

National Survey of the Physicians, Pharmacists, Nurses, and Public in Canada: 2013

Medical Council of Canada Blueprint Project

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Background of the Project

To develop sound and defensible assessments, a clear, adequately-specified blueprint is needed. For certification and licensure examinations, where the purpose of the assessment(s) is to protect the public, a practice-related blueprint is essential as it both determines what will be measured and guides the choice and weighting of specific test content. For the assessment of professionals, including physicians, many frameworks have been utilized to develop examination blueprints and associated test plans. Here, the adequacy of the blueprint rests with establishing a link between knowledge, skills and abilities (KSAs) needed to practice and what is actually measured as part of the assessment process.

To develop a blueprint, or test plan, various sources of information can be used. In medicine, competency frameworks have been delineated and described by several organizations (e.g., Accreditation Council for Graduate Medical Education, General Medical Council, Royal College of Physicians and Surgeons of Canada). These “competency frameworks” define the KSAs that physicians require in order to provide patient care. The Royal College of Physicians and Surgeons of Canada (RCPSC) specifically define seven interrelated roles (medical expert (central role), communicator, collaborator, manager, health advocate, scholar and professional) that physicians must be versed in to practice effectively and safely. For physicians, these roles define what should be measured as part of the assessment process. Other sources of information, including actual practice data (available from medical records or national surveys), curricular information (available from medical schools and residency programs), previously delimited testing objectives, opinions of subject matter experts (SMEs), and surveys of relevant stakeholders can also help inform test plans. Taken together, these sources of information can

help guide test planning and ensure that the KSAs, and associated content- or process-related test items or clinical scenarios, are relevant to practice. From a validity perspective, the rationale for defining and describing the job content in a particular way needs to be stated clearly and supported (American Educational Research Association; American Psychological Association, & National Council on Measurement in Education, 1999).

For the professions, a practice analysis is an essential part of the blueprint development process (Raymond, 2001). Taking medicine as an example, it is essential to know the tasks that physicians perform and their relative importance in terms of patient care. Here, surveys of stakeholders can be employed to gather relevant information regarding the importance of specific competencies, content domains (e.g., organ systems) and processes (e.g., identify, diagnose, and manage specific patient conditions). These competencies and tasks can be general (communicate with patients) or more specifically related to a particular patient condition (e.g., initiate management of anaphylaxis). Also, given that expectations for patient care can vary as a function of training, it is important to gather data that specifically references level of educational attainment. The choice stakeholders (survey respondents) will depend on a number of factors, including the KSA being evaluated and the ability of the respondent, based on experience, to make knowledgeable and informed judgments. For tasks that demand specific medical knowledge or an understanding of clinical processes, it is necessary to survey physicians. For other tasks, or abilities (e.g., communication, interpersonal skills), other stakeholder groups (e.g., pharmacists, nurses, and members of the public) can also provide meaningful opinions.

The following report provides an overview of the survey that the Medical Council of Canada (MCC) conducted as part of the practice analysis of physicians who are either a) starting residency training (supervised practice) or b) newly licensed (entering unsupervised practice).

The survey content was based on previously developed MCC Objectives. These Objectives can be classified more generally by CanMEDS roles or more specifically by process (e.g., diagnose, interpret, manage). Judgments of importance were collected based on expected physician abilities at entry to supervised practice (residency) and at entry to unsupervised practice (initial licensure). The synthesis of this data, both in aggregate, and stratified by relevant variables, provides valuable information that, combined with other sources, will inform test plans. Basing the examination(s), at least in part, on the informed opinions of stakeholders will ensure that the assessment content is meaningfully related to practice.

National Survey Design

The survey was administered to various stakeholder groups, including physicians, nurses, pharmacists and members of the public. The national survey was piloted from February 4 to 8, 2013, using two delivery systems. Physician, pharmacist and nurse data were collected using FluidSurveys.com. Public data were collected through the polling company Ipsos Reid. In preparation for the national data collection, minor corrections to the administration tools were made after the initial pilot. MCC staff ensured that the surveys were presented correctly and that data were collected as planned. Following this quality assurance checks minor corrections were made to some of the survey questions.

The next sections describe the survey design first presented to physicians followed by the one that was used for the nurses, pharmacists and public stakeholder groups. The physician survey design was more complex because of the large number of questions required to adequately sample the potential practice domain. As a result, 14 survey forms, with some overlapping content, were created. This was done to minimize the burden on individual respondents and, therefore, to maximize the number of responses across all survey questions.

Physician Survey

Background on survey design

The national survey questions were based on the MCC Objectives that currently guide test development efforts (i.e., MCC staff and Test committees) for the MCC Evaluating Examination, the Qualifying Examination Part I and the Qualifying Examination Part II (Medical Council of Canada, 2009a). These Objectives were first published in 1992 and subsequently reclassified and updated in 2004. An Objectives Committee, consisting of 12 medical education experts across disciplines and regions within Canada, was created to reclassify and review the Objectives in 2004 to incorporate the CanMEDS physicians' roles that resulted in the third edition in 2009 (Frank, 2005; Medical Council of Canada, 2009b). The MCC Objectives were classified into separate roles; *communicator, collaborator, health advocate, manager, scholar, professional* and *expert*, where each objective falls into one of the above categories. This reclassification was based on a gap analyses conducted between the original MCC Objectives and the CanMEDS roles, as defined by the Royal College of Physicians and Surgeons of Canada (Frank, 2005). Most of these changes consisted of adapting CanMEDS roles language to the MCC Qualifying Examinations Objectives.

Extensive reviews and revisions by this committee occurred on an ongoing basis to ensure that the Objectives were up-to-date. The latest version was completed in 2012 prior to the National Survey development. The Objectives from the current MCC Qualifying examinations, while the basis for our physician survey, were not directly translated to individual questions. In some cases, the Objectives were split into multiple survey questions; while in others instances there were duplications in content thus some of the Objectives were not represented on the survey.

The questions on the national survey reflected two broad categories of CanMEDS roles: (1) medical expert questions, and (2) non-medical expert questions. Medical expert questions correspond to the knowledge, skills, and attitudes that relate to the physician role of medical expert where specific conditions or competencies in medicine are required (e.g., “anxiety” or “jaundice”; c.f. next sections for full description). Non-medical expert questions reflect the knowledge, skills, and attitudes that relate to the physician roles of *collaborator*, *communicator*, *health advocate*, *manager*, *professional*, and *scholar* (e.g., “appropriately develop and maintain ethical relationships”; c.f. next sections for full description).

The national survey for physicians was designed to collect specific information at two decision points; entry into (1) *supervised* and (2) *unsupervised* practice. As a reminder, the importance of the medical expert and non-medical expert roles for a physician starting residency training was the emphasis at the *supervised* level. Conversely, the importance of the medical expert and non-expert roles for any newly licensed physician entering unsupervised practice was emphasized at the *unsupervised* level. Each survey question was presented with a reference to these two decision points.

Medical expert roles

For the medical expert section, the general stem that introduced the section was as follows: “**For each of the following clinical presentations, please rate the importance of the medical expert role [for a physician starting residency training]/[any newly licensed physician entering unsupervised practice] who is assessing a patient at the initial presentation.**” Following this statement, a listing of medical expert questions was presented. Most of the medical expert questions were also presented with the following two references: *determine cause* and *initiate management* (i.e., *initiate management* included ordering

investigations, initiating treatment and/or consulting other services, as appropriate). Since these two categorizations were presented at the *supervised* and *unsupervised* levels most medical expert questions were presented four times to a physician respondent. This allowed respondents to rate the importance at each level (*supervised, unsupervised*) and each categorization (*determine cause, initiate management*; see Figure 1 for example).

Additionally, a small number of questions required physician respondents indicate importance with respect to differentiate between, initiate appropriate management, and population health. The questions in the above categories were presented at both the supervised and unsupervised levels (see Figure 2 for example).

For each of the following clinical presentations, please rate the importance of the medical expert role for a physician starting residency training who is assessing a patient at the initial presentation.

Note: *Initiate management* includes ordering investigations, initiating treatment and/or consulting other services, as appropriate.

Starting Residency	Determine Cause(s)				Initiate Management			
	Not Important	Moderately Important	Very Important	Extremely Important	Not Important	Moderately Important	Very Important	Extremely Important
Diplopia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dysphagia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ear pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the following clinical presentations, please rate the importance of the medical expert role for any newly licensed physician entering unsupervised practice who is assessing a patient at the initial presentation.

Note: *Initiate management* includes ordering investigations, initiating treatment and/or consulting other services as appropriate.

Newly Licensed (Unsupervised)	Determine Cause(s)				Initiate Management			
	Not Important	Moderately Important	Very Important	Extremely Important	Not Important	Moderately Important	Very Important	Extremely Important
Diplopia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dysphagia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ear pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 1. Example format of *determine cause/initiate management* medical expert question

For each of the following clinical presentations, please rate the importance of the medical expert role for a physician starting residency training who is assessing a patient at the initial presentation.

Note: *Initiate management* includes ordering investigations, initiating treatment and/or consulting other services, as appropriate.

Starting Residency	Differentiate between			
	Not Important	Moderately Important	Very Important	Extremely Important
Vertigo and other causes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conductive and sensorineural causes of hearing dysfunction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each of the following clinical presentations, please rate the importance of the medical expert role for any newly licensed physician entering unsupervised practice who is assessing a patient at the initial presentation.

Note: *Initiate management* includes ordering investigations, initiating treatment and/or consulting other services as appropriate.

Newly Licensed (Unsupervised)	Differentiate between			
	Not Important	Moderately Important	Very Important	Extremely Important
Vertigo and other causes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conductive and sensory-neural causes of hearing dysfunction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2. Example format of *differentiate between* medical expert question.

Non-medical expert roles

For the non-medical expert section, the introduction to this section was as follows:

“Please rate the importance of the following competencies [for the physician starting residency training]/[any newly licensed physician entering unsupervised practice]. [A physician starting residency training should:]/[All newly licensed physicians entering unsupervised practice should:].” Following this statement, a listing of non-medical expert questions was presented, such as *Evaluate his/her personal professional competence* or *Recognize that self-respect is part of respect for others*. All of the questions in the non-medical expert category were presented twice, i.e., according to both decision points.

Physician Survey forms

The physician survey, administered in 14 forms, had a total of 974 questions that measured importance across all of the medical expert and non-medical expert categories. A four-point Likert scale was used to measure the respondent’s judgment of importance along the following four categories: “Not Important”, “Moderately Important”, “Very Important”, and “Extremely Important”. The number of questions is shown in Table 1 by medical expert and non-medical expert and categories. As well, these are presented by broad CanMEDS roles categories and task. There were 758 medical expert and 216 non-medical expert questions in the physician survey.

Table 1. Number of questions for medical expert and non-medical expert by objective category.

	medical expert	
	<i>supervised</i>	<i>unsupervised</i>
<i>determine cause</i>	170	170
<i>initiate management</i>	170	170
other*	39	39
Total medical expert	379	379
	non-medical expert	
	<i>supervised</i>	<i>unsupervised</i>
<i>collaborator</i>	20	20
<i>communicator</i>	23	23
<i>health advocate</i>	5	5
<i>manager</i>	11	11
<i>professional</i>	40	40
<i>scholar</i>	9	9
Total non-medical expert	108	108
Total	487	487

* other includes the questions in the categories *differentiate between*, *initiate appropriate management*, and *population health*

In an effort to minimize the burden for any given physician respondent, these 974 questions were allotted to 14 different forms, which ranged from 52 to 82 questions (see Table 2). Sixty-four questions were repeated across several of the survey forms, all of which were non-medical expert questions. The breakdown of these numbers of questions per form is shown in Table 2. Note that many of the non-medical-expert question totals will not add up the overall total due to the repeated questions across forms.

Table 2. Number of questions per form for medical expert and non-medical expert

Form	medical expert			non-medical expert					
	<i>determine cause</i>	<i>initiate management</i>	<i>other*</i>	<i>collaborator</i>	<i>communicator</i>	<i>health advocate</i>	<i>manager</i>	<i>professional</i>	<i>scholar</i>
1	15 (15)	15 (15)		1 (1)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
2	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
3	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
4	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
5	15 (15)	15 (15)		2 (2)	1 (1)	1 (1)	1 (1)	3 (3)	1 (1)
6	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
7	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
8	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
9	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
10	15 (15)	15 (15)		2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
11	15 (15)	15 (15)		2 (2)	1 (1)	1 (1)	1 (1)	4 (4)	1 (1)
12	15 (15)	15 (15)	8 (8)	2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
13			16 (16)	2 (2)	2 (2)	1 (1)	1 (1)	3 (3)	1 (1)
14			15 (15)	2 (2)	2 (2)	1 (1)	1 (1)	4 (4)	1 (1)
Total	340	340	78	40	46	10	22	80	18

* other includes the questions in the categories *differentiate between*, *initiate appropriate management*, and *population health*

Note: The values in brackets indicate the number of questions for the *supervised* and *unsupervised* level.

Pharmacist, Nurse, and Public survey

The survey form that was administered to pharmacists, nurses and the public focused on the same 36 physician survey questions taken from the following three broad CanMEDS roles: *professional*, *collaborator*, and *communicator*. Two questions deemed to be relevant for each sub-group were also added. Each of these three stakeholder groups completed a survey form that included 38 Likert scale questions across the following three domains: *professional* (n = 17), *collaborator* (n = 5), and *communicator* (n = 16). The 38 Likert scale questions administered to the pharmacists, nurses and members of the public were similar, with some wording changes to reflect the composition of each of the stakeholder groups. The wording of survey questions that involved judging importance was exactly the same for the pharmacist and nurse groups. However, the wording of these same questions was altered for members of the public survey to minimize medicalese. The four-point Likert scale of importance used in the national survey for the physicians was also used in the survey for pharmacist, nurse, and public survey.

In addition, to the 38 Likert scale questions on the pharmacist and nurse surveys, the following two opened ended questions were included: (1) *In your role as a health professional, what do you think are the most important competencies that a physician should have?*(2) *Please provide your comments and feedback.* The pharmacist and nurse survey respondents rated each question ONLY at the *unsupervised* level. The instructions at the beginning of the survey read as follows: “**Please rate the importance of the following competencies for a physician who is starting to practice in an independent (unsupervised) setting. A physician who is starting to practice in an independent (unsupervised) setting should:**”. Following this statement, a series of survey questions followed, such as *Display license and specialty certificates* or *Abide by the profession’s ethical codes, rules and regulations*.

In addition, to the 38 Likert scale questions on the public survey the following opened ended question was added: *As a person who used services provided by the Canadian health care system, what are the most important competencies that a physician should have? Please write your response in the text box below.* The public survey respondents rated each question ONLY at the *unsupervised* level, using the same Likert scale. The instruction preceding the public survey was as follows: **“Please rate the importance of the following competencies for a physician who is starting to practice in an independent setting. A physician who is starting to practice in an independent setting should:”**. Following this statement a series of survey questions followed, such as *Practice without impairment from substance abuse, ill health or other incapacity* or *Follow up with patients to ensure good patient care.*

National Survey Sample

Physician Sample

The national survey was administered from February 15, 2013 to March 11, 2013. Two groups of physicians were asked to participate. First, individuals who obtained the Licentiate of the Medical Council of Canada (LMCC) from 2007-2012 were contacted via e-mail invitation. Out a total of 15,534 potential participant e-mails 1,112 addresses were no longer valid; 26 were no longer receiving e-mails from the Medical Council of Canada; and 11,977 did not open the e-mail. Out of the 2,419 invitees that opened the e-mail link; 1,289 viewed the initial screen but did not complete the survey; 9 started the survey but terminated early; 1,121 physicians completed the survey. This represents an approximate response rate of 7.8% (46.3% of those who opened the e-mail link).

Second, clinical preceptors (physicians who interact with students and residents) from each Canadian medical school were invited to participate via an e-mail sent through their

associate dean office (either undergraduate medical education or postgraduate medical education). We estimate that the survey was sent to approximately 5,000 clinical preceptors. Seven hundred and fifteen respondents completed the survey, yielding an approximate response rate of 14.3%.

The total number of physician respondents was 1,836 resulting in an overall response rate of 9%. Of these respondents, 23% were residents, 70% were practicing clinicians, while 7% were not actively seeing patients. The number of physician respondents by province and associated percentages are presented in Table 3. These percentages are based on the total number of completed survey responses after eliminating some missing data for the province variable. For example, 241 physician respondents were from Alberta.

Table 3. *Percentage and number of respondents by province for the physician survey.*

Province	Physician	
	N	%
Alberta	241	13.7
British Columbia	226	12.8
Manitoba	52	2.9
New Brunswick	31	1.8
Newfoundland and Labrador	53	3.0
Northwest Territories	2	0.1
Nova Scotia	59	3.3
Nunavut	1	0.1
Ontario	513	29.1
Prince Edward Island	1	0.1
Quebec	486	27.5
Saskatchewan	100	5.7
Yukon	1	0.1
missing	70	
Total N	1766*	

*the total N was less than the complete sample due to missing data on province variable

Pharmacist, Nurse, and Public Sample

The survey responses of the pharmacists, nurses and public were collected using two methods. The survey data for the pharmacists and nurses were gathered using Fluidsurveys.com. The Pharmacy Examining Board of Canada agreed to forward the survey invitation to the Canadian Pharmacists Association. The invitation was sent to their members via an e-mail link to the online survey. In addition, the survey was distributed via an electronic newsletter to the Canadian Association of Hospital Pharmacists. Approximately 5,000 pharmacists were invited to participate in this survey, with an approximate response rate of 2.2% (n=111). Out of the 156 pharmacists who opened the e-mail link, 111 completed the survey. Forty six pharmacists started the survey but did not complete it (71% completed the survey once started). A review of the pharmacist and physician responses was conducted on the 36 common questions and

revealed very few differences in judged importance of non-medical expert roles. Given that the similarity of the physician and pharmacist data and in light of the low pharmacist's response rate pharmacist-specific results will not be presented.

The Canadian Nurses Association (CNA) also shared the MCC survey's invitation with their membership via an e-mail link to the online survey. The survey link was distributed through the Canadian Nurses' Association electronic newsletter. Out of the estimated 100,000 nurses invited to participate in our survey, 138 completed the form (0.1% response rate). Out of the 187 nurses who opened the e-mail link, 138 completed the survey. Forty nine nurses started the survey but did not finish (74% completed the survey once started). A review of the nurse and physician responses was also conducted on the 36 common questions and revealed very few differences in judged importance of non-medical expert roles. Given that the similarity of the physician and nurse data and in light of the low nurse's response rate nurse-specific results will not be presented.

The public survey data were collected by Ipsos Reid. A total of 1,102 members of the public completed the survey. Ipsos Reid used the census population information to specifically target individual respondents to match the demographic profile of all Canadians. Using these population data, Ipsos Reid contacted individuals until sampling targets were met. To participate in the public survey, each respondent was required to be a resident of Canada and have visited a physician within the last year. Comparing public and physician opinions on non-medical expert roles yielded few appreciable differences. Therefore, summary data regarding public opinions of the importance of different roles will not be presented here. Instead, a summary of themes generated from the comments to the open-ended question will be provided.

Results

National Survey – Summary of Physician results

As indicated above, all of the analyses described in this section include responses from the physician survey, with the exception of the qualitative summary of the public comments. To aid in interpretation of the survey results, Likert-scale responses to each of the physician questions were collapsed by combining the top two and bottom two response options. That is, the “Not Important”, “Moderately Important” and “Very Important”, “Extremely Important” categories were collapsed to “Not/Moderately Important” and “Very/Extremely Important”. These collapsed categories were used in all subsequent physician analyses. In addition, the two task labels of *initiate management* and *initiate appropriate management* were collapsed into the category of *initiate management*. The questions were ordered by overall importance at the *supervised* and *unsupervised* decision points, and then compared. Overall importance was calculated as the percentage of respondents who judged the question to be “Very/Extremely Important”. For example, the overall importance for *initiate management, cardiac arrest* was judged to be 95.4% at the *supervised* level (see Table 4).

To facilitate discussion, analyses are presented according the following four categories: (1) at least 80% of the respondents indicated that the question was “Very/Extremely Important” at the *supervised* and *unsupervised* decision points, (2) a comparison of questions for which at least 80% of respondents felt the statement was “Very/Extremely Important” across the *supervised* and *unsupervised* decision points, (3) questions where 50% or less of the respondents indicated that the question was “Very/Extremely Important” at the *supervised* and *unsupervised* decision points, and (4) summary of qualitative comments and themes from the public survey (this is the only section that used non-physician response data).

Within the 80% overall importance section, two levels of analysis was conducted: question level importance by decision point and summary of categories of questions by decision point. The results were first organized by presenting the questions that were judged to be “Very/Extremely Important” by 80% or higher of physician respondents. The tables show the results from highest percent to lowest at each decision point, also broken down by medical expert and non-medical expert role.

Next, a summary of the broad categories of questions that met the 80% threshold of “Very/Extremely Important” within the *supervised* and *unsupervised* levels are presented graphically. The percent of questions was calculated by dividing the number of questions in a category that met the 80% criterion by the total number of questions at that decision point. Hypothetically, for example, if there were 100 questions that met the threshold at the *supervised* decision point, and 25 were in the category of *determine cause*, the percent shown is 25%. The percentages of questions that met the “Very/Extremely Important” criterion were calculated separately for: *determine cause*, *initiate management*, *differentiate between*, *population health*, *collaborator*, *communicator*, *manager*, *health advocate*, *professional*, and *scholar*. These graphs provide relative information on the percentage of questions at the *supervised* and *unsupervised* decision points that were judged to be “Very/Extremely Important”. Furthermore, these results are presented first at the *supervised* and then at the *unsupervised* level.

The next section shows the comparison of questions judged be to be “Very/Extremely Important” for 80% or higher of the physician respondents across the *supervised* and *unsupervised* levels. A summary of the questions that overlap between the *supervised* and *unsupervised* level based on the 80% criterion, is presented for both the medical expert and non-medical expert type of question. Tables are presented that show the overall importance for the

questions at the *unsupervised* level along with the corresponding percent overall importance at the *supervised* level. This section allows the reader to directly compare the importance judgment for specific questions across both decision points.

The third section shows the questions for which less than 50% of physician respondents indicated “Very/Extremely Important”. Similar to the previous section, tables list from highest to lowest percent separated into medical expert and non-medical expert sections. Full ranking results across decision points, including percentages of respondents who indicated the question was “Very/Extremely Important”, are presented in Appendix A, Table A1, for reference purposes.

The final section summarizes the open ended question of the public survey. A summary of the themes and number of responses coded within these themes are provided.

Questions judged to be “Very/Extremely Important”

Supervised

There were 122 questions out of 487 across medical and non-medical expert question categories at the *supervised* decision point, where at least 80% of the respondents thought the question was “Very/Extremely Important”. The medical expert questions are shown in Table 4 at the *supervised* decision point. This list provides an overview of the questions that, based on our 80% criterion, physicians felt were important at the *supervised* level. Because many of the medical expert questions were asked separately for both tasks (*determine cause* and *initiate management*), the same question can appear more than once on the table. For example, one of the highest ranking medical expert questions was for *initiate management, cardiac arrest*, with 95.4% overall importance. This same question for the *determine cause* task was ranked lower, with 88.5% with physician respondents indicating “Very/Extremely Important”.

Table 4. Medical expert questions important at the supervised level.

%	Category	Question	%	Category	Question
95.4	initiate management	Cardiac arrest	85.3	determine cause	Suicidal behavior
95.4	determine cause	Chest pain	85.3	initiate management	Suicidal behavior
94.6	initiate management	Chest pain	84.9	initiate management	Urinary obstruction
94.4	differentiate between	Cardiac and non-cardiac chest pain	84.9	determine cause	Generalized edema
94.1	initiate management	Anaphylaxis	84.9	initiate management	Hypoglycemia
93.1	determine cause	Shock	84.8	determine cause	Acute hemiplegia/Hemisensory loss
92.4	determine cause	Dyspnea	84.0	determine cause	Vaginal bleeding
91.6	initiate management	Upper gastrointestinal bleed	83.9	differentiate between	Benign and more serious causes of cough
91.5	initiate management	Shock	83.6	determine cause	Jaundice
90.8	initiate management	Dyspnea	83.6	determine cause	Neonatal distress
90.3	determine cause	Coma	83.3	differentiate between	Syncope and seizures
90.1	determine cause	Respiratory distress in children	83.2	initiate management	Lower gastrointestinal bleed
89.3	initiate management	Respiratory distress in children	83.2	determine cause	Acute kidney injury
89.2	determine cause	Delirium	83.1	determine cause	Hypotension
88.6	determine cause	Anemia	83.0	initiate management	Fever in a child
88.5	determine cause	Cardiac arrest	82.6	initiate management	Hyperglycemia
88.2	initiate management	Hyperkalemia	82.4	determine cause	Upper gastrointestinal bleed
88.2	determine cause	Hypoxemia	82.4	determine cause	Urinary obstruction
87.6	determine cause	Syncope	82.4	initiate management	Hypokalemia
87.4	initiate management	Venothromboembolic diseases	82.3	determine cause	Head trauma
87.1	determine cause	Paralysis	82.3	initiate management	Head trauma
87.1	differentiate between	Ascites and bowel obstruction	82.2	determine cause	Child abuse
87.0	determine cause	Headache	82.1	determine cause	Acidemia
86.8	initiate management	Seizures/Epilepsy	81.5	initiate management	Vaginal bleeding
86.4	determine cause	Hyperglycemia	81.4	initiate management	Child abuse
86.3	initiate management	Hypoxemia	81.4	initiate management	Delirium
86.1	determine cause	Fever in a child	81.3	initiate management	Neonatal distress
85.8	initiate management	Coma	80.8	determine cause	Hypertension in pregnancy
85.6	determine cause	Hypoglycemia	80.7	initiate management	Dysuria, urinary frequency and urgency
85.4	determine cause	Acute vision loss			

% = percentage of respondents who indicated "Very/Extremely Important"

For questions within the non-medical expert category, the percent overall importance judgment from highest to lowest is shown in Table 5. The highest ranking non-medical expert question was for *Recognize when a clinical situation exceeds his/her expertise*, with 99.6% of the respondents indicating that this is “Very/ Extremely Important”.

Table 5. *Non-medical expert questions important at the supervised level.*

%	Category	Question
99.6	collaborator	Recognize when a clinical situation exceeds his/her expertise
98.7	professional	Recognize his/her personal limitations of competence
98.5	professional	Maintain confidentiality of professional documents
98.5	professional	Observe appropriate and legal boundaries in relationships with patients
98.4	professional	Abide by the profession's ethical codes, rules and regulations
98.4	professional	Recognize his/her personal limits when asked to assume responsibilities
98.2	communicator	Treat patients with respect while attending to comfort and concerns
98.0	professional	Practice without impairment from substance, ill health or other incapacity
97.8	professional	Communicate with colleagues clearly, in a timely and respectful manner
97.7	collaborator	Respect the views of team members and patients/families
97.7	communicator	Appropriately manage the communication of confidential medical information
97.7	professional	Access available support services if professional competence is compromised
97.1	professional	Demonstrate compassion and dedication to the welfare of patients and society
97.1	communicator	Use language appropriate to the patient's understanding
96.8	communicator	Communicate complete and truthful information in accordance with the patient's rights
96.3	professional	Be responsive to feedback from colleagues
96.0	professional	Demonstrate professional behaviors to ensure patient safety
96.0	professional	Practice the profession with due regard for basic human rights
96.0	professional	Assume responsibility for his/her own actions
96.0	collaborator	Demonstrate clear written and oral communication with colleagues and patients/families
96.0	communicator	Write prescriptions legibly and correctly
95.8	collaborator	Carry out recommended care or ensure appropriate transfer of care
95.8	collaborator	Act responsibly and expeditiously when other health professionals request assistance
95.5	collaborator	Share patient information appropriately while respecting confidentiality
94.4	communicator	Be an active and engaged listener
93.3	collaborator	Identify the patient care service needed when one has reached his/her own limits of expertise
93.1	communicator	Seek consent from competent patients before involving family members
93.0	professional	Refrain from abusing power relationships within the health care system
92.8	collaborator	Demonstrate respect for each team member's expertise

% = percentage of respondents who indicated “Very/Extremely Important”

Table 5. (continued) *Non-medical expert questions important at the supervised level.*

%	Category	Question
92.4	communicator	Disclose errors and adverse events in a prompt and truthful manner
92.3	professional	Recognize that self-respect is part of respect for others
91.2	communicator	Adapt patient communication to the clinical context
91.2	communicator	Appropriately communicate to meet the requirements for obtaining informed consent
90.8	professional	Maintain competence according to the requirements of his/her specialty
90.7	scholar	Demonstrate self-awareness when assessing his/her own competence
90.4	communicator	Retain comprehensive, legible and up-to-date documentation
90.2	professional	Use current ethical and legal aspects of informed consent and mental capacity
90.2	professional	Demonstrate an appreciation of the interdependence of health professionals
89.5	communicator	Manage patient information disclosure appropriately in accordance with legal requirements
89.3	communicator	Be aware of the impact of his/her non-verbal communication
89.2	professional	Follow up with patients to ensure good patient care
89.0	professional	Be aware of the potential bias that can influence judgment
88.8	communicator	Establish a common understanding about care plans with the patient
88.2	collaborator	Seek help and advice when necessary to resolve conflict among care team members
87.9	communicator	Communicate effectively in challenging patient care situations
87.2	communicator	Demonstrate appropriate interviewing skills including clarifying, bridging and summarizing
87.1	professional	Acknowledge the contributions and expertise of colleagues
87.1	collaborator	Include the patient and family as part of the care team
87.0	professional	Conduct ongoing personal education to maintain competence
86.8	professional	Acknowledge the contributions of colleagues
86.6	professional	Evaluate his/her personal professional competence
86.6	communicator	Determine a patient's concerns, beliefs, expectations and illness experience
86.0	communicator	Communicate clearly and effectively to patients the reasons for a referral and the consultant's role
85.1	communicator	Communicate information to third parties in a timely, legal and ethical manner
84.9	professional	Maintain required credentials and licensure
84.9	manager	Prudently use all health care resources without bias or discrimination
84.8	collaborator	Work effectively within the health care system
83.7	professional	Engage consultants as necessary when faced with complex ethical issues
82.9	scholar	Evaluate his/her personal learning outcomes
82.6	scholar	Recognize that clinical practice can be complicated, uncertain and ambiguous
82.2	manager	Recognize the need for a balance between his/her professional and personal life
80.8	collaborator	Ensure that a consultant's advice is received promptly
80.5	professional	Recognize that attitudes to confidentiality may vary among different people

% = percentage of respondents who indicated "Very/Extremely Important"

Given that each question was rated by each survey respondent at both decision points; hypothetically, all survey questions could have been rated as “Very/Extremely Important”. However, since not all questions met our criterion of greater than 80%, focusing on the types of questions that most physicians consistently judged as being important seemed more relevant and is summarized in Figure 3. One hundred and twenty two of 487 questions met our 80% threshold. To improve interpretability results are summarized as a function of broad task and CanMEDS role’s categories. Of these 122 questions, approximately 25% fell into the *determine cause* category, whereas 20% and 3% respectively, were located in *initiate management* and *differentiate between* categories. In regard to broad CanMEDS roles categories 22% of the 122 questions focused on the *professional* role whereas 16%, 10%, 2%, 2% respectively related to the *communicator*, *collaborator*, *scholar*, and *manager* types of questions.

National Survey Physician percent of questions 80% overall importance at the supervised level

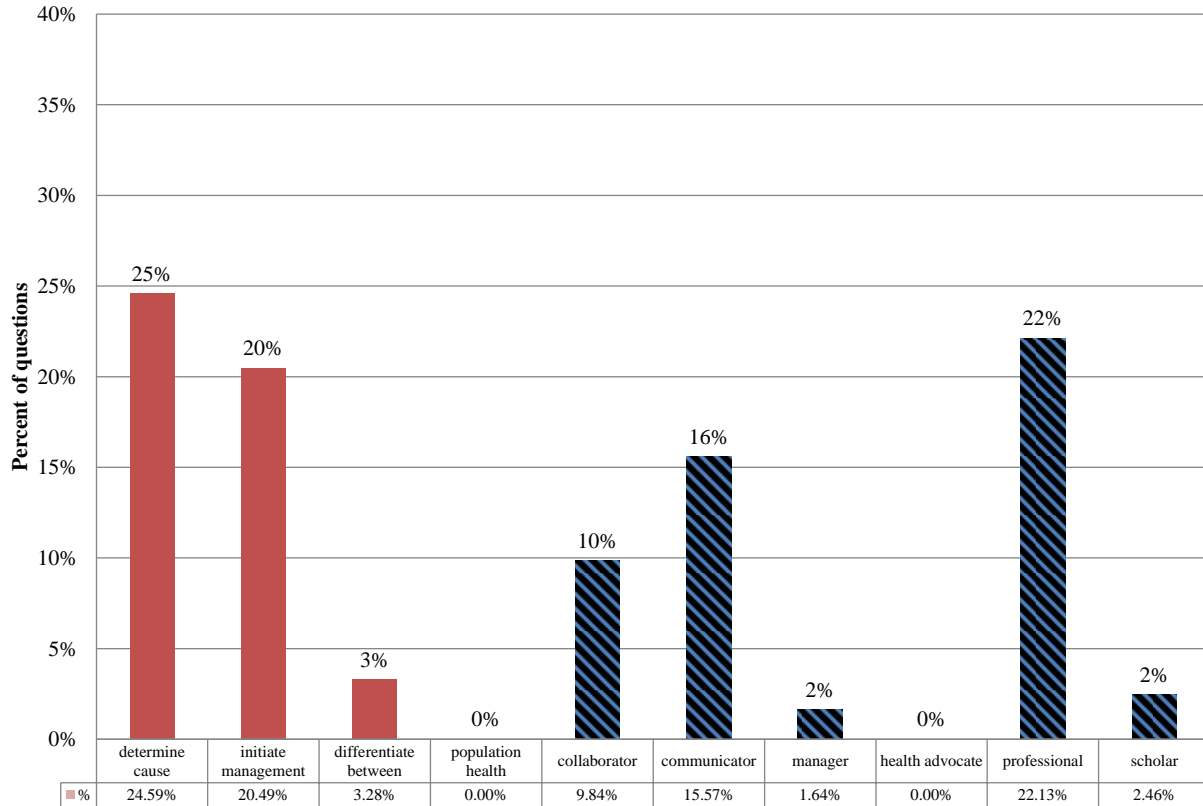


Figure 3. Percent of questions 80% overall importance at the supervised level.

Collapsing these percentages across medical expert categories (*determine cause, initiate management, differentiate between*), 59 of the 122 questions (48%) were judged to be important by the 80% threshold (see Figure 3 bars in red and solid). Collapsing these percentages across the non-medical expert questions (*collaborator, communicator, manager, professional, and scholar*), 63 of the 122 questions (52%) were judged to be important (see Figure 3 bars shown in blue and diagonal pattern).

Unsupervised

There were 327 (out of 487) questions at the *unsupervised* decision point where at least 80% of the respondents thought the knowledge, skill or attitude was “Very/Extremely

Important". The important medical expert questions for the *unsupervised* decision point are shown in Table 6. Because many of the medical expert questions were asked separately for *determine cause* and *initiate management*, the same question can appear more than once in the table. For example, one of the highest ranking medical expert question was for *initiate management, upper gastrointestinal bleed* with 100.0% overall importance, with a lower overall importance ranking for *determine cause, upper gastrointestinal bleed* (95.4%).

Table 6. Medical expert questions important at the unsupervised level.

%	Category	Question	%	Category	Question
100.0	initiate management	Upper gastrointestinal bleed	95.8	differentiate between	Syncope and seizures
99.3	initiate management	Coma	95.5	determine cause	Hyperglycemia
99.3	initiate management	Neonatal distress	95.4	initiate management	Chest injuries
99.2	initiate management	Respiratory distress in children	95.4	initiate management	Abdominal distention
99.2	initiate management	Cardiac arrest	95.4	determine cause	Upper gastrointestinal bleed
99.2	determine cause	Chest pain	95.4	initiate management	Head trauma
99.2	initiate management	Chest pain	95.4	determine cause	Cardiac arrest
98.5	determine cause	Coma	95.2	initiate management	Anaphylaxis
98.5	initiate management	Dyspnea	95.2	differentiate between	Ascites and bowel obstruction
98.5	initiate management	Shock	95.0	initiate management	Acute kidney injury
98.4	differentiate between	Cardiac and non-cardiac chest pain	94.9	initiate management	Hyperkalemia
97.8	initiate management	Seizures/Epilepsy	94.7	initiate management	Generalized edema
97.7	determine cause	Shock	94.7	initiate management	Hyperglycemia
97.7	determine cause	Fever in a child	94.7	determine cause	Anemia
97.6	initiate management	Venothromboembolic diseases	94.7	initiate management	Anemia
97.1	determine cause	Delirium	94.6	determine cause	Hypertension in pregnancy
97.0	determine cause	Neonatal distress	94.6	initiate management	Dying patient
97.0	determine cause	Dyspnea	94.6	initiate management	Syncope
97.0	determine cause	Respiratory distress in children	94.6	initiate management	Trauma
97.0	initiate management	Lower gastrointestinal bleed	94.4	determine cause	Hematuria
96.9	initiate management	Child abuse	94.4	determine cause	Acute hemiplegia/Hemisensory loss
96.8	initiate management	Paralysis	94.1	initiate management	Urinary obstruction
96.8	differentiate between	Benign and more serious causes of cough	94.1	initiate management	Suicidal behavior
96.3	initiate management	Poisoning	94.1	initiate management	Hypoxemia
96.2	determine cause	Acute vision loss	93.9	determine cause	Generalized edema
96.1	initiate management	Fever in a child	93.9	initiate management	Hypoglycemia
96.1	determine cause	Child abuse	93.9	initiate management	Hypertension in pregnancy
96.1	initiate management	Delirium	93.4	initiate management	Hypokalemia
96.0	determine cause	Paralysis	93.3	determine cause	Jaundice

% = percentage of respondents who indicated "Very/Extremely Important"

Table 6. (continued) *Medical expert questions important at the unsupervised level.*

%	Category	Question	%	Category	Question
93.3	initiate management	Jaundice	90.8	initiate management	Vaginal bleeding
93.3	determine cause	Urinary obstruction	90.7	initiate management	Spinal trauma
93.2	determine cause	Hypoglycemia	90.4	initiate management	Urticaria/Angioedema
93.1	determine cause	Head trauma	90.4	initiate management	Acute diarrhea
93.1	initiate management	Acute vision loss	90.4	determine cause	Abdominal injuries
93.0	initiate management	Headache	90.4	initiate management	Abdominal injuries
93.0	determine cause	Syncope	90.4	determine cause	Vomiting
92.7	initiate management	Elder abuse	90.3	determine cause	Elder abuse
92.7	initiate management	Adult abuse	90.3	initiate management	Abnormalities of white blood cells
92.7	determine cause	Hyperkalemia	90.3	initiate management	Neonatal jaundice
92.5	determine cause	Acidemia	90.3	determine cause	Abnormal liver enzymes/Function
92.5	initiate management	Acidemia	90.2	determine cause	Suicidal behavior
92.4	determine cause	Abdominal distention	90.1	determine cause	Abdominal mass
92.3	differentiate between	Benign and malignant skin tumors	90.0	determine cause	Hypotension
92.2	determine cause	Headache	89.9	determine cause	Trauma
92.2	determine cause	Hypoxemia	89.9	initiate management	Spontaneous abortion
92.0	initiate management	Acute hemiplegia/Hemisensory loss	89.9	initiate management	Preterm labor
91.9	differentiate between	Generalized and localized edema	89.9	initiate management	Dysuria, urinary frequency and urgency
91.6	determine cause	Pleural effusion	89.7	determine cause	Poisoning
91.6	determine cause	Lower gastrointestinal bleed	89.4	determine cause	Failure to thrive in a child or infant
91.5	determine cause	Hemoptysis	89.3	determine cause	Palpitations
91.5	initiate management	Hypertension	89.2	determine cause	Mood disorders
91.5	initiate management	Vascular injury	89.1	initiate management	Scrotal pain
91.2	initiate management	Vomiting	89.1	initiate management	Polyuria
91.2	initiate management	Hematuria	89.1	determine cause	Vaginal bleeding
90.8	initiate management	Diarrhea in children	89.1	initiate management	Sexually transmitted infections
90.8	determine cause	Hypertension	88.8	determine cause	Acute diarrhea
90.8	initiate management	Hypotension	88.8	initiate management	Fractures and dislocations
90.8	determine cause	Acute kidney injury	88.7	determine cause	Abnormalities of white blood cells
90.8	initiate management	Scrotal mass	88.7	determine cause	Neck mass

% = percentage of respondents who indicated "Very/Extremely Important"

Table 6. (continued) *Medical expert questions important at the unsupervised level.*

%	Category	Question	%	Category	Question
88.7	initiate management	Neck mass	86.1	initiate management	Fever of unknown origin
88.5	initiate management	Hemoptysis	86.1	initiate management	Skin wounds
88.4	initiate management	Drowning	86.0	determine cause	Hypokalemia
88.2	determine cause	Scrotal mass	86.0	initiate management	Hyponatremia
88.2	initiate management	Mood disorders	85.7	determine cause	Preterm labor
88.2	determine cause	Dizziness	85.7	initiate management	Urinary tract injuries
88.1	initiate management	Abnormal liver enzymes/Function	85.7	determine cause	Dysuria, urinary frequency and urgency
88.0	initiate management	Prevention of pregnancy	85.7	determine cause	Sexually transmitted infections
87.9	differentiate between	Malignant testicular tumors and other scrotal masses	85.6	determine cause	Falls
87.9	initiate management	Failure to thrive in a child or infant	85.6	initiate management	Hand or wrist injuries
87.8	initiate management	Dysphagia	85.5	populationhealth	Make appropriate recommendations for patients and exposed populations to minimize their health risks
87.8	determine cause	Chest injuries	85.5	initiate management	Palpitations
87.6	initiate management	Hyperthermia	85.5	determine cause	Diarrhea in children
87.4	determine cause	Scrotal pain	85.5	initiate management	Weight gain
87.4	determine cause	Polyuria	85.3	determine cause	Seizures/Epilepsy
87.0	initiate management	Pleural effusion	85.2	determine cause	Dysphagia
87.0	initiate management	Abdominal mass	85.2	initiate management	Facial injuries
87.0	determine cause	Pelvic mass	85.1	differentiate between	Primary psychotic disorder and delirium
86.6	initiate management	Localized pain	84.9	determine cause	Urinary tract injuries
86.4	initiate management	Bone or joint injury	84.8	initiate management	Movement disorders
86.4	initiate management	Falls	84.6	initiate management	Breast lump
86.3	determine cause	Adult abuse	84.5	determine cause	Vascular injury
86.3	determine cause	Psychosis	84.5	initiate management	Polydipsia
86.3	initiate management	Psychosis	84.4	initiate management	Diplopia
86.3	initiate management	Dizziness	84.3	determine cause	Alkalemia
86.1	determine cause	Hyperthermia	84.3	determine cause	Lymphadenopathy

% = percentage of respondents who indicated "Very/Extremely Important"

Table 6. (continued) *Medical expert questions important at the unsupervised level.*

%	Category	Question	%	Category	Question
84.3	initiate management	Hypercoagulable state	81.6	initiate management	Hypotonic infant
84.1	determine cause	Localized edema	81.6	initiate management	Adult urinary incontinence
84.1	initiate management	Localized edema	81.6	initiate management	Intrauterine growth restriction
84.0	initiate management	Limp in a child	81.6	initiate management	Burns
84.0	determine cause	Fractures and dislocations	81.5	initiate management	Hypertension in children
84.0	initiate management	Pelvic mass	81.5	initiate management	Vaginal discharge/Pruritis
83.8	initiate management	Hypernatremia	81.4	initiate management	Recurrent fever
83.8	determine cause	Hyponatremia	81.4	initiate management	Hypothermia
83.7	determine cause	Fever of unknown origin	81.4	determine cause	Anxiety
83.7	determine cause	Spinal trauma	81.4	determine cause	Addictions/Substance abuse
83.6	initiate management	Alkalemia	81.4	determine cause	Easy bruising or bleeding
83.6	determine cause	Neonatal jaundice	81.1	determine cause	Frailty in the elderly
83.6	determine cause	Localized pain	80.9	determine cause	Abnormal heart sounds and murmurs
83.3	initiate management	Anxiety	80.9	initiate management	Constipation in children
83.2	initiate management	Mediastinal mass	80.9	determine cause	Urticaria/Angioedema
83.2	initiate management	Chronic diarrhea	80.9	determine cause	Hypernatremia
83.2	determine cause	Amenorrhea/Oligomenorrhea	80.9	determine cause	Facial injuries
83.2	initiate management	Ataxia	80.8	determine cause	Movement disorders
83.2	determine cause	Chronic kidney disease	80.7	determine cause	Weight gain
83.2	initiate management	Chronic kidney disease	80.6	determine cause	Recurrent fever
83.1	determine cause	Breast lump	80.6	determine cause	Skin wounds
83.0	initiate management	Nerve injury	80.4	determine cause	Dementia
82.8	initiate management	Lymphadenopathy	80.4	initiate management	Addictions/Substance abuse
82.7	differentiate between	Benign and malignant musculoskeletal lumps or masses	80.2	determine cause	Mediastinal mass
82.6	initiate management	Frailty in the elderly	80.1	initiate management	Sexually concerned patient
82.4	determine cause	Chronic diarrhea	80.0	determine cause	Eye redness
82.4	initiate management	Musculoskeletal lump/mass	80.0	initiate management	Eye redness
82.4	initiate management	Easy bruising or bleeding	80.0	determine cause	Adult urinary incontinence
82.3	determine cause	Hypertension in children	80.0	determine cause	Pelvic pain
82.3	differentiate between	Vertigo and other causes	80.0	determine cause	Limp in a child
82.1	initiate management	Fussing or crying child	80.0	determine cause	Ataxia

% = percentage of respondents who indicated "Very/Extremely Important"

For questions within the non-medical expert category at the *unsupervised* level, the percent overall importance from highest to lowest is shown in Table 7. One of the highest ranking non-medical expert questions was *Recognize when a clinical situation exceeds his/her expertise* with 100% of the respondents indicating that this is “Very/ Extremely Important”.

Table 7. *Non-medical expert questions important at the unsupervised level.*

%	Category	Question
100.0	professional	Recognize his/her personal limitations of competence
100.0	professional	Conduct ongoing personal education to maintain competence
100.0	professional	Assume responsibility for his/her own actions
100.0	professional	Observe appropriate and legal boundaries in relationships with patients
100.0	professional	Recognize his/her personal limits when asked to assume responsibilities
100.0	communicator	Communicate effectively in challenging patient care situations
100.0	communicator	Manage patient information disclosure appropriately in accordance with legal requirements
99.6	collaborator	Recognize when a clinical situation exceeds his/her expertise
99.3	collaborator	Identify the patient care service needed when one has reached his/her own limits of expertise
99.2	scholar	Demonstrate self-awareness when assessing his/her own competence
99.2	collaborator	Respect the views of team members and patients/families
99.2	professional	Demonstrate professional behaviors to ensure patient safety
99.2	professional	Practice the profession with due regard for basic human rights
99.2	professional	Abide by the profession's ethical codes, rules and regulations
99.2	communicator	Communicate complete and truthful information in accordance with the patient's rights
99.2	communicator	Write prescriptions legibly and correctly
99.2	professional	Maintain competence according to the requirements of his/her specialty
99.2	collaborator	Carry out recommended care or ensure appropriate transfer of care
99.2	collaborator	Act responsibly and expeditiously when other health professionals request assistance
99.0	professional	Access available support services if professional competence is compromised
98.9	communicator	Treat patients with respect while attending to comfort and concerns
98.8	collaborator	Work effectively within the health care system
98.7	professional	Follow up with patients to ensure good patient care
98.5	communicator	Retain comprehensive, legible and up-to-date documentation
98.5	communicator	Establish a common understanding about care plans with the patient
98.5	professional	Maintain confidentiality of professional documents
98.5	collaborator	Include the patient and family as part of the care team
98.5	collaborator	Share patient information appropriately while respecting confidentiality
98.4	communicator	Demonstrate appropriate interviewing skills including clarifying, bridging and summarizing
98.0	communicator	Use language appropriate to the patient's understanding
98.0	communicator	Appropriately communicate to meet the requirements for obtaining informed consent

% = percentage of respondents who indicated “Very/Extremely Important”

Table 7. (continued) *Non-medical expert questions important at the unsupervised level.*

%	Category	Question
98.0	collaborator	Demonstrate clear written and oral communication with colleagues and patients/families
98.0	professional	Practice without impairment from substance, ill health or other incapacity
97.9	professional	Evaluate his/her personal professional competence
97.8	communicator	Communicate clearly and effectively to patients the reasons for a referral and the consultant's role
97.8	professional	Communicate with colleagues clearly, in a timely and respectful manner
97.7	professional	Acknowledge the contributions and expertise of colleagues
97.7	communicator	Disclose errors and adverse events in a prompt and truthful manner
97.7	professional	Refrain from abusing power relationships within the health care system
97.7	communicator	Appropriately manage the communication of confidential medical information
97.5	professional	Maintain required credentials and licensure
97.3	professional	Use current ethical and legal aspects of informed consent and mental capacity
97.1	professional	Demonstrate compassion and dedication to the welfare of patients and society
97.0	communicator	Communicate information to third parties in a timely, legal and ethical manner
96.9	communicator	Seek consent from competent patients before involving family members
96.8	communicator	Be an active and engaged listener
96.6	communicator	Adapt patient communication to the clinical context
96.3	manager	Implement self-improvement and maintenance of competence strategies
96.2	scholar	Recognize that clinical practice can be complicated, uncertain and ambiguous
95.7	communicator	Be aware of the impact of his/her non-verbal communication
95.2	collaborator	Demonstrate respect for each team member's expertise
95.2	communicator	Recognize how personal and cultural context can influence a patient's choices
95.0	manager	Prudently use all health care resources without bias or discrimination
94.9	professional	Be aware of the potential bias that can influence judgment
94.9	collaborator	Resolve conflict through negotiation and collaboration
94.9	collaborator	Ensure that a consultation takes place at an appropriate time and place
94.4	manager	Manage time efficiently and effectively
94.1	collaborator	Seek help and advice when necessary to resolve conflict among care team members
93.8	collaborator	Ensure that a consultant's advice is received promptly
93.8	professional	Teach others in a constructive manner
93.6	professional	Support colleagues in the prevention and disclosure of errors and adverse events
93.6	professional	Evaluate continuously the quality of care while striving for improvements
93.1	collaborator	Implement care protocols with effective communication to other team members
92.4	communicator	Determine a patient's concerns, beliefs, expectations and illness experience
92.4	professional	Demonstrate an appreciation of the interdependence of health professionals
92.3	professional	Recognize that self-respect is part of respect for others
92.3	manager	Recognize the need for a balance between his/her professional and personal life
92.0	scholar	Use relevant research findings for patient care
91.9	professional	Be responsive to feedback from colleagues
91.8	professional	Support team members in reaching consensus goals
91.8	collaborator	Recognize and reduce tensions among care team members
91.5	professional	Engage consultants as necessary when faced with complex ethical issues

% = percentage of respondents who indicated "Very/Extremely Important"

Table 7. (continued) *Non-medical expert questions important at the unsupervised level.*

%	Category	Question
91.2	professional	Avoid situations in which there may be a professional conflict of interest
91.2	collaborator	Agree on and implement team members' roles and responsibilities
91.1	scholar	Evaluate his/her personal learning outcomes
90.8	communicator	Facilitate communication between a patient and family while respecting patient autonomy
90.8	health advocate	Describe the important determinants of health and risks for illness
90.2	professional	Report a colleague's inappropriate actions or behaviors
89.9	professional	Advocate for the health of individuals, communities and populations
89.6	manager	Balance individual and societal needs in an ethical manner
89.6	professional	Recognize that attitudes to confidentiality may vary among different people
89.6	professional	Know the legal scope of practice of health care professional colleagues
88.8	scholar	Explain what is required to maintain clinical competence
88.7	manager	Describe the management obligations, responsibilities and regulations in office practice
88.6	scholar	Develop a plan for his/her personal learning
88.6	communicator	Find an appropriate decision-maker for a patient when necessary
88.2	professional	Acknowledge the contributions of colleagues
88.0	collaborator	Explain the scope of his/her practice
87.4	scholar	Critically appraise research findings for patient care
86.6	manager	Use information technology to facilitate patient care and practice
86.2	professional	Communicate to patients the limits of professional confidentiality
86.0	manager	Communicate with patients and/or families about how his/her practice operates
84.0	health advocate	Describe barriers to health care access for populations at risk
83.5	collaborator	Describe the impact of his/her personal values, biases and professional limits on collaboration
81.4	scholar	Teach patients, trainees and colleagues

% = percentage of respondents who indicated "Very/Extremely Important"

Given that each question was rated by each survey respondent at both decision points; hypothetically, all survey questions could have been rated as "Very/Extremely Important". However, since not all questions met our criterion of greater than 80%, focusing on the types of questions that most physicians consistently judged as being important seemed more relevant and is summarized in Figure 4. Three hundred and twenty seven of 487 questions met our 80% threshold. To improve interpretability results are summarized as a function of broad task and CanMEDS role's categories. Of these 327 questions, approximately 31% fell into the *determine cause* category, whereas 36% and 3% respectively, were located in *initiate management* and

differentiate between categories. In regard to broad CanMEDS roles categories 11% of the 327 questions focused on the *professional* role whereas 7%, 6%, 2%, 2%, 1% respectively related to the *communicator, collaborator, scholar, manager, and health advocate* types of questions.

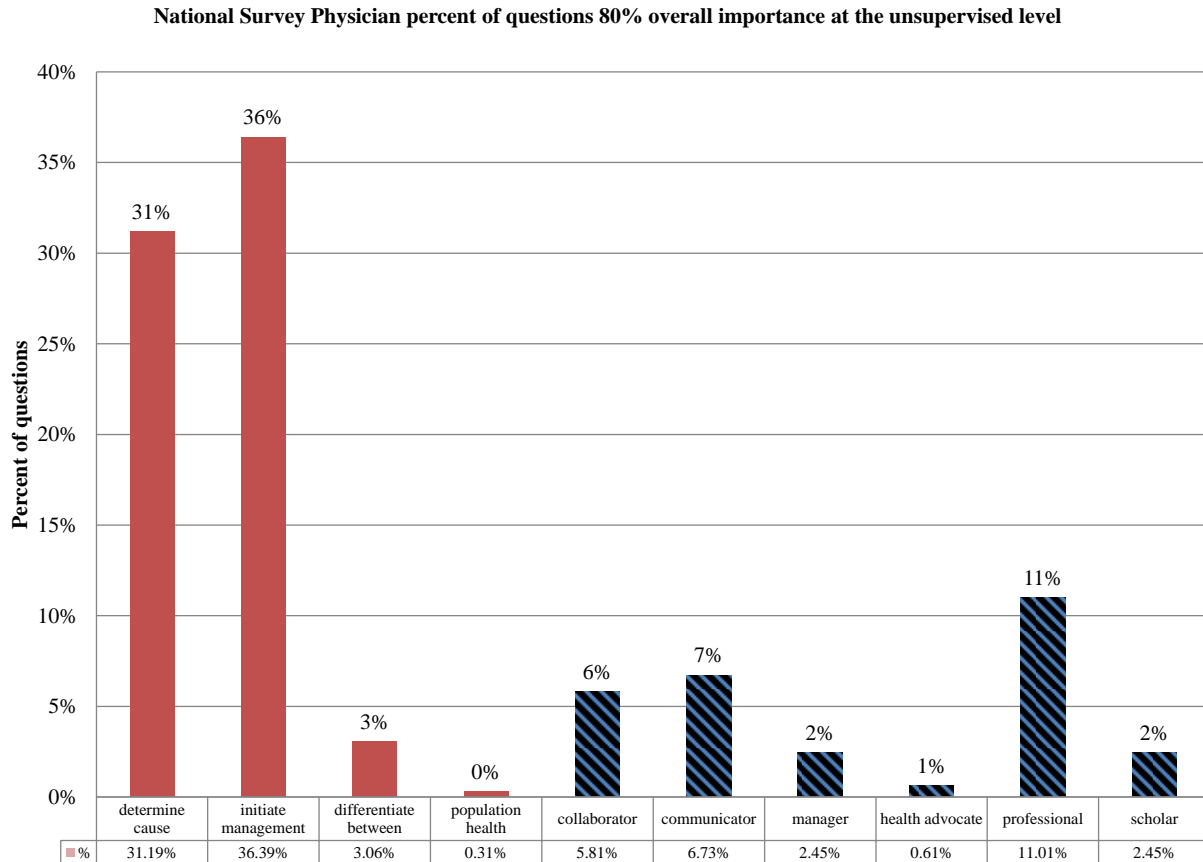


Figure 4. Percent of questions 80% or greater overall importance at the *unsupervised* level.

Collapsing these percentages across medical expert categories (*determine cause, initiate management, differentiate between*), 232 of the 327 questions (71%) were judged to be important by the 80% threshold (see Figure 4 bars in red and solid). Collapsing these percentages across the non-medical expert questions (*collaborator, communicator, manager, professional, health advocate and scholar*), 95 of the 327 questions (29%) were judged to be important (see Figure 4 bars shown in blue and diagonal pattern).

National Survey – Comparing Physicians decision points

Medical expert

Because all of the survey questions were presented for both decision points, *supervised* and *unsupervised* a comparison of the importance for each question is provided here. As previously outlined in Figure 4, at the *unsupervised* level 232 medical expert questions were judged to be “Very/Extremely Important” by 80% or more of the physician respondents. In contrast, there were only 59 questions that were judged to be “Very/Extremely Important” by 80% or more of the respondents at the *supervised* level. All of these 59 questions at the *supervised* level were deemed to be “Very/Extremely Important” at the *unsupervised* level. However, the percentages of physicians who judged the importance of specific questions as “Very/Extremely Important” at these two decision points differed slightly. For example, the highest rated medical expert question at the *unsupervised* level was *initiate management, upper gastrointestinal bleed* with 100% overall importance. At the *supervised* level this question was endorsed as being “Very/Extremely Important” by 91.6% of physician respondents. Table 8 shows the medical expert questions ranked from highest to lowest at the *unsupervised* level. Importance values for the two decision points are shown for each of the 232 questions. Additionally, questions that did not meet our or exceed 80% threshold for the *supervised* level are shown italicized and bold (i.e., these are questions deemed more important at the *unsupervised* level). The values for the *supervised* level are shown for comparison purposes only.

Table 8. *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
91.6	100.0	initiate management	Upper gastrointestinal bleed
85.8	99.3	initiate management	Coma
81.3	99.3	initiate management	Neonatal distress
95.4	99.2	determine cause	Chest pain
95.4	99.2	initiate management	Cardiac arrest
94.6	99.2	initiate management	Chest pain
89.3	99.2	initiate management	Respiratory distress in children
90.3	98.5	determine cause	Coma
90.8	98.5	initiate management	Dyspnea
91.5	98.5	initiate management	Shock
94.4	98.4	differentiate between	Cardiac and non-cardiac chest pain
86.8	97.8	initiate management	Seizures/Epilepsy
86.0	97.7	determine cause	Fever in a child
93.1	97.7	determine cause	Shock
87.3	97.6	initiate management	Venothromboembolic diseases
89.2	97.1	determine cause	Delirium
83.6	97.0	determine cause	Neonatal distress
92.4	96.9	determine cause	Dyspnea
90.1	96.9	determine cause	Respiratory distress in children
81.4	96.9	initiate management	Child abuse
83.2	96.9	initiate management	Lower gastrointestinal bleed
83.9	96.8	differentiate between	Benign and more serious causes of cough
76.6	96.8	<i>initiate management</i>	<i>Paralysis</i>
76.5	96.3	<i>initiate management</i>	<i>Poisoning</i>
85.4	96.2	determine cause	Acute vision loss
82.2	96.1	determine cause	Child abuse
81.4	96.1	initiate management	Delirium
82.9	96.1	initiate management	Fever in a child
87.1	96.0	determine cause	Paralysis
83.3	95.8	differentiate between	Syncope and seizures
86.4	95.5	determine cause	Hyperglycemia
88.5	95.4	determine cause	Cardiac arrest
82.4	95.4	determine cause	Upper gastrointestinal bleed
67.2	95.4	<i>initiate management</i>	<i>Abdominal distention</i>
72.5	95.4	<i>initiate management</i>	<i>Chest injuries</i>
82.3	95.4	initiate management	Head trauma
87.1	95.2	differentiate between	Ascites and bowel obstruction
94.0	95.2	initiate management	Anaphylaxis
79.8	95.0	<i>initiate management</i>	<i>Acute kidney injury</i>
88.2	94.9	initiate management	Hyperkalemia
88.6	94.7	determine cause	Anemia
79.5	94.7	<i>initiate management</i>	<i>Anemia</i>
68.2	94.7	<i>initiate management</i>	<i>Generalized edema</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Table 8. (continued) *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
82.6	94.7	initiate management	Hyperglycemia
80.8	94.6	determine cause	Hypertension in pregnancy
68.7	94.6	<i>initiate management</i>	<i>Dying patient</i>
78.3	94.6	<i>initiate management</i>	<i>Syncope</i>
75.2	94.6	<i>initiate management</i>	<i>Trauma</i>
84.8	94.4	determine cause	Acute hemiplegia/Hemisensory loss
72.8	94.4	<i>determine cause</i>	<i>Hematuria</i>
86.3	94.1	initiate management	Hypoxemia
85.3	94.1	initiate management	Suicidal behavior
84.9	94.1	initiate management	Urinary obstruction
84.8	93.9	determine cause	Generalized edema
84.8	93.9	initiate management	Hypoglycemia
76.9	93.8	<i>initiate management</i>	<i>Hypertension in pregnancy</i>
82.4	93.4	initiate management	Hypokalemia
83.6	93.3	determine cause	Jaundice
82.4	93.3	determine cause	Urinary obstruction
62.7	93.3	<i>initiate management</i>	<i>Jaundice</i>
85.6	93.2	determine cause	Hypoglycemia
82.3	93.1	determine cause	Head trauma
73.1	93.1	<i>initiate management</i>	<i>Acute vision loss</i>
87.6	93.0	determine cause	Syncope
77.4	93.0	<i>initiate management</i>	<i>Headache</i>
51.6	92.7	<i>initiate management</i>	<i>Adult abuse</i>
57.3	92.7	<i>initiate management</i>	<i>Elder abuse</i>
79.4	92.6	<i>determine cause</i>	<i>Hyperkalemia</i>
82.1	92.5	determine cause	Acidemia
72.4	92.5	<i>initiate management</i>	<i>Acidemia</i>
76.3	92.4	<i>determine cause</i>	<i>Abdominal distention</i>
61.9	92.3	<i>differentiate between</i>	<i>Benign and malignant skin tumors</i>
87.0	92.2	determine cause	Headache
88.2	92.2	determine cause	Hypoxemia
77.6	92.0	<i>initiate management</i>	<i>Acute hemiplegia/Hemisensory loss</i>
75.0	91.9	<i>differentiate between</i>	<i>Generalized and localized edema</i>
78.6	91.6	<i>determine cause</i>	<i>Lower gastrointestinal bleed</i>
67.2	91.6	<i>determine cause</i>	<i>Pleural effusion</i>
78.5	91.5	<i>determine cause</i>	<i>Hemoptysis</i>
66.9	91.5	<i>initiate management</i>	<i>Hypertension</i>
63.6	91.5	<i>initiate management</i>	<i>Vascular injury</i>
57.6	91.2	<i>initiate management</i>	<i>Hematuria</i>
65.6	91.2	<i>initiate management</i>	<i>Vomiting</i>
83.2	90.8	determine cause	Acute kidney injury
63.8	90.8	<i>determine cause</i>	<i>Hypertension</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Table 8. (continued) *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
68.7	90.8	<i>initiate management</i>	<i>Diarrhea in children</i>
77.7	90.8	<i>initiate management</i>	<i>Hypotension</i>
68.1	90.8	<i>initiate management</i>	<i>Scrotal mass</i>
81.5	90.8	initiate management	Vaginal bleeding
66.7	90.7	<i>initiate management</i>	<i>Spinal trauma</i>
77.6	90.4	<i>determine cause</i>	<i>Abdominal injuries</i>
68.8	90.4	<i>determine cause</i>	<i>Vomiting</i>
67.2	90.4	<i>initiate management</i>	<i>Abdominal injuries</i>
70.4	90.4	<i>initiate management</i>	<i>Acute diarrhea</i>
77.2	90.4	<i>initiate management</i>	<i>Urticaria/Angioedema</i>
68.7	90.3	<i>determine cause</i>	<i>Abnormal liver enzymes/Function</i>
66.1	90.3	<i>determine cause</i>	<i>Elder abuse</i>
69.4	90.3	<i>initiate management</i>	<i>Abnormalities of white blood cells</i>
61.2	90.3	<i>initiate management</i>	<i>Neonatal jaundice</i>
85.3	90.2	determine cause	Suicidal behavior
64.9	90.1	<i>determine cause</i>	<i>Abdominal mass</i>
83.1	90.0	determine cause	Hypotension
65.1	89.9	<i>determine cause</i>	<i>Trauma</i>
80.7	89.9	initiate management	Dysuria, urinary frequency and urgency
78.2	89.9	<i>initiate management</i>	<i>Preterm labor</i>
68.1	89.9	<i>initiate management</i>	<i>Spontaneous abortion</i>
71.3	89.7	<i>determine cause</i>	<i>Poisoning</i>
72.7	89.4	<i>determine cause</i>	<i>Failure to thrive in a child or infant</i>
70.2	89.3	<i>determine cause</i>	<i>Palpitations</i>
71.6	89.2	<i>determine cause</i>	<i>Mood disorders</i>
84.0	89.1	determine cause	Vaginal bleeding
67.2	89.1	<i>initiate management</i>	<i>Polyuria</i>
74.8	89.1	<i>initiate management</i>	<i>Scrotal pain</i>
77.3	89.1	<i>initiate management</i>	<i>Sexually transmitted infections</i>
70.4	88.8	<i>determine cause</i>	<i>Acute diarrhea</i>
66.4	88.8	<i>initiate management</i>	<i>Fractures and dislocations</i>
76.6	88.7	<i>determine cause</i>	<i>Abnormalities of white blood cells</i>
72.2	88.7	<i>determine cause</i>	<i>Neck mass</i>
53.9	88.7	<i>initiate management</i>	<i>Neck mass</i>
69.2	88.5	<i>initiate management</i>	<i>Hemoptysis</i>
58.1	88.4	<i>initiate management</i>	<i>Drowning</i>
67.6	88.2	<i>determine cause</i>	<i>Dizziness</i>
71.4	88.2	<i>determine cause</i>	<i>Scrotal mass</i>
61.8	88.2	<i>initiate management</i>	<i>Mood disorders</i>
53.7	88.1	<i>initiate management</i>	<i>Abnormal liver enzymes/Function</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Table 8. (continued) *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
61.4	88.0	<i>initiate management</i>	<i>Prevention of pregnancy</i>
68.5	87.9	<i>differentiate between</i>	<i>Malignant testicular tumors and other scrotal masses</i>
59.1	87.9	<i>initiate management</i>	<i>Failure to thrive in a child or infant</i>
60.3	87.8	<i>determine cause</i>	<i>Chest injuries</i>
50.4	87.8	<i>initiate management</i>	<i>Dysphagia</i>
63.6	87.6	<i>initiate management</i>	<i>Hyperthermia</i>
77.3	87.4	<i>determine cause</i>	<i>Polyuria</i>
75.6	87.4	<i>determine cause</i>	<i>Scrotal pain</i>
48.1	87.0	<i>determine cause</i>	<i>Pelvic mass</i>
45.0	87.0	<i>initiate management</i>	<i>Abdominal mass</i>
55.7	87.0	<i>initiate management</i>	<i>Pleural effusion</i>
48.5	86.6	<i>initiate management</i>	<i>Localized pain</i>
56.8	86.4	<i>initiate management</i>	<i>Bone or joint injury</i>
59.8	86.4	<i>initiate management</i>	<i>Falls</i>
59.7	86.3	<i>determine cause</i>	<i>Adult abuse</i>
70.6	86.3	<i>determine cause</i>	<i>Psychosis</i>
57.8	86.3	<i>initiate management</i>	<i>Dizziness</i>
62.7	86.3	<i>initiate management</i>	<i>Psychosis</i>
66.7	86.0	<i>determine cause</i>	<i>Hyperthermia</i>
72.1	86.0	<i>determine cause</i>	<i>Hypokalemia</i>
58.9	86.0	<i>initiate management</i>	<i>Fever of unknown origin</i>
77.2	86.0	<i>initiate management</i>	<i>Hyponatremia</i>
54.3	86.0	<i>initiate management</i>	<i>Skin wounds</i>
79.0	85.7	<i>determine cause</i>	<i>Dysuria, urinary frequency and urgency</i>
71.4	85.7	<i>determine cause</i>	<i>Preterm labor</i>
79.0	85.7	<i>determine cause</i>	<i>Sexually transmitted infections</i>
52.9	85.7	<i>initiate management</i>	<i>Urinary tract injuries</i>
69.7	85.6	<i>determine cause</i>	<i>Falls</i>
56.8	85.6	<i>initiate management</i>	<i>Hand or wrist injuries</i>
58.0	85.5	<i>determine cause</i>	<i>Diarrhea in children</i>
56.0	85.5	<i>population health</i>	<i>Make appropriate recommendations for patients and exposed populations to minimize their health risks</i>
55.7	85.5	<i>initiate management</i>	<i>Palpitations</i>
51.6	85.5	<i>initiate management</i>	<i>Weight gain</i>
75.0	85.3	<i>determine cause</i>	<i>Seizures/Epilepsy</i>
69.6	85.2	<i>determine cause</i>	<i>Dysphagia</i>
56.5	85.2	<i>initiate management</i>	<i>Facial injuries</i>
63.1	85.1	<i>differentiate between</i>	<i>Primary psychotic disorder and delirium</i>
54.6	84.9	<i>determine cause</i>	<i>Urinary tract injuries</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Table 8. (continued) *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
40.0	84.8	<i>initiate management</i>	<i>Movement disorders</i>
57.7	84.6	<i>initiate management</i>	<i>Breast lump</i>
58.1	84.5	<i>determine cause</i>	<i>Vascular injury</i>
51.2	84.5	<i>initiate management</i>	<i>Polydipsia</i>
64.9	84.3	<i>determine cause</i>	<i>Alkalemia</i>
66.4	84.3	<i>determine cause</i>	<i>Lymphadenopathy</i>
50.4	84.3	<i>initiate management</i>	<i>Diplopia</i>
63.7	84.3	<i>initiate management</i>	<i>Hypercoagulable state</i>
63.6	84.1	<i>determine cause</i>	<i>Localized edema</i>
51.5	84.1	<i>initiate management</i>	<i>Localized edema</i>
66.4	84.0	<i>determine cause</i>	<i>Fractures and dislocations</i>
54.4	84.0	<i>initiate management</i>	<i>Limp in a child</i>
39.7	84.0	<i>initiate management</i>	<i>Pelvic mass</i>
68.4	83.8	<i>determine cause</i>	<i>Hyponatremia</i>
70.6	83.8	<i>initiate management</i>	<i>Hypernatremia</i>
65.9	83.7	<i>determine cause</i>	<i>Fever of unknown origin</i>
62.8	83.7	<i>determine cause</i>	<i>Spinal trauma</i>
60.4	83.6	<i>determine cause</i>	<i>Localized pain</i>
67.9	83.6	<i>determine cause</i>	<i>Neonatal jaundice</i>
56.7	83.6	<i>initiate management</i>	<i>Alkalemia</i>
54.9	83.3	<i>initiate management</i>	<i>Anxiety</i>
56.8	83.2	<i>determine cause</i>	<i>Amenorrhea/Oligomenorrhea</i>
53.8	83.2	<i>determine cause</i>	<i>Chronic kidney disease</i>
56.8	83.2	<i>initiate management</i>	<i>Ataxia</i>
38.4	83.2	<i>initiate management</i>	<i>Chronic diarrhea</i>
48.7	83.2	<i>initiate management</i>	<i>Chronic kidney disease</i>
33.6	83.2	<i>initiate management</i>	<i>Mediastinal mass</i>
63.8	83.1	<i>determine cause</i>	<i>Breast lump</i>
40.3	82.9	<i>initiate management</i>	<i>Nerve injury</i>
51.5	82.8	<i>initiate management</i>	<i>Lymphadenopathy</i>
47.0	82.7	<i>differentiate between</i>	<i>Benign and malignant musculoskeletal lumps or masses</i>
43.2	82.6	<i>initiate management</i>	<i>Frailty in the elderly</i>
52.8	82.4	<i>determine cause</i>	<i>Chronic diarrhea</i>
58.8	82.4	<i>initiate management</i>	<i>Easy bruising or bleeding</i>
46.4	82.4	<i>initiate management</i>	<i>Musculoskeletal lump/mass</i>
65.4	82.3	<i>determine cause</i>	<i>Hypertension in children</i>
61.3	82.3	<i>differentiate between</i>	<i>Vertigo and other causes</i>
49.3	82.1	<i>initiate management</i>	<i>Fussing or crying child</i>
39.2	81.6	<i>initiate management</i>	<i>Adult urinary incontinence</i>
52.9	81.6	<i>initiate management</i>	<i>Hypotonic infant</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Table 8. (continued) *Medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
50.4	81.6	<i>initiate management</i>	<i>Intrauterine growth restriction</i>
63.1	81.5	<i>initiate management</i>	<i>Burns</i>
50.8	81.5	<i>initiate management</i>	<i>Hypertension in children</i>
57.1	81.5	<i>initiate management</i>	<i>Vaginal discharge/Pruritis</i>
57.8	81.4	<i>determine cause</i>	<i>Addictions/Substance abuse</i>
60.8	81.4	<i>determine cause</i>	<i>Anxiety</i>
63.7	81.4	<i>determine cause</i>	<i>Easy bruising or bleeding</i>
49.6	81.4	<i>initiate management</i>	<i>Hypothermia</i>
47.3	81.4	<i>initiate management</i>	<i>Recurrent fever</i>
55.3	81.1	<i>determine cause</i>	<i>Frailty in the elderly</i>
55.0	80.9	<i>determine cause</i>	<i>Abnormal heart sounds and murmurs</i>
64.3	80.9	<i>determine cause</i>	<i>Facial injuries</i>
64.0	80.9	<i>determine cause</i>	<i>Hypernatremia</i>
64.7	80.9	<i>determine cause</i>	<i>Urticaria/Angioedema</i>
40.5	80.9	<i>initiate management</i>	<i>Constipation in children</i>
50.4	80.8	<i>determine cause</i>	<i>Movement disorders</i>
59.7	80.6	<i>determine cause</i>	<i>Recurrent fever</i>
55.0	80.6	<i>determine cause</i>	<i>Skin wounds</i>
55.6	80.6	<i>determine cause</i>	<i>Weight gain</i>
53.9	80.4	<i>determine cause</i>	<i>Dementia</i>
50.0	80.4	<i>initiate management</i>	<i>Addictions/Substance abuse</i>
36.6	80.2	<i>determine cause</i>	<i>Mediastinal mass</i>
44.6	80.1	<i>initiate management</i>	<i>Sexually concerned patient</i>
51.2	80.0	<i>determine cause</i>	<i>Adult urinary incontinence</i>
64.0	80.0	<i>determine cause</i>	<i>Ataxia</i>
65.2	80.0	<i>determine cause</i>	<i>Eye redness</i>
58.4	80.0	<i>determine cause</i>	<i>Limp in a child</i>
56.0	80.0	<i>determine cause</i>	<i>Pelvic pain</i>
53.9	80.0	<i>initiate management</i>	<i>Eye redness</i>

% = percentage of respondents who indicated “Very/Extremely Important”

Non-medical expert

As shown in Figure 4, 95 questions were judged to be “Very/Extremely Important” by 80% or more of the respondents at the *unsupervised* level. In contrast, only 63 questions were judged to be “Very/Extremely Important” by 80% or more of the respondents at the *supervised* level. Note that these 63 questions were also appeared at the *unsupervised* level. However, the percentages of physicians who thought specific questions were “Very/Extremely Important” is

slightly different at the two decision points. For example, the highest percent overall importance on the *unsupervised* list was *communicator, communicate effectively in challenging patient care situations* with 100% overall importance. At the *supervised* level the percent overall importance was 87.9%. Table 9 shows the non-medical expert questions ranked from highest to lowest at the *unsupervised* level. Importance values for the two decision points are shown for each of the 95 questions. Additionally, questions that were not deemed important at the *supervised* level (<80% indicating “Very/ Extremely Important”) are italicized and bolded (i.e., these are questions deemed more important at the *unsupervised* level). The values for the *supervised* level are shown for comparison purposes.

Table 9. *Non- medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
87.9	100.0	communicator	Communicate effectively in challenging patient care situations
89.5	100.0	communicator	Manage patient information disclosure appropriately in accordance with legal requirements
96.0	100.0	professional	Assume responsibility for his/her own actions
87.0	100.0	professional	Conduct ongoing personal education to maintain competence
98.4	100.0	professional	Observe appropriate and legal boundaries in relationships with patients
98.7	100.0	professional	Recognize his/her personal limitations of competence
98.4	100.0	professional	Recognize his/her personal limits when asked to assume responsibilities
99.6	99.6	collaborator	Recognize when a clinical situation exceeds his/her expertise
93.3	99.3	collaborator	Identify the patient care service needed when one has reached his/her own limits of expertise
95.8	99.2	collaborator	Act responsibly and expeditiously when other health professionals request assistance
95.8	99.2	collaborator	Carry out recommended care or ensure appropriate transfer of care
97.7	99.2	collaborator	Respect the views of team members and patients/families
96.8	99.2	communicator	Communicate complete and truthful information in accordance with the patient's rights
96.0	99.2	communicator	Write prescriptions legibly and correctly
98.4	99.2	professional	Abide by the profession's ethical codes, rules and regulations
96.0	99.2	professional	Demonstrate professional behaviors to ensure patient safety
90.8	99.2	professional	Maintain competence according to the requirements of his/her specialty
96.0	99.2	professional	Practice the profession with due regard for basic human rights
90.7	99.2	scholar	Demonstrate self-awareness when assessing his/her own competence
97.7	99.0	professional	Access available support services if professional competence is compromised
98.2	98.9	communicator	Treat patients with respect while attending to comfort and concerns
84.8	98.8	collaborator	Work effectively within the health care system
89.2	98.7	professional	Follow up with patients to ensure good patient care
87.1	98.5	collaborator	Include the patient and family as part of the care team

% = percentage of respondents who indicated "Very/Extremely Important"

Table 9. (continued) *Non- medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
95.5	98.5	collaborator	Share patient information appropriately while respecting confidentiality
88.8	98.5	communicator	Establish a common understanding about care plans with the patient
90.4	98.5	communicator	Retain comprehensive, legible and up-to-date documentation
98.5	98.5	professional	Maintain confidentiality of professional documents
87.2	98.4	communicator	Demonstrate appropriate interviewing skills including clarifying, bridging and summarizing
96.0	98.0	collaborator	Demonstrate clear written and oral communication with colleagues and patients/families
91.2	98.0	communicator	Appropriately communicate to meet the requirements for obtaining informed consent
97.1	98.0	communicator	Use language appropriate to the patient's understanding
98.0	98.0	professional	Practice without impairment from substance, ill health or other incapacity
86.6	97.9	professional	Evaluate his/her personal professional competence
86.0	97.8	communicator	Communicate clearly and effectively to patients the reasons for a referral and the consultant's role
97.8	97.8	professional	Communicate with colleagues clearly, in a timely and respectful manner
97.7	97.7	communicator	Appropriately manage the communication of confidential medical information
92.4	97.7	communicator	Disclose errors and adverse events in a prompt and truthful manner
87.1	97.7	professional	Acknowledge the contributions and expertise of colleagues
93.0	97.7	professional	Refrain from abusing power relationships within the health care system
84.9	97.5	professional	Maintain required credentials and licensure
90.2	97.3	professional	Use current ethical and legal aspects of informed consent and mental capacity
97.1	97.1	professional	Demonstrate compassion and dedication to the welfare of patients and society
85.1	97.0	communicator	Communicate information to third parties in a timely, legal and ethical manner
93.1	96.9	communicator	Seek consent from competent patients before involving family members
94.4	96.8	communicator	Be an active and engaged listener
91.2	96.6	communicator	Adapt patient communication to the clinical context
77.8	96.3	manager	Implement self-improvement and maintenance of competence strategies

% = percentage of respondents who indicated "Very/Extremely Important"

Table 9. (continued) *Non- medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
82.6	96.2	scholar	Recognize that clinical practice can be complicated, uncertain and ambiguous
89.3	95.7	communicator	Be aware of the impact of his/her non-verbal communication
92.8	95.2	collaborator	Demonstrate respect for each team member's expertise
76.8	95.2	communicator	<i>Recognize how personal and cultural context can influence a patient's choices</i>
84.9	95.0	manager	Prudently use all health care resources without bias or discrimination
77.2	94.9	collaborator	<i>Resolve conflict through negotiation and collaboration</i>
89.0	94.9	professional	Be aware of the potential bias that can influence judgment
79.7	94.8	collaborator	<i>Ensure that a consultation takes place at an appropriate time and place</i>
69.6	94.4	manager	<i>Manage time efficiently and effectively</i>
88.2	94.1	collaborator	Seek help and advice when necessary to resolve conflict among care team members
80.8	93.8	collaborator	Ensure that a consultant's advice is received promptly
77.5	93.8	professional	<i>Teach others in a constructive manner</i>
73.6	93.6	professional	<i>Evaluate continuously the quality of care while striving for improvements</i>
77.6	93.6	professional	<i>Support colleagues in the prevention and disclosure of errors and adverse events</i>
76.5	93.1	collaborator	<i>Implement care protocols with effective communication to other team members</i>
86.6	92.4	communicator	Determine a patient's concerns, beliefs, expectations and illness experience
90.2	92.4	professional	Demonstrate an appreciation of the interdependence of health professionals
92.3	92.3	professional	Recognize that self-respect is part of respect for others
82.2	92.2	manager	Recognize the need for a balance between his/her professional and personal life
62.4	92.0	scholar	<i>Use relevant research findings for patient care</i>
96.3	91.9	professional	Be responsive to feedback from colleagues
46.3	91.8	collaborator	<i>Recognize and reduce tensions among care team members</i>
70.9	91.8	professional	<i>Support team members in reaching consensus goals</i>
83.7	91.5	professional	Engage consultants as necessary when faced with complex ethical issues

% = percentage of respondents who indicated "Very/Extremely Important"

Table 9. (continued) *Non- medical expert important across both decision points.*

% supervised	% unsupervised	Category	Question
64.7	91.2	<i>collaborator</i>	<i>Agree on and implement team members' roles and responsibilities</i>
78.4	91.2	<i>professional</i>	<i>Avoid situations in which there may be a professional conflict of interest</i>
82.9	91.1	<i>scholar</i>	Evaluate his/her personal learning outcomes
74.0	90.8	<i>communicator</i>	<i>Facilitate communication between a patient and family while respecting patient autonomy</i>
68.8	90.8	<i>health advocate</i>	<i>Describe the important determinants of health and risks for illness</i>
79.4	90.2	<i>professional</i>	<i>Report a colleague's inappropriate actions or behaviors</i>
71.4	89.9	<i>professional</i>	<i>Advocate for the health of individuals, communities and populations</i>
75.2	89.6	<i>manager</i>	<i>Balance individual and societal needs in an ethical manner</i>
63.4	89.6	<i>professional</i>	<i>Know the legal scope of practice of health care professional colleagues</i>
80.5	89.6	<i>professional</i>	Recognize that attitudes to confidentiality may vary among different people
54.2	88.8	<i>scholar</i>	<i>Explain what is required to maintain clinical competence</i>
27.2	88.7	<i>manager</i>	<i>Describe the management obligations, responsibilities and regulations in office practice</i>
76.9	88.6	<i>scholar</i>	<i>Develop a plan for his/her personal learning</i>
66.4	88.5	<i>communicator</i>	<i>Find an appropriate decision-maker for a patient when necessary</i>
86.8	88.2	<i>professional</i>	Acknowledge the contributions of colleagues
64.0	88.0	<i>collaborator</i>	<i>Explain the scope of his/her practice</i>
57.9	87.4	<i>scholar</i>	<i>Critically appraise research findings for patient care</i>
78.2	86.6	<i>manager</i>	<i>Use information technology to facilitate patient care and practice</i>
75.8	86.2	<i>professional</i>	<i>Communicate to patients the limits of professional confidentiality</i>
52.9	86.0	<i>manager</i>	<i>Communicate with patients and/or families about how his/her practice operates</i>
54.3	84.0	<i>health advocate</i>	<i>Describe barriers to health care access for populations at risk</i>
62.6	83.5	<i>collaborator</i>	<i>Describe the impact of his/her personal values, biases and professional limits on collaboration</i>
49.0	81.4	<i>scholar</i>	<i>Teach patients, trainees and colleagues</i>

% = percentage of respondents who indicated "Very/Extremely Important"

Questions judged not to be “Very/Extremely Important”

Supervised

There were 146 out of 487 medical expert questions at the *supervised* decision point where less than 50% of the respondents thought the knowledge, skill or attitude reflected in the question was “Very/Extremely Important”. The “less-important” medical expert questions are shown in Table 10 at the *supervised* decision point. Because many of the medical expert questions were asked separately for *determine cause* and *initiate management* the same question can appear more than once on the table.

Table 10. *Medical expert questions not as important at the supervised level.*

%	Category	Question	%	Category	Question
50.0	initiate management	Addictions/Substance abuse	45.5	determine cause	Altered sensation
49.6	initiate management	Hypothermia	45.2	initiate management	Hernias
49.6	initiate management	Ear pain	45.1	determine cause	Calcium disorders
49.3	initiate management	Fussing or crying child	45.0	initiate management	Abdominal mass
48.8	determine cause	Nausea	44.8	initiate management	Polyarthralgia
48.8	initiate management	Pelvic pain	44.8	determine cause	Lower back pain
48.8	initiate management	Oligoarthralgia	44.8	initiate management	Lower back pain
48.7	initiate management	Chronic kidney disease	44.8	determine cause	Neck pain
48.5	initiate management	Localized pain	44.6	initiate management	Sexually concerned patient
48.5	determine cause	Breast discharge	44.6	population health	Discuss implications of different cultural perspectives and the related impact on planning, delivery and evaluation of services
48.5	initiate management	Cough	43.5	determine cause	Rhinorrhea
48.1	determine cause	Pelvic mass	43.2	initiate management	Amenorrhea/Oligomenorrhea
48.0	determine cause	Fecal incontinence	43.2	initiate management	Frailty in the elderly
48.0	initiate management	Nausea	42.9	differentiate between	Ataxia and other gait abnormalities
47.3	initiate management	Recurrent fever	42.7	initiate management	Sudden infant death syndrome
47.2	determine cause	Polyarthralgia	42.4	determine cause	Elevated hemoglobin
47.0	differentiate between	Benign and malignant musculoskeletal lumps or masses	42.3	initiate management	Breast discharge
46.5	determine cause	Hypothermia	41.2	initiate management	Abnormal heart sounds and murmurs
46.4	differentiate between	Normal and pathological growth pattern	41.2	initiate management	Constipation
46.4	determine cause	Oligoarthralgia	41.1	determine cause	Drowning
46.4	initiate management	Musculoskeletal lump/mass	40.5	initiate management	Constipation in children
46.4	population health	Describe factors that affect the health status of a population	40.3	differentiate between	Primary and secondary dysmenorrhea
46.3	determine cause	Proteinuria	40.3	initiate management	Nerve injury
46.1	determine cause	Hearing loss/Deafness	40.2	initiate management	Fatigue

% = percentage of respondents who indicated "Very/Extremely Important"

Table 10. (continued) *Medical expert questions not as important at the supervised level.*

%	Category	Question	%	Category	Question
40.0	initiate management	Mouth problems (oral infections, carcinomas)	36.1	population health	Recognize implications of environmental hazards at the individual and population level
40.0	initiate management	Neck pain	35.1	determine cause	Constipation in children
40.0	initiate management	Movement disorders	35.1	initiate management	Abnormal serum lipids
39.7	initiate management	Pelvic mass	34.8	initiate management	Rhinorrhea
39.5	initiate management	Insect stings and bites	34.3	determine cause	Abnormal serum lipids
39.2	initiate management	Adult urinary incontinence	34.3	initiate management	Altered sensation
39.2	determine cause	Dysmenorrhea	33.9	initiate management	Hearing loss/Deafness
38.7	differentiate between	Conductive and sensorineural causes of hearing dysfunction	33.8	determine cause	Skin rash
38.6	population health	Explain how variation in the determinants of health in different populations affects their health status	33.6	initiate management	Mediastinal mass
38.4	initiate management	Chronic diarrhea	33.3	determine cause	Speech disorders
38.4	initiate management	Fecal incontinence	33.0	initiate management	Strabismus/Amblyopia
38.2	initiate management	Dementia	32.8	initiate management	Non-articular musculoskeletal pain
38.2	determine cause	Sudden infant death syndrome	32.5	population health	Describe the health status of a defined population
38.2	determine cause	Constipation	32.3	determine cause	Chronic vision loss
37.5	initiate management	Proteinuria	32.1	initiate management	Work-related health issues
37.5	initiate management	Menopause	32.0	initiate management	Dysmenorrhea
37.4	determine cause	Strabismus/Amblyopia	31.6	initiate management	Skin tumors and ulcers
37.3	determine cause	Developmental delay or disabilities	31.1	initiate management	Abnormal pubertal development
37.1	initiate management	Elevated hemoglobin	31.0	differentiate between	Normal and abnormal pubertal development
37.0	determine cause	Abnormal pubertal development	30.4	determine cause	Non-articular musculoskeletal pain
36.6	determine cause	Mediastinal mass	30.4	determine cause	Eating disorders

% = percentage of respondents who indicated "Very/Extremely Important"

Table 10. (continued) *Medical expert questions not as important at the supervised level.*

%	Category	Question	%	Category	Question
29.6	determine cause	Erectile dysfunction	25.8	determine cause	Dysmorphic features
29.6	determine cause	Tinnitus	25.6	initiate management	Premenstrual syndrome
29.5	population health	Discuss challenges to accessing health services, and how individuals may rely on not commonly used traditional or alternative health services	25.4	determine cause	Neuropathic pain
28.9	population health	Be familiar with population health-related economic evaluations and issues related to resource allocation	25.3	population health	Discuss unique roles provided by government, social agencies or special groups in providing services to the population
28.8	determine cause	Genetic or congenital conditions	25.2	determine cause	Uterine prolapse, pelvic relaxation
28.8	determine cause	Language disorders	24.2	initiate management	Speech disorders
28.7	determine cause	Skin tumors and ulcers	23.5	determine cause	Pruritus
28.4	initiate management	Developmental delay or disabilities	23.5	initiate management	Pruritus
28.3	population health	Describe approaches to assessing quality of care and methods of quality improvement	23.5	initiate management	Language disorders
27.9	determine cause	Insect stings and bites	23.2	initiate management	Enuresis
27.7	initiate management	Uterine prolapse, pelvic relaxation	23.2	initiate management	Erectile dysfunction
27.5	determine cause	Attention and learning disorders or problems at school	23.1	initiate management	Neuropathic pain
27.5	initiate management	Eating disorders	23.1	initiate management	Chronic vision loss
27.2	initiate management	Skin rash	23.1	determine cause	Gynecomastia
26.4	determine cause	Enuresis	22.6	differentiate between	Speech disorders and language disorders
26.1	determine cause	Generalized pain disorders	21.6	initiate management	Generalized pain disorders

% = percentage of respondents who indicated "Very/Extremely Important"

Table 10. (continued) *Medical expert questions not as important at the supervised level.*

%	Category	Question	%	Category	Question
21.3	initiate management	Sleep disorders	16.4	initiate management	Complex regional pain syndrome
21.2	determine cause	Hirsutism	15.9	initiate management	Hirsutism
20.6	initiate management	Attention and learning disorders or problems at school	15.4	determine cause	Abnormal stature
20.0	initiate management	Gynecomastia	15.2	initiate management	Dysmorphic features
20.0	initiate management	Infertility	13.6	initiate management	Ambiguous genitalia
19.9	determine cause	Sleep disorders	13.2	initiate management	Abnormal stature
19.2	determine cause	Infertility	12.0	determine cause	Ambiguous genitalia
19.1	initiate management	Tinnitus	10.4	determine cause	Alopecia
18.9	initiate management	Genetic or congenital conditions	10.4	initiate management	Smell/Taste dysfunction
18.1	population health	Work collaboratively with local, provincial and national agencies/governments to address concerns at a population level	8.7	initiate management	Alopecia
16.5	determine cause	Smell/Taste dysfunction	7.2	initiate management	Nail disorders
16.4	determine cause	Complex regional pain syndrome	6.4	determine cause	Nail disorders

% = percentage of respondents who indicated "Very/Extremely Important"

For questions within the non-medical expert category, the percent overall importance from highest to lowest, at the *supervised* level, is shown in Table 11. The lowest ranking non-medical expert question is *Explain the principles of the Canada Health Act* with only 15.7% of the physicians indicating that this is “Very/ Extremely Important”.

Table 11. *Non- medical expert questions not as important at the supervised level.*

%	Category	Question
49.0	scholar	Teach patients, trainees and colleagues
48.0	professional	Maintain a professional relationship with third parties (e.g., insurance companies, pharmaceuticals)
46.3	collaborator	Recognize and reduce tensions among care team members
45.5	manager	Describe the roles of physicians in the Canadian health care system
38.4	health advocate	Describe the Canadian health care laws and regulations
32.8	professional	Act in a leadership capacity to improve the health care system
32.7	health advocate	Describe key issues that could improve Canadian health care
31.3	collaborator	Contribute to multidisciplinary and other institutional committees
27.2	manager	Describe the management obligations, responsibilities and regulations in office practice
26.5	manager	Describe the Canadian health care system at all levels
26.1	scholar	Disseminate new research findings as they become available
23.9	health advocate	Describe public policies and trends that can affect health care
15.7	manager	Explain the principles of the Canada Health Act

% = percentage of respondents who indicated “Very/Extremely Important”

Unsupervised

There were 20 out of 487 questions at the *unsupervised* decision point where less than 50% of the respondents thought the knowledge, skill or attitude reflected in the question was “Very/Extremely Important”. At the *unsupervised* decision point, the medical expert and non-medical expert questions are shown in Table 12. The lowest ranking medical expert question was *determine cause, nail disorders*, with 24% of respondent indicating this was “Very/Extremely Important”. The lowest ranking non-medical expert question was *Explain the*

principles of the Canada Health Act with only 42% of the physicians indicating this was “Very/Extremely Important”.

Table 12. *Medical and non- medical expert questions not as important at the unsupervised level.*

%	Category	Question
49.3	determine cause	Pruritus
49.3	determine cause	Sleep disorders
48.5	determine cause	Abnormal stature
48.5	determine cause	Complex regional pain syndrome
48.5	determine cause	Dysmorphic features
48.5	determine cause	Gynecomastia
48.0	determine cause	Eating disorders
46.3	initiate management	Abnormal stature
45.5	initiate management	Dysmorphic features
45.5	initiate management	Hirsutism
45.4	initiate management	Gynecomastia
43.5	initiate management	Smell/Taste dysfunction
41.6	initiate management	Ambiguous genitalia
38.3	determine cause	Smell/Taste dysfunction
34.4	determine cause	Ambiguous genitalia
33.0	initiate management	Alopecia
29.6	determine cause	Alopecia
24.8	initiate management	Nail disorders
24.0	determine cause	Nail disorders
42.2	manager	Explain the principles of the Canada Health Act

National Survey – Summary of Public results

As indicated above, the details of the responses to specific non-expert role questions on the public survey will not be detailed in this report. However, broad themes and characteristics were identified from the responses to the open ended survey question: *As a person who has used services provided by the Canadian health system, what are the most important competencies that a physician should have? Please write your response in the textbox below.* Ipsos Reid coded the responses to this question and the results are summarized here.

Four broad themes were identified and are illustrated in Table 13. This table shows the number and percentage of respondents who endorsed these four themes. The percentage was

calculated based on the number of responses coded in each category. For example, 748 out of 1,102 (67.9%) respondents had part of their text response coded for the category of **Doctor's Skills/Characteristics**. Because the opened ended responses could be coded in more than one category, the percentages do not add up to 100%.

Table 13. *Theme categories for public responses.*

Theme Categories	N	%
Doctor's Skills/Characteristics	748	67.9
Knowledge/Credibility	673	61.1
Centers on the patients concern/Patient centered	416	37.7
Concerns around time/timing	119	10.8
Nothing	4	0.4
Other	101	9.1

Within the broad theme categories, responses were coded more specifically. Table 14 shows the themes, sub-themes and the corresponding number and percent of respondents who endorsed the concept. The percentage was calculated based on the number of responses coded in each category out of the total number of respondents, 1,102. In addition, the percent by sub-theme was calculated by taking the total number of responses coded by sub-theme divided by the total number of responses within the theme category.

Table 14. *Themes and sub-themes obtained from the public survey.*

Theme	Sub-theme	N	%	% sub-themes
Doctor's Skills/Characteristics	Listens well/a good listener	261	23.7	21.5
	Compassionate/ caring/ empathy	234	21.2	19.3
	Good communication	213	19.4	17.5
	Understanding	89	8.0	7.3
	Competent	86	7.8	7.1
	Honesty	73	6.6	6.0
	Respectful/polite	69	6.2	5.7
	Professional	58	5.3	4.8
	Patience	23	2.1	1.9
	Ethical	23	2.1	1.9
	Friendly	20	1.8	1.6
	Efficiency	19	1.7	1.6
	Integrity	15	1.4	1.2
	Trustworthy	11	1.0	0.9
	Confidence	11	1.0	0.9
Sensitivity	9	0.8	0.7	
Total		1214		100.0
Knowledge/Credibility	Broad knowledge base/ a wide range of medical understanding	271	24.6	37.5
	Experience	261	23.7	36.1
	Up to date training/ knowledge base	125	11.4	17.3
	Knows their limitations	65	5.9	9.0
Total		722		100.0

Table 14. (continued) *Themes and sub-themes for the public.*

Theme	Sub-theme	N	%	% sub-themes
Centers on the patients concern/Patient centered	Refers to specialist/ another doctor if needed	91	8.3	17.7
	Find a solution/ treat the patient	88	7.9	17.1
	Diagnostic skills	78	7.1	15.2
	Make patients feel comfortable/ good bedside manner	40	3.7	7.8
	Using non-medical language/layman's terms	33	3.0	6.4
	Offer alternative options (drugs/referrals)	33	3.0	6.4
	Follow up	32	2.9	6.2
	Availability/accessibility	31	2.8	6.0
	Maintain confidentiality	19	1.8	3.7
	Thorough	17	1.6	3.3
	Know the patient's history	16	1.5	3.1
	Non-judgmental	14	1.2	2.7
	Asks questions	14	1.2	2.7
	Show interest	8	0.7	1.6
Total		514		100.0
Concerns around time/timing	Spending the appropriate time with the patient/ not rushing	100	9.1	81.3
	Reasonable wait times	23	2.1	18.7
Total		123		100.0

Discussion and Conclusions

The focus of this report was to summarize the main results in the MCC national survey. Three general conclusions can be drawn from these results. First, there was complete overlap in survey questions that were deemed to be “Very/Extremely Important” across the *supervised* and *unsupervised* decision points. Second, non-medical expert type questions were proportionally as important as the medical expert type questions suggesting that *collaborator*, *communicator*, and *professionalism* are important to assess at this first decision point. Third, the Ipsos Reid data suggest that members of the public believe that physicians need to communicate and be professional..

The comparison of the questions that were considered “Very/Extremely Important” by at least 80% of respondents indicates that the KSAs important at the first decision point (entering *supervised* practice) are also considered important for the second decision point (entering *unsupervised* practice) (see Figure 5 for graphic of the overlap).

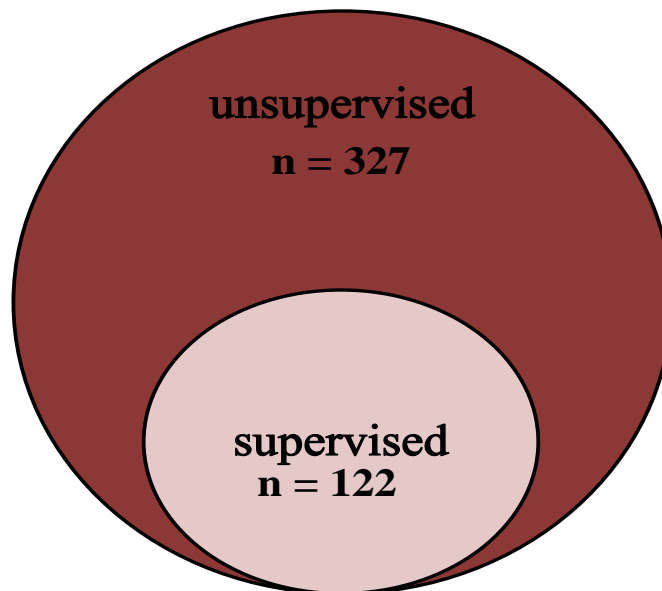


Figure 5. Overlap between *supervised* and *unsupervised* for all questions.

For the medical expert questions slightly more emphasis was placed on the *determine cause* questions at the *supervised* decision point, whereas emphasis was placed on *initiate management* at the *unsupervised* decision point. This demonstrates the continuum in the acquisition of KSAs between the two decision points for physicians early in their careers.

Our results also clearly suggest that the MCC should be assessing both the medical expert and non-medical expert roles in its assessment. Survey respondents ranked the non-medical expert roles as important KSAs for physicians to possess. Notably they suggest that assessing these roles is critical prior to entry into *supervised* practice with an emphasis on the *collaborator*, *communicator*, and *professional* roles. . Thus, medical expert roles need to be supplemented by the assessment of non-medical expert role. This is also in keeping with the public survey data which places high importance on good communication and professionalism on the part of the physician

The results of this survey would indicate that as physicians progress through pre-clinical training, clerkship and into residency programs, the same KSAs are important and continue to grow to include a larger array of roles as they fully transition into independent practice. Taken as a whole these findings suggest that adopting a common blueprint framework to assess candidates at both decision points appears reasonable with some potential differences in weighting what appears on the tests.

References

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.

Frank, JR., Jabbour, M., et al. Eds. (2005). Report of the CanMEDS Phase IV Working Groups. Ottawa: The Royal College of Physicians and Surgeons of Canada. Retrieved from: http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/framework/the_7_canmeds_roles_e.pdf April 28, 2013

Medical Council of Canada (2009a). *Objectives for the Qualifying Examination (version 3.3.8)*. Retrieved from: http://apps.mcc.ca/Objectives_Online/objectives.pl?lang=english&loc=home April 3, 2013.

Medical Council of Canada (2009b). *Objectives for the Qualifying Examination: Contributors*. Retrieved from: http://apps.mcc.ca/Objectives_Online/objectives.pl?lang=english&loc=contributors April 15, 2013.

Raymond, M.R. (2001). Job analysis and the specification of content for licensure and certification examinations. *Applied Measurement in Education*, 14(4), 369-415.

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Appendix A

Table A1. *Full results across supervised and unsupervised decision points.*



Microsoft Excel
Worksheet