

# Impact of Question Content on e-Consultation Outcomes

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## Abstract

**Background:** By facilitating direct communication of primary care providers (PCPs) with specialists for advice, electronic consult (e-consult) services can reduce the need for patients to wait for and travel to face-to-face consultations with specialists. An association between avoiding face-to-face referrals using an e-consult service and specific content within each e-consult has not been rigorously explored. **Materials and Methods:** Cases submitted to the Champlain Building Access to Specialists through eConsultation service between April 2011 to May 2013 were evaluated. Factors analyzed include question type (e.g., diagnosis or management), formulation (if interventions or outcomes were specified), and the addressed specialty. An avoided referral was present if the PCP indicated so in a mandatory close-out survey. A discrepancy was present if the PCP made a referral when the specialist did not indicate one was necessary, or if the PCP did not request a referral despite the specialist recommending one. **Results:** There were 426 (40%) avoided referrals among 1,055 cases analyzed. Questions associated with the highest avoided referral rates included ones pertaining to diagnosis (44%), nonspecific requests for direction (44%), questions without specified interventions or outcomes (47%), and dermatology cases (49.5%). Specialists agreed on the need for a referral in 82% of cases, with most discrepancies due to the PCP making a referral without the specialist recommending one. **Conclusions:** Referral outcomes are associated with the type of question being asked, the formulation of each question, and the specialty being addressed. Discrepancies among PCPs and specialists regarding which patients require face-

to-face referrals may help identify knowledge gaps and guide professional development.

**Key words:** e-health, telehealth, telemedicine, information management

## Introduction

Excessive wait times, inequitable access depending on geographic location, and poor communication between healthcare providers are key barriers for primary care providers (PCPs) accessing specialist advice.<sup>1,2</sup> Innovative approaches such as population-based, central reorganization of specialist care integrated with emerging technologies can greatly improve access to specialists.<sup>3-7</sup> Electronic consult (e-consult) services reduce the need for traditional consultations when face-to-face contact between patient and provider is not necessary to answer the clinical question. The PCP receives the specialist's advice directly and is then able to implement the suggestions provided in a more timely manner.<sup>8-11</sup>

The Champlain BASE (Building Access to Specialists through eConsultation) system links PCPs to over 40 specialty services.<sup>12</sup> Over 40% of cases submitted to Champlain BASE would have required a face-to-face referral if the e-consult service was not available but was no longer needed because of advice received through the e-consult process.<sup>13</sup>

As electronic solutions for improving referral-consultation services are developed, it is important to determine which factors are associated with success, including the ability to reduce the need for face-to-face consultations. Potential influences on the need for face-to-face consultation include the type of question asked (e.g., diagnosis versus management), the specialty being addressed, and whether the PCP overtly requests if a referral is needed. In an e-mail consult service based in Iowa, specialists were less likely to recommend a face-to-face consultation if referrers had specified a clinical task, intervention, or outcome in their questions.<sup>14</sup>

North et al.<sup>15</sup> described that specialty type was an explanatory variable for conversions of e-consults to face-to-face consultations. Other than question formulation and the addressed specialty, few studies have looked at factors specific to question content that are associated with avoided face-to-face referrals within an e-consult service.

The purpose of this study was to determine whether the quality and type of clinical question and type of specialist accessed are associated with the need for making a face-to-face referral to a specialist after an e-consult is submitted.

**Materials and Methods**

**CHAMPLAIN BASE E-CONSULTATION SYSTEM**

The full details of the development and implementation of the Champlain BASE e-consultation system have been reported elsewhere.<sup>12,13</sup> In brief, it is a secure Web-based service that allows a PCP (family doctor or nurse practitioner) to submit patient-specific clinical questions to specialists using a standardized electronic form. Supplementary patient information, such as laboratory results, digital images, and health history, can be attached. For each e-consult, depending on the request and information provided, the specialist can

- provide recommendations
- request additional information before being able to provide advice
- recommend a face-to-face referral, in which case any additional diagnostic tests or courses for treatment could be suggested and initiated before the appointment.

Upon completion and before a case can be officially closed, the PCP completes a mandatory close-out survey with optional free-text fields. This includes questions on the value of the e-consult to the PCP, as well as the perceived value to the patient, using a 5-point Likert scale. One question directly determines the impact on the need for a face-to-face consultation by offering five choices to the PCP:

1. Referral was originally contemplated but now avoided at this stage.
2. Referral was originally contemplated and is still needed—this e-consult likely leads to a more effective visit.
3. Referral was not originally contemplated and is still not needed—this e-consult provided useful feedback/information.
4. Referral was not originally contemplated, but the e-consult process resulted in a referral being initiated.
5. There was no particular benefit to using e-consult in this case.

**ANALYSIS OF QUESTIONS**

Two authors independently reviewed all submitted e-consults to assign type and quality of the question. All discrepancies were discussed until consensus was reached.

The method for characterizing the e-consult question type was adapted from a taxonomy proposed by Sackett et al.<sup>16</sup> and implemented by Bergus et al.<sup>17</sup> Each question was assigned one of five types of clinical question: diagnosis, prognosis, management, self-improvement or request for direction. Definitions are shown in *Table 1* with examples described in *Table 2*.

The quality of the e-consult question was determined using the PICO framework, which identifies four components of a clinical question: (1) a specific Patient, (2) the Intervention of interest (e.g., a treatment or diagnostic test), (3) a Comparison

**Table 1. Taxonomy for Characterizing Clinical Questions**

TYPE OF CLINICAL QUESTION, CLINICAL TASK	BRIEF DESCRIPTION
Diagnosis	
Clinical findings	How to gather or interpret findings from clinical history or physical examination
Etiology	Questions about the single cause or the origin of a disease
Differential diagnosis	Questions about multiple causes of a disease, and how to rank possible causes by likelihood, seriousness, and treatability
Diagnostic testing	When to use and how to select a specific diagnostic test How to interpret a diagnostic test result
Prognosis	
Prognosis	How to estimate the patient's likely clinical course over time How to predict the likely complications of a disease
Management	
Therapy	How to select, initiate, and dose a treatment How to identify and minimize the complications of a treatment
Prevention	When to start screening an asymptomatic population How to interpret the results of a screening test How to identify and modify risk factors of a disease
Self-improvement	
Self-improvement	How to find and make better use of specialty consultants Finding whether a specific treatment or test is available
Request for direction	
Request for direction	Any question where a clinical scenario is given, but that does not offer any indication as to what information is needed, or is followed by multiple nonspecific questions that do not collectively encompass one of the above clinical tasks

Adapted from Bergus et al.<sup>14</sup>

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**Table 2. Sample Characterization of Clinical Questions Based on Question Content**

CASE DESCRIPTION/QUESTIONS	CHARACTERIZATION
87-year-old man with sudden blurred vision. It lasted a few minutes and never recurred. No temporal artery tenderness, and his ESR was normal for age. ECG showed sinus rhythm, and an echocardiogram did not reveal thrombus. CT head suggests left medial thalamic ischemic injury. Should I be worried? What would you do?	Specialty: Neurology Clinical task: Request for direction Components present: None
8-month-old boy with 1-cm right-sided protrusion of occipital bone. No tenderness, and it does not appear to be a cyst as it is not mobile. It has not grown over 4 months. Is it reasonable to reassure his family that this is benign?	Specialty: General pediatrics Clinical task: Clinical findings Components present: Intervention
51-year-old woman with a 7-mm thyroid nodule. Fine-needle aspiration biopsy was inconclusive. Repeat ultrasound 1 year later revealed two stable thyroid nodules. TSH is 0.50. Would repeat biopsy be indicated, or should I follow with annual ultrasounds?	Specialty: Endocrinology Clinical task: Diagnostic test Components present: Intervention and comparison intervention
42-year-old woman with recurrent fetal loss (G4P0). She has declined referral for evaluation of thrombotic diseases. She now presents with 3 weeks of vaginal bleeding. I am reluctant to start oral contraception due to risk of thromboembolism. Does her history of recurrent fetal loss confer a higher risk of future thrombotic events?	Specialty: Thrombosis Clinical task: Prognosis Components present: Intervention and outcome
46-year-old man with two back surgeries for recurrent L4–5 herniation. He is only slightly better, and orthopedics is considering repeat surgery. On pregabalin 75 mg TID and oxycodone CR 40 mg BID but having worsening pain towards the evening on some days. Would you use short-acting oxycodone for breakthrough pain as needed, or increase his second oxycodone CR dose in order to best manage his evening pain?	Specialty: Pain medicine and anesthesiology Clinical task: Therapy Components present: Intervention, comparison intervention, outcome
BID, twice a day; CR, controlled-release; CT, computed tomography; ECG, electrocardiogram; ESR, erythrocyte sedimentation rate; G4P0, gravida 4 para 0; TID, three times a day; TSH, thyroid-stimulating hormone.	

intervention where applicable, and (4) the desired Outcome of the intervention.<sup>18</sup> Because all e-consults were required to be linked to a specific patient, questions were only evaluated for the presence of the other three components. Examples of characterizing PICO components for e-consults are shown in *Table 2*.

**NEED FOR FACE-TO-FACE REFERRAL**

All e-consults were categorized by the need for a face-to-face referral from both the PCP’s and the specialist’s perspectives. A specialist’s recommendation for a face-to-face referral was assigned to all cases where the specialist declined to answer by e-consult and recommended a face-to-face referral, or where the specialist mentioned in the text of his or her answer to the PCP that he or she should submit a request for face-to-face consultation. A face-to-face referral was considered to be necessary from the PCP’s perspective if the PCP indicated his or her intention to initiate one on the close-out survey, whereas face-to-face referral was considered avoided if the PCP answered “referral was originally contemplated but now avoided at this stage.” A discrepancy was present if the PCP made a face-to-face referral when the specialist did not indicate one was necessary, or if the PCP did not state he or she intended to request a face-to-face referral even though the specialist had recommended one. To assess if the PCP’s mentioning the need for referral could influence a specialist’s decision to request a referral, we also

identified clinical questions where the PCP explicitly asked if a referral is warranted.

Need for a face-to-face referral and avoided referral rates were compared across question types, the number of PICO components included in the question, all available specialty services, and if the PCP overtly requested if a referral was needed.

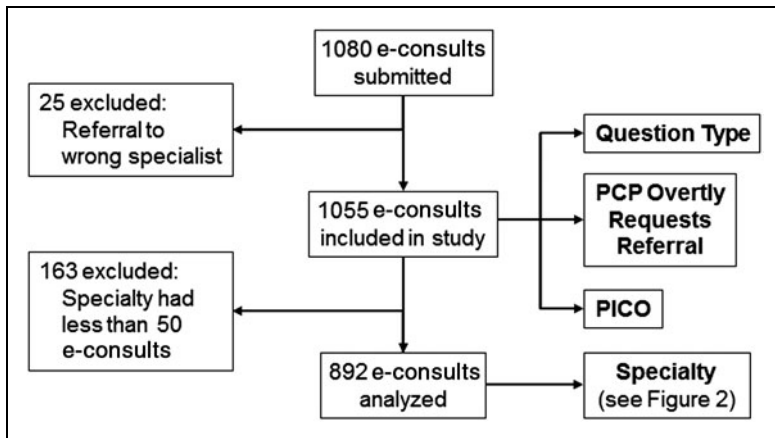
**STATISTICAL ANALYSIS**

The relationship among avoided referral rates, discrepancies between PCPs and specialists, and each e-consult element was assessed using chi-squared tests for all specialty services with 50 or more requests. All data analysis was completed using SAS version 9.4 software (SAS Institute, Cary, NC).

**Results**

Between April 2011 and May 2013, 1,080 clinical questions were submitted to the Champlain BASE e-consult service for 21 of the 40 available specialty services. Twenty-five questions were excluded due to inadvertent referral to the wrong specialist. There were nine different specialties with more than 50 questions (*Fig. 1*). Specialty distribution is shown in *Figure 2*, with dermatology having the most e-consults completed during the time period.

The most common type of question was request for direction (35.4%), followed by diagnosis (32.4%), management (26.8%), self-improvement (4.1%), and prognosis (1.3%).



**Fig. 1.** Electronic consults (e-consults) and factors analyzed. PICO denotes the components of a clinical question: a specific Patient, the Intervention of interest, a Comparison intervention, and the desired Outcome. Specific patients were assigned to all e-consults, and thus questions were only evaluated for the presence of the other three components. PCP, primary care provider initiating the e-consult.

When assessing the quality of questions using the PICO grading system, 25.0% contained no component other than patient-specific information, 39.6% had intervention as the only additional component, 2.9% had outcome as the only additional component, 12.6% included an intervention and comparison, 14.8% included an intervention and outcome, and 5.0% included all three components.

Overall, there were 296 (28.1%) traditional referrals initiated by PCPs, 426 (40.4%) cases where the PCP no longer needed to refer the patient (avoided referrals), and 137 (13.0%) recommendations by specialists to initiate a face-to-face referral.

The number of avoided referrals was significantly different ( $p=0.009$ ) across the type of question asked, with request for direction and diagnosis questions having the highest rate of referrals avoided at 44% (Table 3). The self-improvement questions had the lowest rate of referral avoidance (25.6%) and the highest rate of discrepancy between PCPs and specialists.

Cases that identified none, one, two, or all three PICO components resulted in 47%, 40.8%, 35.6%, and 30.2% avoided referrals, respectively, suggesting a trend for fewer avoided referrals for questions containing more components ( $p=0.02$ ).

PCPs overtly asked specialists if a face-to-face referral was needed in 192 out of 1,055 cases (18.2%). There were significantly more specialist recommendations for a face-to-face referral in these cases compared with cases where the need for referral was not overtly requested (28.1% versus 9.6%;  $p<0.0001$ ). There was no difference in

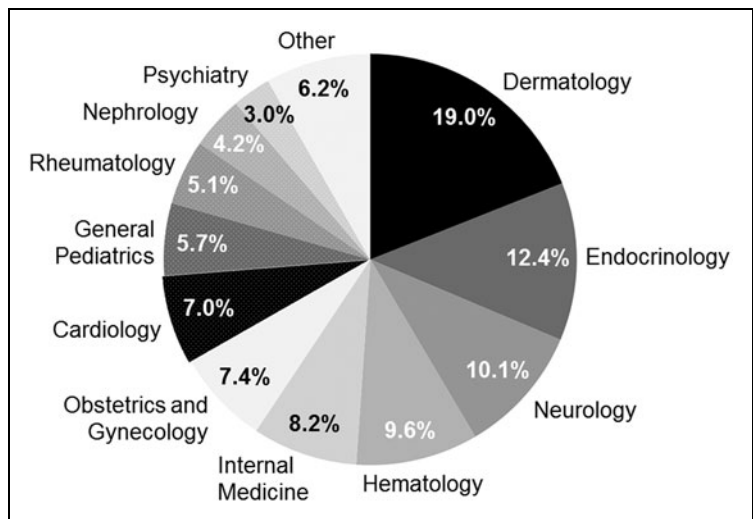
avoided referral rates for these cases compared with cases where the need for referral was not overtly requested (42.2% versus 40%;  $p=0.57$ ).

When individual specialties with over 50 e-consults were evaluated, there was a significant difference ( $p=0.001$ ) in avoided referral rates across specialties. Dermatology (99 of 200, 49.5% of all questions) had the highest rate of avoided referrals, followed by hematology (46.5%) and endocrinology (45.0%) (Table 4). Rheumatology (24.1%), obstetrics and gynecology (28.2%), and neurology (30.8%) had the lowest rates of avoided referrals. Discrepancies between which cases PCPs and specialists felt that referral was required were highest among rheumatology and neurology compared with general pediatrics and endocrinology, which had the lowest rates.

PCPs and specialists agreed on the perceived need for referral for 862 out of 1,055 cases (81.7%), meaning that in 18.3% of cases there was a discrepancy between PCP and specialist on the need for a face-to-face referral (Table 5). Among cases where a discrepancy was present, the majority were cases where the PCP made a referral when the specialist did not recommend one.

**Discussion**

Although e-consult services can improve access to specialty care and avoid the need for a face-to-face consultation in over 40% of cases,<sup>13</sup> factors specific to question content that are



**Fig. 2.** Specialty distribution of 1,055 electronic consults. In descending order of number of questions, other specialties include otolaryngology, radiology, thrombosis, pediatric hematology and oncology, pain medicine and anesthesiology, urology, clinical pharmacist, diabetes education, infectious diseases, and palliative care.

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**Table 3. Need for Face-to-Face Referral Based on Question Type**

QUESTION TYPE	N	SPECIALIST RECOMMENDS REFERRAL	PCP MAKES REFERRAL	AVOIDED REFERRALS
Request for direction	373	53 (14.2%)	117 (31.4%)	165 (44.2%)
Diagnosis	342	39 (11.4%)	85 (24.9%)	150 (43.9%)
Management	283	27 (9.5%)	65 (23.0%)	95 (33.6%)
Self-improvement	43	16 (37.2%)	26 (60.5%)	11 (25.6%)
Prognosis	14	2 (14.3%)	3 (21.4%)	5 (35.7%)
Total	1,055	137 (13.0%)	296 (28.1%)	426 (40.4%)

PCP, primary care provider.

associated with the need for a traditional referral have not been explored in detail. We found that referral outcomes for Champlain BASE e-consults may depend on the type of question being asked, the quality of the question based on the presence of PICO components, and the specialty being addressed. Although specialists were more likely to recommend face-to-face referrals if the PCP overtly requested if one was needed, these requests did not significantly affect the referral outcome. We also found that discrepancies in opinions exist between PCPs and specialists when determining cases that would still benefit from face-to-face referrals after an e-consult process, with specialists much more likely to not indicate the need for a face-to-face consultation.

We used the taxonomy proposed by Bergus et al.<sup>17</sup> in their analysis of 708 informal consultations between PCPs and specialty physicians using an e-mail service to identify the types of questions that PCPs were asking. They analyzed 278 (39.3%) diagnosis questions, 334 (47.2%) management questions, 57 (8.0%) prognosis questions, and 39 (5.5%) requests for direction. Although our distribution of questions was significantly different than that in the previous study, the rate at which their specialists recommend a referral (12.1%) was similar to ours (13.0%). In our study, over one-third of our questions were “requests for direction,” namely, there was no specific question identified (e.g., “What would you do?” and “What are your thoughts?”). It is interesting that these nonspecific requests saw the highest avoided referral rate compared with other question types. Forty-three cases were considered self-improvement questions as the only question posed by the PCP was if a face-to-face referral was warranted after describing a clinical scenario; these questions had the lowest avoided referral rates. Although we found

that question type was significantly associated with avoided referral rates ( $p=0.009$ ), we acknowledge that limiting PCPs from asking specific types of questions is not likely to be helpful. On the other hand, encouraging PCPs to specify the desired issue(s) they want addressed and not to focus only on whether a referral is needed may help specialists focus their responses and answer questions in a timely manner.

In a subsequent study by Bergus et al.,<sup>14</sup> specialists were less likely to recommend a face-to-face consultation if PCPs had specified PICO components of clinical task, intervention, or outcome in questions within their e-mail consult service. We found an opposite trend in our study, where referral rates became higher as more components were specified ( $p=0.02$ ).

There are several possible explanations for the differences. Their PCPs were faculty members or residents in a family practice training program and may have had more training on composing good clinical questions. We are unable to assess if the typical cases were of different complexity or distributed across different specialty groups. Although the PICO framework may be useful for developing research questions, it may be less useful in the setting of clinical questions posed to specialists, particularly those who do not focus on management.<sup>19</sup> Ultimately, we feel there is less to be gained by focusing on question composition as we do not want to discourage PCPs from submitting questions by requiring that interventions and outcomes be specified.

**Table 4. Need for a Face-to-Face Referral for Specialties with at Least 50 Electronic Consults**

SPECIALTY	N	SPECIALIST RECOMMENDS REFERRAL	PCP MAKES REFERRAL	AVOIDED REFERRALS
Dermatology	200	10 (5.0%)	41 (20.5%)	99 (49.5%)
Endocrinology	131	10 (7.6%)	27 (20.6%)	59 (45.0%)
Neurology	107	23 (21.5%)	46 (43.0%)	33 (30.8%)
Hematology	101	15 (14.9%)	32 (31.7%)	47 (46.5%)
Internal medicine	87	9 (10.3%)	17 (19.5%)	39 (44.8%)
Obstetrics and gynecology	78	9 (11.5%)	19 (24.4%)	22 (28.2%)
Cardiology	74	9 (12.2%)	20 (27.0%)	29 (39.2%)
General pediatrics	60	9 (15.0%)	11 (18.3%)	27 (45.0%)
Rheumatology	54	10 (18.5%)	23 (42.6%)	13 (24.1%)
Total	892	104 (11.7%)	236 (26.5%)	368 (41.3%)

PCP, primary care provider.

**Table 5. Discrepancy Between PCP and Specialist on Need for Face-to-Face Consultation**

DISCREPANCY, SPECIALIST RECOMMENDS REFERRAL	PCP MAKES REFERRAL	N (%)
No discrepancy		
No	No	742 (70.3%)
Yes	Yes	120 (11.4%)
Discrepancy present		
No	Yes	176 (16.7%)
Yes	No	17 (1.6%)
PCP, primary care provider.		

Although PCPs and specialists agreed on the perceived need for referral for over 80% of cases, most discrepancies were due to the PCP making a referral without the specialist recommending one. Identifying areas of discrepancy may be important for targeted professional development activities. The specialties with the highest discrepancy rates were rheumatology and neurology; this could be due to physical examination maneuvers requiring time and expertise that the PCP may not possess. Other possibilities include if specialists are recommending a test or procedure that is difficult for the PCP to access and/or interpret. On the other hand, our system enables PCPs to easily attach pictures to e-consults, which allows specialists to confirm visual physical examination findings, which may explain why dermatology had the highest avoided referral rate. It may be easier to avoid referrals to specialties that rely less on physical examination findings and more on laboratory testing, as seen in endocrinology and hematology, which had above-average avoided referral rates.

We acknowledge limitations in our study. We were unable to confirm if patients were seen in face-to-face consultation following the e-consult process as we did not collect patient identifiers and thus relied solely on the mandatory close-out survey completed by the PCP for referral outcomes. Ours is a single service in a large regional health network across a wide variety of specialty services. It is not possible to know if our results are generalizable to different regions, healthcare systems, or a wider pool of specialty physicians.

The success of our e-consult service has generated interest across Canada and internationally. A key outcome is improved access to a broad variety of specialty areas in a timely, efficient manner. Before widespread adoption of e-consult services, it is important to carefully study the impact of e-consults and other technology solutions so that efforts and finite financial resources can be dedicated to areas where they

are most likely to make a difference. We recently described that e-consult services may lead to favorable socioeconomic return over time, mainly through cost savings attributed to avoided face-to-face referrals.<sup>20</sup> It will also be important to provide participating practitioners with guidelines on types of clinical questions most likely to be answered through e-consult. Specialists and primary care providers will need to work together to determine which clinical questions are best asked through an e-consult service.

## Conclusions

Referral outcomes for the Champlain BASE e-consult service are associated with the type of question being asked, the formulation of each question, and the specialty being addressed. We were able to identify discrepancies in opinions among PCPs and specialists when determining if patients require face-to-face referrals after an e-consult process, which in turn may help identify knowledge gaps and guide professional development.

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## Disclosure Statement

No competing financial interests exist.

## REFERENCES

- Barua B, Fathers F. Waiting your turn. Wait times for health care in Canada, 2014 report. 2014. Available at [www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/waiting-your-turn-2014.pdf](http://www.fraserinstitute.org/uploadedFiles/fraser-ca/Content/research-news/research/publications/waiting-your-turn-2014.pdf) (last accessed May 8, 2015).
- Zuchowski JL, Rose DE, Hamilton AB, Stockdale SE, Meredith LS, Yano EM, Rubenstein LV, Cordasco KM. Challenges in referral communication between VHA primary care and specialty care. *J Gen Intern Med* 2015;30:305–311.
- Liddy C, Rowan M, Afkham A, Maranger J, Keely E. Building access to specialist care through e-consultation. *Open Med* 2013;7(1):e1–e8.
- Caffery LJ, Smith AC. A literature review of email-based telemedicine. *Stud Health Technol Inform* 2010;161:20–34.
- Horner K, Wagner E, Tufano J. Electronic consultations between primary and specialty care clinicians: Early insights. The Commonwealth Fund. 2011. Available at [www.commonwealthfund.org/Publications/Issue-Briefs/2011/Oct/Electronic-Consultations.aspx](http://www.commonwealthfund.org/Publications/Issue-Briefs/2011/Oct/Electronic-Consultations.aspx) (last accessed May 8, 2015).
- Chen AH, Murphy EJ, Yee HF Jr. eReferral—A new model for integrated care. *N Engl J Med* 2013;368:2450–2453.



7. Rodriguez KL, Burkitt KH, Bayliss NK, Skoko JE, Switzer GE, Zickmund SL, Fine MJ, Macpherson DS. Veteran, primary care provider, and specialist satisfaction with electronic consultation. *JMIR Med Inform* **2015**;3:e5.
8. Patterson V, Humphreys J, Henderson M, Crealey G. Email triage is an effective, efficient and safe way of managing new referrals to a neurologist. *Qual Saf Health Care* **2010**;19:e51.
9. North F, Uthke LD, Tulledge-Scheitel SM. Integration of e-consultations into the outpatient care process at a tertiary medical centre. *J Telemed Telecare* **2014**;20:221–229.
10. Palen TE, Price D, Shetterly S, Wallace KB. Comparing virtual consults to traditional consults using an electronic health record: An observational case-control study. *BMC Med Inform Decis Mak* **2012**;12:65.
11. Stoves J, Connolly J, Cheung CK, Grange A, Rhodes P, O'Donoghue D, Wright J. Electronic consultation as an alternative to hospital referral for patients with chronic kidney disease: A novel application for networked electronic health records to improve the accessibility and efficiency of healthcare. *Qual Saf Health Care* **2010**;19:e54.
12. Liddy C, Maranger J, Afkham A, Keely E. The 10 steps to establishing an eConsult service to improve access to specialist care. *Telemed J E Health* **2013**;19:982–990.
13. Keely E, Liddy C, Afkham A. Utilization, benefits, and impact of an e-consultation service across diverse specialties and primary care providers. *Telemed J E Health* **2013**;19:733–738.
14. Bergus GR, Emerson M, Reed DA, Attaluri A. Email consultations: Well formulated clinical referrals reduce the need for clinic consultation. *J Telemed Telecare* **2006**;12:3–38.
15. North F, Uthke LD, Tulledge-Scheitel SM. Internal e-consultations in an integrated multispecialty practice: A retrospective review of use, content, and outcomes. *J Telemed Telecare* **2015**;21:151–159.
16. Sackett DL, Richardson WS, Rosenberg W, Haynes RB, eds. *Evidence-based medicine: How to practice and teach EBM*. New York: Churchill Livingstone, **1997**.
17. Bergus GR, Randall CS, Sinift SD, Rosenthal DM. Does the structure of clinical questions affect the outcome of curbside consultations with specialty colleagues? *Arch Fam Med* **2000**;9:541–547.
18. Richardson WS, Wilson MC, Nishikawa J, Hayward RS. The well-built clinical question: A key to evidence-based decisions. *ACP J Club* **1995**;123:A12–A13.
19. Huang X, Lin J, Demner-Fushman D. Evaluation of PICO as a knowledge representation for clinical questions. *AMIA Annu Symp Proc* **2006**;2006:359–363.
20. Liddy C, Deri Armstrong C, Drosinis P, Mito-Yobo F, Afkham A, Keely E. What are the costs of improving access to specialists through eConsultation? The Champlain BASE experience. *Stud Health Technol Inform* **2015**;209:67–74.

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