly high, especially among women of your age. People frequently have miscarriages. Yeah. In fact, oftentimes, after they have one miscarriage, the next time they have a pregnancy it's not a miscarriage, it's a healthy baby. (Encounter 3, PGY-6)</p>
Clinical pretest probability	<p>SP: Well, you said that if you treated me without knowing, but, isn't that part of the test, knowing? That's why I want to know.</p> <p>Resident: The rationale for testing at this point, after a single pregnancy loss, is not—it's not <i>high yield</i>. So, it's very unlikely that we would find these diseases [as they] are all quite rare. It's quite unlikely that we would find anything abnormal at all. And there's lots of evidence out there for people in your exact same people—<i>thousands</i> of people, in your same situation—that if we test all of them, the yield is not high at all to go forward and find abnormalities. (Encounter 4, PGY-5)</p>
Criteria for reconsidering testing	<p>SP: But if you were in my position, wouldn't you want to know?</p> <p>Resident: No, I understand what you are saying . . . this is hard and you want to know as much as you can about things.</p> <p>SP: Exactly.</p> <p>Resident: What we can do is look down the road . . . if you have other unsuccessful [pregnancies]—that would put you in a different risk category where we would be more likely to look at this sort of thing, where the risk–benefit ratio would more favor that this would be more beneficial for you than harmful. (Encounter 7, PGY-6)</p>

Abbreviations: PGY indicates postgraduate year; SP, standardized patient.

credibility (*ethos*) or made emotional appeals (*pathos*) when attempting to persuade SPs about the advisability of testing.

This study is one of the first to examine how residents use rhetoric when discussing unnecessary tests or interventions with patients, as well as how they operationalize resource stewardship and Choosing Wisely recommendations in practice. This is relevant as there has been an increasing emphasis on resource stewardship and appropriate test utilization in residency education curricula.^{16,26–28} Prior studies have focused on how practicing physicians conduct conversations about unnecessary tests. For example, a study with primary care physicians found that they dealt with requests for unnecessary prescriptions by exploring external impetuses for the requests (advertisements), validating concerns by consulting another specialist, or offering alternate reasons for how patients were feeling.²⁹ In another study, situated in real clinics with SPs who were requesting unnecessary brain magnetic resonance imaging to rule out multiple sclerosis, internal medicine specialists responded by citing a lack of medical indication, test expense, or by providing a subspecialist referral.³⁰ These studies suggest that practicing physicians may at times employ both rational and emotional appeals when handling patient requests for unnecessary tests.

By contrast, in our study with residents in an OSCE setting, predominantly rational appeals but few emotional appeals were employed. There are at least 2 possibilities for why emotional appeals were rarely observed in the study: the assessment context or a true paucity of emotional appeals in resident-led conversations. First, regarding the assessment setting, it is possible that resident performance in this simulated scenario did not accurately represent how they would communicate in real patient encounters.³¹ This communication scenario was situated among 8 other stations focused on medical expert knowledge, which may have had an impact on performance and the rhetorical approaches used. Residents were also provided with an evidence summary to standardize knowledge (Box 1), which may have encouraged them to cite medical evidence. It is likely that direct observations of residents engaged in workplace-based encounters would

yield a more authentic representation of the rhetorical appeals they would use, including possible emotional appeals.³²

Second, it is possible that the paucity of emotional appeals reflects how residents actually conduct these conversations in practice. Several authors have commented on the “engrained notion” within medicine that emotion may be disruptive to reasoning, affecting both the patient’s ability to make decisions and the physician’s own clinical decision making.^{12,33,34} This may stem from what McNaughton has described in the medical education literature as a discourse of *emotion as physiology*. In this discourse, emotions are thought to be innate, biological traits that are meant to be managed and minimized so that reasoning may occur.³³

However, McNaughton has also described another discourse: *emotion as skill*. In this discourse, one conceives of *skills in emotions*, which can be taught, learned, performed, and assessed.^{33,35,36} From this perspective, resident physicians would be expected to incorporate and demonstrate such skills in emotions, which would include not only emotional appeals but also empathy and compassion, when discussing unnecessary tests with patients.^{16,37,38} This would imply that residents in our study were not using emotional appeals due to instructional gaps or a need for more clinical experience. Whether patients perceive emotional appeals as persuasive or reassuring when discussing unnecessary tests requires further investigation.

It is notable, although unsurprising, that overt appeals to credibility were mostly absent. This was a structured, controlled examination that lacked many of the contextual factors, such as physical space, the hospital environment, and white coats, that may have an impact on a clinician’s credibility. Furthermore, most subspecialty residents would not yet have the clinical or research experience that could serve as a basis for such appeals. Also, our residents rarely cited financial costs as a rational argument, likely because in Canada, patients do not incur out-of-pocket costs for thrombophilia testing.

Almost all the rational appeals advanced by residents were made without explicit questions from SPs about particular concerns or topics. The SPs in this

simulated scenario were only provided with 2 scripted prompts (about whether tests were being denied to reduce health care expenditures or whether there were relevant guidelines). The excerpts presented (Table 3) illustrate several instances when residents chose certain rational appeals, without the benefit of SPs alerting them to concerns (e.g., queries about insurance implications), which would have served as an availability bias to influence those rational appeals.³⁹ It is possible that the OSCE setting may have resulted in a more directive interview style from participants, with less dialogue and prompting from SPs than would be expected in true clinical encounters.

The framework of rational appeals described in this study may be helpful in designing communication curricula about unnecessary testing. Communication skills training in other areas, such as breaking bad news and error disclosure, have been effective in improving resident communication skills.^{40,41} This framework could serve as a foundation upon which residents could elaborate arguments for or against pursuing testing based on prior experience, patient-specific factors, and clinical context. Achieving resolutions for both patients and clinicians in these challenging conversations may require learners to develop adaptive expertise, as they use their knowledge within a given context to create solutions that meet a particular patient’s needs (innovation) based on considerations including clinical factors and patient values and preferences.^{42,43}

To that end, a communication skills curriculum that includes an approach to rhetorical appeals and incorporates case-based exercises or varied clinical exposures would allow learners to apply and adapt such a framework to different scenarios. While our framework aligns with the principles espoused by Choosing Wisely, further work is needed to ascertain the effectiveness of our 3 categories of rational appeals before they are incorporated into practice.^{2,44} This would include evaluating how patients respond to different rational appeals. Such an approach, incorporating the consideration of medical evidence with patient values and preferences, would also be aligned with the principles of evidence-based medicine.⁴⁵

There are several study limitations. First, the study's potential transferability is limited, as it was performed with SPs in an OSCE setting. Participants were senior (PGY-5 and PGY-6) residents from one subspecialty whose communication skills were likely more advanced than those of trainees earlier in residency, and their performance may not reflect the skills of more junior residents or those from other subspecialties. This study's scenario involved a specialized test (thrombophilia testing) in an inherently emotional scenario (pregnancy loss), and it is possible that the rhetorical appeals used would have been different for other clinical scenarios or tests. However, our study findings provide a framework of rational rhetorical appeals that could inform broader efforts to teach and assess communication skills, particularly involving difficult conversations with patients and families.

Second, given that only half of the eligible residents participated, we are unable to comment on how nonparticipants would have performed. It is possible that volunteer bias may have influenced our findings, with residents more comfortable or knowledgeable about resource utilization or with OSCEs generally more willing to participate. However, compared with study participants, the 27 residents who did not participate were from the same training programs and had similar proportions of gender, training level, and primary language. While we cannot rule out a systematic difference between participants and nonparticipants, it is likely that the groups were similar in clinical experience and exposure to resource stewardship concepts and teaching.

Third, our study did not include real patients and therefore provides limited insight into the actual patient voice and perspective, including concerns patients might raise and their responses to different appeals in the clinical context. It is possible that the appeals employed by residents in response to the voiced concerns of real patients would differ from those observed in this study. Finally, as this was an analysis of audio data, we are unable to comment on the nonverbal aspects of communication, which limits our ability to describe nonverbal rhetorical appeals.

In conclusion, we found that when senior hematology residents engaged SPs in conversations about unnecessary tests,

they primarily used 3 types of rational appeals—medical evidence, avoidance of harm, and reassurance to patient—while rarely employing appeals to credibility or emotion. These observations yield new insights into how the increasing emphasis within medical education on appropriate test and resource utilization may manifest when residents put recommendations into action. Future studies should focus on exploring how rhetoric about unnecessary testing is employed in the clinical environment, developing strategies to teach and coach residents leading these conversations, and determining patients' preferences and responses relating to differing types of rhetorical appeals. These studies' findings will contribute more broadly to communication curricula about unnecessary tests and interventions.

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