

Using Clinical Questions Asked by Primary Care Providers Through eConsults to Inform Continuing Professional Development

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Introduction: Continuing professional development (CPD) offerings should address the educational needs of health care providers. Innovative programs, such as electronic consultations (eConsults), provide unique educational opportunities for practice-based needs assessment. The purpose of this study is to assess whether CPD offerings match the needs of physicians by coding and comparing session content to clinical questions asked through eConsults.

Methods: This study analyzes questions asked by primary care providers between July 2011 and January 2015 using a service that allows specialists to provide consultation over a secure web-based server. The content of these questions was compared with the CPD courses offered in the area in which these primary care providers are practicing over a similar period (2012–2014). The clinical questions were categorized by the content area. The percentage of questions asked about each content area was calculated for each of the 12 specialties consulted. CPD course offerings were categorized using the same list of content areas. Percentage of minutes dedicated to each content area was calculated for each specialty. The percentage of questions asked and the percentage of CPD course minutes for each content area were compared.

Results: There were numerous congruencies and discrepancies between the proportion of questions asked about a given content area and the CPD minutes dedicated to it.

Discussion: Traditional needs assessment may underestimate the need to address topics that are frequently the subject of eConsults. Planners should recognize eConsult questions as a valuable source of practice-associated challenges that can identify professional development needs of physicians.

Keywords: continuing professional development, CPD needs assessment, electronic consultations, family practice/education

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Continuing professional development (CPD) is an essential aspect of responsible medical practice in which health care professionals maintain and improve their skills via lifelong learning. CPD sessions keep health care professionals up to date and maintain the highest standard of professional practice.¹ Across Canada and the United States, certification boards have adopted maintenance of certification (MOC) programs to help physicians stay current with best practices and continu-

ously enhance their professional practice.^{2,3} However, many physicians express dissatisfaction with current MOC programs.⁴ In a recent study, only 24% of surveyed physicians described MOC activities as relevant to their patients and only 12% felt that MOC practices were well integrated into their daily routines.⁴ This study occurred in the United States, in which the MOC program of the American Board of Medical Specialties has a four step process for continuing learning, perhaps focusing less on the process of lifelong learning and self-assessment (part II) and more on practice performance assessment (part IV), weighting the latter more heavily in evaluations. Moreover, in Canada, Legare et al⁵ identified in a recent study that most accredited CPD activities in their sample were not designed to promote clinical behavior change, as the focus was on understanding content, rather than putting knowledge into practice. MOC activities need to focus on relevant practice-based learning to promote change in behavior that may ultimately lead to improved patient care. If CPD activities are perceived to be of little value to physicians then they will not be engaged.⁶

Effective CME, which is a component of CPD, must match the interests and needs of the learner to the educational activities. We define CME as updating and reinforcing knowledge, whereas CPD not only includes content but also incorporates the personal, communication, managerial, and team-building skills needed for clinical practice.⁷ Current

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CPD needs assessments are either fraught with bias or rely on physicians to be accurate assessors of their own learning needs. These needs assessments are often conducted through surveys, focus groups, representative planning committees, or even the evaluation of previous activities. However, the common practice of surveying physicians is often flawed by poor response rates and internal bias.⁸ The convenience of anonymous online surveys can be outweighed by their tendency to overrepresent topical subject matter while underrepresenting physicians' actual learning needs.⁹ Furthermore, the quality of the results from self-reported surveys is connected to physicians' ability to assess their own learning needs.¹⁰ Davis et al¹¹ identify that physicians do not self-assess well and suggest that objective measures be used in conjunction with self-reported or subjective measures currently in use. Examples of objective measures are multisource feedback performance measures and clinical questions that physicians encounter in their daily care of patients. Knowing when to stop and ask questions is a form of "reflection in practice,"¹² which is a more accurate conception of self-assessment: "addressing emergent problems and continuously assessing whether one has sufficient skills knowledge to effectively solve the current problem."¹³ Therefore, point-of-care questions can be considered a more accurate expression of physician learning needs than traditional concepts of self-assessment.¹⁴

CPD should ideally reflect current patient-oriented challenges that are relevant within their community of practice and has the potential to change clinical practice.^{15–17} To be impactful, data need to be readily available to planners of CPD activities and to the presenters for incorporation into the learning activities. One of the largest target audiences of CPD are primary care providers (PCPs). To gain insight into the real challenges that PCPs face, clinical questions that arise from day-to-day practice have been used to inform CPD.^{18,19} This can be done by observing and identifying questions asked during or immediately after an encounter, through categorizing library search requests, or as done in one small study, through content of referral letters.^{18,20–23} Electronic consultation (eConsult) services, whereby providers directly communicate with each other through secure platforms provide a unique, readily available opportunity to capture questions that PCPs have and use them as a needs assessment for CPD. In fact, eConsult services are recently being recognized as prime resources for many educational opportunities.²⁴

To do this type of needs assessment the clinical scenarios and questions, PCPs are asking through eConsult need to be explored and then compared with CPD course refreshers. By doing so, eConsult questions may potentially provide some collective unperceived needs to guide the development of CPD. The objective of this study was to examine the content of questions asked through eConsult and compare it with the content covered by local CPD courses to identify a correlation between eConsult questions and CPD programs in a region.

METHODS

Ethical Considerations

The study was approved by Ottawa Health Sciences Network Research Ethics Board (Protocol #2009848-01H).

Setting

The Champlain BASE (Building Access to Specialists through eConsultation) eConsult service is a secure web-based application that allows a PCP to submit a patient-specific clinical question directly to a specialist. It was developed through collaboration between a primary care physician, a specialist, and information technology expertise from our health region, the Champlain Local Health Integrated Network located in Eastern Ontario, Canada. The eConsult service is a nonprofit service and is supported by a combination of regional, provincial, and grant funding. Specialists who use the service are remunerated at a rate of \$200 per hour prorated to the amount of time spent answering the case. PCPs can submit a fee code for completing eConsults and receive \$16. Initially launched in the Champlain Local Health Integration Network (LHIN), the eConsult service is currently undergoing expansion across Ontario.

CPD offerings at the University of Ottawa are informed by the recommendations of a planning committee and rotated to address learning gaps and provide a diversity of subject areas. A registration fee is charged for each course.

Design

Members of the research team and clinical specialty champions developed classification taxonomies for both clinical question type and content using well-known clinical taxonomies. Based on Bjerre et al¹⁸ study, questions were classified by "content" or subject area, using a framework of the International Classification for Primary Care, version 2 (ICPC-2).²⁵ Question "type"

TABLE 1.
Major Local CPD/CME Offerings From 2012–2014

Local CME Update Course	Date
Annual refresher day 2012	April 25–27, 2012
Annual refresher day 2013	April 24–25, 2013
Annual refresher day 2014	April 30–May 2, 2014
Cardio day 2012	September 21, 2012
Cardio day 2013	November 22, 2013
Care for the elderly	January 13, 2012
Chronic pain	June 8, 2012
Dementia care	June 7, 2013
Geriatric care	June 6, 2014
GIM update	January 18, 2013
Heart research	May 8, 2014
Hypertension	February 28, 2014
Champlain LHIN primary care	March 28, 2014
Lung cancer	October 18, 2013
Mental health update	January 17, 2014
Out of hospital emergency	December 6, 2013
Right heart	June 20–21, 2014
Selecting imaging	May 4, 2012
Skills day	September 12, 2014
Smoking cessation 2012	February 3–4, 2012
Smoking cessation 2014	January 24–25, 2014
Stroke update 2013	April 19, 2013
Stroke update 2014	June 13, 2014
Stroke education day	September 25, 2014
Toronto heart	June 19–21, 2014
Annual anesthesia winterlude	February 2–3, 2013
Women's health	October 3, 2014

CPD, continuing professional development; LHIN, Local Health Integration Network.

TABLE 2.
eConsult Cases Versus CPD Minutes

Specialty	Total eConsult Cases	Total CPD minutes
Cardiology	354	3645
Dermatology	132	360
Endocrinology	463	900
Gastroenterology	121	300
Hematology	436	255
Infectious disease	224	345
Nephrology	155	785
Obstetrics and Gynecology	394	2055
Pediatrics	422	990
Psychiatry	168	1935
Rheumatology	225	210
Urology	189	435
Total	3283	12,215

CPD, continuing professional development.

was adapted from the “taxonomy of generic clinical questions,” developed by Ely,²⁶ which uses 4 levels of classification and a total of 64 subcategories to identify the type of question being asked. The highest, overarching level consists of six broad areas, including diagnosis, treatment, management, epidemiology, nonclinical, and unclassified questions, were used for this study. Individual refinement of the content taxonomies for each specialty was required for this project because relying exclusively on the ICPC-2 was not specific enough. The result was a series of hybrid frameworks for each specialty that also included classification from the American Medical Association²⁷ and identification of recurring questions based on personal experience of specialists who have participated in the service.

The determined methodology for classifying the questions included identifying clinical champions for each specialty service. Two reviewers/clinical champions (one resident and one staff) classified questions on the basis the developed taxonomy frameworks, for the question type and content, which were built into the eConsult platform so that the clinician champions could efficiently retroactively classify the

questions. The content analysis of questions required two clinical champions to classify the first 20 questions for each specialty. If there was uncertainty or discrepancy as to the appropriate classification, it was discussed by the resident and staff so there was consensus on final coding. One clinical champion then continued to classify the remaining questions. In this study, 12 different specialties, encompassing 3283 completed eConsults were collected and organized by specialty and by their content classification code.^{28–34} Several specialties have published their findings. A completed consult consists of a clinical question or case presented by a referring clinician and a response or advice from a specialist service, plus any additional communication between the two providers.

The initial content analysis of questions required two clinical champions to classify the first 20 questions for each specialty. On consensus one clinical champion then continued to classify the remaining questions. For a detailed explanation of the methods used to classify point-of-care questions, see Bjerre et al.^{15,18}

By classifying the content of the questions asked by users of this system, we discerned the content areas for which PCPs require more information at the point of care. These data were then compared with the content of CPD courses local to the Champlain LHIN to explore whether the current CPD offerings reflect the real life clinical dilemmas providers face.

Data Set and Analysis

Clinical questions were deidentified in specialty services which had a minimum of 100 questions generated during the study period which began in July 2011 and finished in January 2015.

Classification of CPD Content

A list of all Mainpro + (level 1) and Royal College MOC Section 1 accredited CPD course offerings from the University of Ottawa, the major CPD provider in our region, from 2012 to 2014 was provided by the CPD office (Table 1). In addition to the list, especially for more recent CPD sessions, detailed content was made available to the research team on an encrypted memory stick. In a few cases, however, only

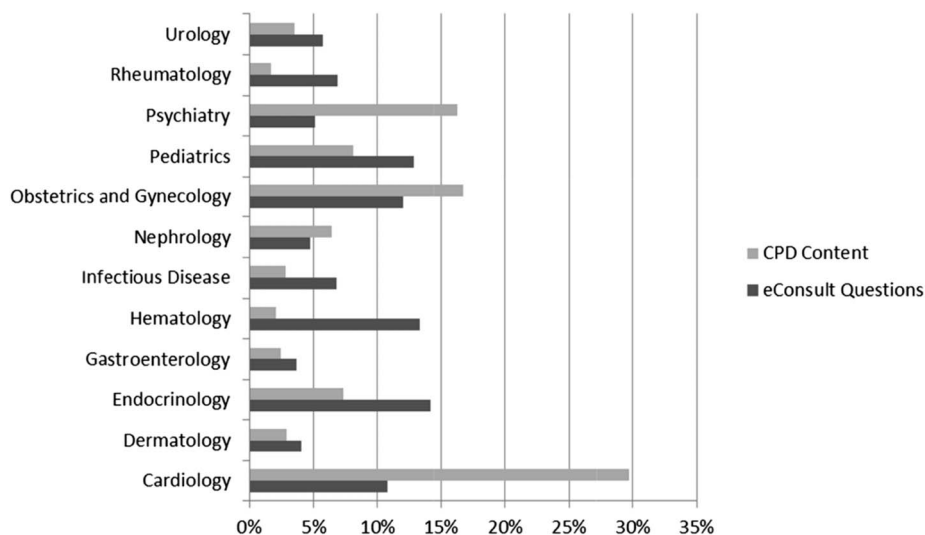


FIGURE 1. Content analysis of CPD course offerings. CPD, continuing professional development.

TABLE 3.
Top Five Content Areas

eConsults Top 5 Content Areas			CPD Activities		
	Cases	% of Cases	Top Content Areas	Minutes	% of Minutes
Cardiology					
Coronary artery disease	62	17.5	Heart failure	540	14.8
ECG	30	8.5	General	350	9.6
Lipid disorders	23	6.5	Atrial fibrillation-anticoagulation	290	8.0
Arrhythmia NOS	20	5.6	Acute coronary syndrome	245	6.7
Atrial fibrillation-anticoagulation	19	5.4	Investigations	220	6.0
Dermatology					
Dermatitis	15	11.3	Surgery of the skin questions	120	33.3
Infections	15	11.3	Actinic damage to the skin	60	16.7
Neoplasms	12	9.0	General	45	12.5
Pruritus	10	7.5	Other	45	12.5
Acneiform diseases	7	5.3	Dermatitis	30	8.3
Endocrinology					
Bone—osteoporosis/low BMD	63	13.6	Diabetes—glycemic control	300	33.3
Thyroid—hyper	57	12.3	Diabetes—complications	160	17.8
Diabetes—glycemic control	49	10.6	Bone—osteoporosis/low BMD	120	13.3
Thyroid—nodule/goiter	48	10.4	Obesity/weight gain	120	13.3
Thyroid—hypo	47	10.2	Testosterone replacement	80	8.9
Gastroenterology					
Liver—abnormal LFT's NOS	19	15.7	Anal fissure/perianal abscess	105	35.0
Gastroesophageal reflux disease	10	8.3	Fatty liver	105	35.0
Abdominal pain/cramps	8	6.6	Liver—abnormal LFT's NOS	60	20.0
Celiac disease/gluten sensitivity	7	5.8	Irritable bowel syndrome	30	10.0
Screening colonoscopy	7	5.8	—	—	—
Hematology					
Abnormal WBC—low neutrophil count	48	11.0	Abnormal WBC	105	41.2
Ferritin-increased	44	10.1	Anemia—NOS	90	35.3
MGUS/abnormal protein electrophoresis	40	9.2	Ferritin—increased	60	23.5
Platelets-decreased	34	7.8	—	—	—
Anemia—NOS	32	7.3	—	—	—
Infectious disease					
Lyme disease	32	14.3	Tuberculosis	105	30.4
Tuberculosis	32	14.3	Lyme disease	60	17.4
Parasite infections NOS	29	12.9	Other	60	17.4
Vaccination—general	23	10.3	Vaccination—general	60	17.4
Skin and soft tissue infection	17	7.6	Vaccination—travel	60	17.4
Nephrology					
Proteinuria	22	14.2	Hypertension	505	64.3
CKD-NOS	20	12.9	Drug use in CKD	70	8.9
Drug use in CKD	18	11.6	CKD-NOS	60	7.6
Kidney imaging—cyst or mass or cancer	18	11.6	Proteinuria	60	7.6
Proteinuria-diabetes	17	11.0	Stones (calculi)/kidney stones	60	7.6
Obstetrics and Gynecology					
Abnormal uterine bleeding	48	12.2	Abnormal uterine bleeding	260	12.7
Contraception	40	10.2	Menopause	205	10.0
Menopause	35	8.9	Uterovaginal prolapse	180	8.8
Abnormal pelvic ultrasound	33	8.4	Gynecological cancer screening	165	8.0
Gynecological cancer screening	29	7.4	Breastfeeding	120	5.8
Pediatrics					
General peds: headaches	12	2.8	PSYCH: depressive disorders	120	12.1
General peds: ADHD	11	2.6	ID: vaccination—general	75	7.6
General peds: movement disorder	10	2.4	Anticipatory guidance	60	6.1
General peds: rash	10	2.4	ENDO: obesity/weight gain	60	6.1
General peds: penis	9	2.1	Gen peds: anticipatory guidance	60	6.1
Psychiatry					
Depressive disorders	51	30.4	Substance-related and addictive disorders	360	18.0
Anxiety disorders	28	16.7	Neurocognitive disorders	270	13.5

(Continued)

TABLE 3.
Top Five Content Areas (Continued)

eConsults Top 5 Content Areas	CPD Activities				
	Cases	% of Cases	Top Content Areas	Minutes	% of Minutes
Neurodevelopmental disorders	21	12.5	Sleep-Wake disorders	180	9.0
Bipolar and related disorders	20	11.9	Geriatrics	120	6.0
Schizophrenia spectrum and other psychotic disorders	18	10.7	Disruptive, impulse-control, and conduct disorders	105	5.3
Rheumatology					
Osteoporosis	49	21.8	Inflammatory monoarthritis/red swollen joint	120	57.1
Pain—multiple joints	24	10.7	Crystal arthropathy—gout	60	28.6
Inflammatory polyarthritis/red swollen multiple joints	22	9.8	Osteoporosis	30	14.3
Osteoarthritis	15	6.7	—	—	—
Abnormal serological marker without joint symptoms	10	4.4	—	—	—
Urology					
Hematuria	25	13.2	Incontinence	120	27.6
Renal mass	15	7.9	Prostate-other	120	27.6
Kidney stones	14	7.4	Erectile dysfunction	105	24.1
Recurrent urinary tract infections	12	6.3	Kidney stones/renal stones	60	13.8
Prostate-ca	10	5.3	Prostate-ca	30	6.9

ADHD, attention-deficit hyperactivity disorder; BMD, bone mineral density; CKD, chronic kidney disease; CPD, continuing professional development; ECG, electrocardiography; LFT, liver function test; MGUS, monoclonal gammopathy of undetermined significance; NOS, nitric oxide synthase; WBC, white blood cell.

advertising posters with title and session objectives were provided. A researcher and administrator then removed offerings that were not relevant for PCPs. Individual courses were then coded by a medical student according to the same specialty taxonomies used for classifying the eConsult questions. A total of 521 sessions were identified for inclusion in our analysis. A similar content analysis for the eConsult question type and content classification was adopted for classifying the CPD course offerings.

Comparison of eConsult and CPD Session Content

The top five most common content topics among the eConsult questions and the CPD offerings for a given specialty were determined and compared descriptively. Percent representation of each content area was calculated for both eConsult questions and CPD offerings, and the difference between the two was presented. Percent difference was calculated only when a specific content code occurred at least once in both the eConsult questions and the CPD offerings for a given specialty.

RESULTS

Over a period of 45 months (April 15, 2011, to January 31, 2015) 5601 eConsults were submitted by 588 PCPs to 60 specialty services. A total of 3283 eConsults (representing 59% of the total cases) from the 12 most consulted specialties are included in our analysis. The total number of eConsult cases and CPD course minutes for each specialty are presented in Table 2. An analysis of the percentage of the total eConsult cases for each specialty in comparison to the total CPD course minutes dedicated to each specialty is presented in Figure 1. There are many observable mismatches at the specialty level: nearly 30% of CPD time was dedicated to cardiology, whereas only 11% of eConsult questions concerned this specialty. There was a similar overrepresentation of psychiatry in CPD courses, with 16% of CPD minutes versus only 5% of eConsult questions being pertinent to it. Some specialties were underrepresented in the CPD coursework

relative to the perceived demand indicated by eConsult questions. The most obvious case of underrepresentation in CPD was hematology, which accounted for not just 2% of CPD minutes but 13% of eConsult questions. These data suggest that local CPD offerings for PCPs could be improved by targeting the clinical questions being asked by PCPs and the medical specialties they address.

The five most commonly addressed content areas for eConsult questions and for CPD courses in a given specialty are reported in Table 3. The percent differences between the eConsult questions asked about a particular content area and the CPD minutes offered for that content are presented in Table 4.

DISCUSSION

When considering specific content within specialties, our data suggest that there is room for improvement for most specialties with regard to matching CPD offerings with point-of-care questions. Similar ratios of eConsult questions and CPD minutes for a given content area were observed throughout obstetrics and gynecology. Many ratios matched within cardiology with a few exceptions. These specialties may be more responsive to the needs of local physicians, although these similarities may be coincidental. The disparities between the percentages of questions asked that concern a specific specialty and the percentage of CPD course minutes dedicated to that specialty may be affected by the funding or local membership of societies for a given specialty and most locally developed CPD programs depend on the need and enthusiasm of clinical champions. A specialty may be underrepresented in CPD minutes compared with the demand suggested by eConsult questions for reasons other than perceived lack of demand, a potential obstacle that may warrant further study. Another source of the discrepancies may be a previously observed tendency for physicians to choose CPD courses on topics with which they are already familiar, if a new guideline is produced, or a new drug treatment is available.^{35,36} Physicians may

TABLE 4.
Percent Difference Between eConsult Content and CPD Content

	eConsult Content		CPD Content		% Difference
	Count (Questions)	%	Count (min)	%	
Cardiology					
Coronary artery disease	62	17.5	165	4.5	-13.0
ECG	30	8.5	95	2.6	-5.9
Heart failure	11	3.1	540	14.8	11.7
Dermatology					
Dermatitis	15	11.3	30	8.3	-2.9
Nail diseases	4	3.0	15	4.2	1.2
Other	1	0.8	45	12.5	11.7
Endocrinology					
Diabetes—complications	2	0.4	160	17.8	17.3
Diabetes—glycemic control	49	10.6	300	33.3	22.8
Obesity/weight gain	2	0.4	120	13.3	12.9
Gastroenterology					
Anal fissure/perianal abscess	1	0.8	105	35.0	34.2
Irritable bowel syndrome	6	5.0	30	10.0	5.0
Liver—fatty liver	1	0.8	105	35.0	34.2
Hematology					
Abnormal WBC	107	24.5	105	41.2	16.7
Anemia—NOS	32	7.3	90	35.3	28.0
Ferritin—increased	44	10.1	60	23.5	13.4
Infectious disease					
Other	7	3.1	60	17.4	14.3
Tuberculosis	32	14.3	105	30.4	16.1
Vaccination—travel	3	1.3	60	17.4	16.1
Nephrology					
Hypertension	3	1.9	505	64.3	62.4
Proteinuria	22	14.2	60	7.6	-6.6
Stones (calculi)	3	1.9	60	7.6	5.7
Obstetrics and Gynecology					
Anaphylaxis	1	0.3	80	3.9	3.6
Contraception	40	10.2	60	2.9	-7.2
Endometrial hyperplasia	7	1.8	120	5.8	4.1
Pediatrics					
ID: vaccination—general	5	1.2	75	7.6	6.4
PSYCH: depressive disorders	3	0.7	120	12.1	11.4
PSYCH: feeding and eating disorders	1	0.2	60	6.1	5.8
Psychiatry					
Depressive disorders	51	30.4	80	4.0	-26.3
Neurocognitive disorders	3	1.8	270	13.5	11.7
Substance—related and addictive disorders	5	3.0	360	18.0	15.1
Rheumatology					
Crystal arthropathy—gout	9	4.0	60	28.6	24.6
Inflammatory monoarthritis	7	3.1	120	57.1	54.0
Osteoporosis	49	21.8	30	14.3	-7.5
Urology					
Erectile dysfunction	9	4.8	105	24.1	19.4
Incontinence	8	4.2	120	27.6	23.4
Prostate other	5	2.6	120	27.6	24.9

CPD, continuing professional development; ECG, electrocardiography; NOS, nitric oxide synthase; WBC, white blood cell.

thereby increase the demand for these courses. The point-of-care questions captured in eConsult may be more reflective of areas in which the physicians could use more knowledge, as they felt the need to seek outside help to solve a real clinical problem. Together, this would suggest that CPD course

offerings may be responding to perceived demand in content areas in which physicians are already well versed and moving away from areas where further knowledge is genuinely needed. This study is the first to compare eConsult question content to CPD activities.

Previous research by individual specialties involved in the Champlain BASE eConsult system has been disseminated and continues to be.^{28–34} Other eConsult systems have published content findings similar to this study. For example Cruz and colleagues explored the content of endocrine consults, albeit a sample a third of the size, with comparable results.³⁷ Osteoporosis consults represented 10.8% of the total endocrine consults compared with almost 13.6% in this study; hyperthyroidism (8.2%–12.3%), hypothyroidism (9.5%–10.6%), and diabetes (5.7%–10.4%). However, no other study has compared content with CPD activities.

The increasing use of eConsult and eReferral services present a truly unique and innovative opportunity to enhance CPD activities.³⁸ Furthermore, these services fit with the current vision of how CPD should be designed: “The CPD system should address clinicians’ learning needs at the point of care where practice-based inquiry and the learning needs of clinicians originate, and CPD methods should provide the skills or tools required to meet those needs.”⁷ This novel study has compared eConsults in one region with CPD offerings from the local office of CPD and we have found a discrepancy between the content offered in CPD courses in the Champlain LHIN and the subject matter of the questions being asked by PCPs on the BASE eConsult service. This study did have its limitations. The eConsults were predominately from one region; perhaps the questions from other regions may look different. Another limitation of the study is the presumption that eConsult questions reflect a lack of knowledge, when it appears that in some cases PCPs use eConsult to support their chosen course of action in discussions with a patient. In these cases, the PCP was considering a correct course of action and was seeking documentation for defending it, or perhaps was double-checking or assuaging uncertainties of the patient. The assumed connection between eConsult questions asked and CPD requirements may also miss content areas in which the PCP is lacking in confidence to the degree that he or she refers right away without even considering an eConsult exchange. Finally, the answers provided by the specialist via eConsult may supplement the PCP’s knowledge of the topic such that CPD in that topic is no longer necessary, in which case the PCP’s question would no longer reflect a need for CPD. Another assumption for this study is that PCPs use local programming as their main source of CPD. We know clinicians do obtain their CPD credits from a wide variety of methods and sources.⁷ Furthermore, there is evidence to show that interactive means of obtaining CPD lead to improved performance and even changes in patient outcomes.³⁹ Thus it is important to recognize that PCPs learn in many different many different venues and media. Furthermore, an issue may be that question timing through eConsult may be out of sync with the CPD offering. Future research may include reverse curriculum mapping in which gaps between competencies and eConsult questions can be determined retrospectively. As accreditation bodies are moving toward competency-based recertification eConsult research may play an important role in informing the process.⁴⁰ Competency-based MOC is becoming more widely adopted by regulatory bodies and will demand more in-depth

needs assessments to inform CPD programming. Curriculum mapping, commonly used in undergraduate medical education is a strategy that should be adopted for CPD programming and could easily incorporate the information gleaned from eConsultation questions and topics. Furthermore, eConsultation topics can be used to guide weighting of time on topics and to complement a competency-based CPD curriculum.

eConsult questions can be collated to identify important common gaps in physician knowledge and skills. Regional CPD programs do not always correlate well with the spectrum of common clinical issues experienced on a daily basis by physicians. eConsult questions could be a useful method to identify those gaps and can be used by CPD providers in developing more targeted and timely programs.

Lessons for Practice

- Assessing alignment between questions primary care physicians ask through eConsults and topics covered in CPD refresher courses is one means of evaluating the relevance of educational programming.
- Our data suggest that all specialties in this study show variation between questions asked by PCPs and local CPD programming. Thus, there is room for improvement with regard to matching CPD offerings with the eConsult point-of-care questions.
- Comparing and contrasting topics from CPD events with questions collected through eConsults over the same period could be a widely accessible and cost-efficient approach to guide CPD development.

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