



Telerheumatology: Looking Beyond the Camera to Improve and Expand Access – A Narrative Review of eConsults in Rheumatology

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Abstract

Telerheumatology, the delivery of rheumatology care through telemedicine, goes beyond synchronous audiovisual visits. The demand for rheumatology care continues to grow, while the highest concentration of rheumatologists remains in metropolitan areas. Rheumatologists need to avail themselves of a broad armamentarium to deliver high-quality care through various methods. An important resource and communication tool is the electronic consult. This article employs a narrative review to define, understand, and apply electronic consults to improve primary care-specialty communication, decrease visit wait times, guide additional evaluation, and avoid unnecessary visits, resulting in an efficient and timely solution to the demand for rheumatology expertise.

Key Points

1. This article discusses in detail an extremely relevant topic in rheumatology, electronic consultation (eConsult). eConsults are in the early stages of implementation and evaluation, and the time is now to expand our knowledge base about them, paving the way for additional study and best practices.
2. This article reviews available literature for eConsults in rheumatology and expands to develop a long-term vision for eConsults in the field.
3. It focuses on creating a clearer understanding of eConsults, the invested parties, the context to use eConsults, the challenges and limitations that occur, and ultimately the benefit to patient care along with improved communication between primary care and rheumatology.

INTRODUCTION

The electronic consultation (eConsult) is a structured, asynchronous communication tool that facilitates dialogue between primary care providers and specialists.^{1,2} In medicine, eConsults serve as a modern evolution of the traditional 'curbside consult', offering a formalised, documented exchange of clinical information within the electronic health record. This format enhances continuity of care, improves documentation, and bridges communication gaps that often arise in large, siloed healthcare systems.

Despite their growing use across other specialties, rheumatology practices underuse eConsults. To better understand their role and potential in rheumatology, the authors conducted a narrative review focused specifically on rheumatology-based eConsult publications. The authors aim to explore their relevance to the specialty, begin to identify best practices for implementation, and examine the perspectives of key participants, including primary care providers, rheumatologists, and patients. They also highlight the challenges and limitations that may hinder their broader adoption and propose strategies to optimise their use in clinical practice.

The literature on specialty agnostic eConsults is large and difficult to generalise to rheumatology. Therefore, this narrative review centers on rheumatology-specific publications and expert insights to provide a focused and practical framework for understanding and advancing eConsults in this field.

DEFINITION AND SCOPE OF eCONSULTS

eConsults, in their simplest form, are a communication tool aimed at facilitating communication about a specific clinical question for a particular patient. Rheumatology has been slower to adopt eConsults relative to other specialties despite evidence of substantial benefit for those specialties.³⁻⁵ The driving force behind this lower uptake has yet

to be rigorously studied, and while epistemological differences between specialties are likely playing a role, an important but less recognised contributor is a misperception about the value of eConsults in rheumatology practice. eConsults have been shown to reduce the volume of patients needing face-to-face evaluations by providing an alternative care pathway.⁶ However, these interventions primarily studied eConsult as a care delivery tool, rather than a communication tool. There are many other communication tools in rheumatology, like telephone, fax, email, and chart notes, among others, and each has its own utility during routine patient care. However, a fax machine is not assessed for its ability to provide rheumatology care, but it is assessed for its ability to receive and hold incoming referrals consistently. Likewise, eConsults should be measured by their ability to contribute to answering clinical questions as opposed to their ability to provide rheumatology care. In assessing the clinical benefit, the goal is not to determine if an eConsult can diagnose lupus, but instead to consider the individual and population-level impacts of addressing clinical questions that do not need a rheumatologic diagnosis. In the following section, the authors examine the impact of eConsults from this framework.

BENEFITS AND CLINICAL IMPACT

The clinical impact of eConsults in rheumatology is most evident in their effect during the growing time gap between referral and consultation, the pre-consultation phase of care.

The traditional referral system lacks a formalised conceptualisation of the pre-consultation phase. There is an implicit assumption in the traditional system that if a case is high risk, the referring provider will reach out to the specialist, and conversely, that specialist will be intentional about the scheduled appointment time. At times, these communications do occur; however, it is in the minority of cases, particularly as healthcare systems become increasingly fragmented and siloed. For the clinical questions that require a face-to-face

evaluation, an eConsult allows the specialist to communicate specific recommendations about pre-visit care, from additional tests to initial stabilisation to escalation parameters. In the process of answering the eConsult, the specialist also evaluates the right provider for the clinical question and enables a better assessment of the appropriate timeframe for questions that require face-to-face evaluation. In some cases, the consultant may be able to resolve the clinical question through the eConsult alone.

Faxed referrals were retrospectively reviewed in a descriptive study by Keely et al.⁵ to evaluate if faxed referrals could have been addressed by eConsults. Three hundred consecutive faxed referrals and three hundred eConsult referrals were reviewed. The primary reason for consultation in the faxed referrals most often involved rheumatoid arthritis, systemic lupus erythematosus, and polyarthritis. In contrast, eConsult questions most often involved abnormal serology without joint symptoms and gout. Keely et al.⁵ concluded that 72% of the faxed referrals showed the potential to be addressed with eConsults. Keely et al.⁵ included a table summarising the response from the reviewing rheumatologist, which the authors found thought-provoking. "I could likely answer this consultation with an eConsult, thus likely avoid a face-to-face consultation" was coded 19.7% of the time. It is noteworthy, especially at large academic institutions where there is a growing number of new patient referrals, that there was nearly a 20% classification of eConsult alone based solely on review of a faxed referral. Furthermore, the study reported "I could possibly answer this consultation with an eConsult, but information is missing" in 20.7% of eConsults, while in 27.7% eConsults would not be appropriate for a variety of reasons, including likely needing a procedure and no clear question. Finally, in 32%, the response was "I could provide some advice regarding this consultation via eConsult, but the patient still likely requires a face-to-face consultation." The main limitation of the study is that it included only one region at one academic center, with one rheumatologist reviewing all referrals.

Despite the limitations, the study results suggest a moderate proportion of incoming referrals could be addressed by eConsult alone, which could improve overall clinical access.

A descriptive study published by Rostom et al.⁷ analysed the impact of eConsults on the need for subsequent in-person visits. Rostom et al.⁷ reviewed 225 eConsults which were grouped by type of question and impact on in-person visit rates. Questions regarding treatment, diagnosis, or management were included. Osteoporosis was the most common diagnosis followed by pain in multiple joints and polyarthritis. Rostom et al.⁷ concluded that eConsults improved clinic access because 38% of eConsults did not require a subsequent in-person visit. Limitations of the study are that only a single health region was studied, and it was a small sample size.

A quality improvement study assessing the impact of starting an eConsult programme on clinic wait times by Malcolm et al.⁸ was published in 2022. Malcolm et al.⁸ concluded that eConsults resulted in reduced wait times because 41% of eConsult questions could be managed in primary care or an alternative specialty. Furthermore, referring clinics that were enrolled in the eConsult programme had a median decrease in wait times by 41 days, compared to 20 days for non-enrolled clinics. While these measures were not statistically significantly different, they do demonstrate an important trend. The main limitations are that this was a single large fee-for-service network within an academic institution and did not account for future conversion to in-person visits after initial primary care management.

A unique value of eConsults in rheumatology that has not been well explored in the literature lies in providing rapid input in situations where delays, such as those between a lab test resulting and a rheumatologist evaluation, can leave patients vulnerable to a multitude of potentially conflicting interpretations from family, friends, the internet, and other healthcare providers who may not

fully appreciate the inherent diagnostic uncertainty in rheumatology. While many clinical questions cannot be answered definitively by eConsult alone, the tool empowers rheumatologists to shape the narrative early in the diagnostic journey.

While eConsults offer important benefits like reducing wait times and improving communication, their success depends on overcoming several practical and systemic challenges.

CHALLENGES TO IMPLEMENTATION

Although eConsults have demonstrated significant potential to enhance access and efficiency in rheumatology care, their integration into routine practice is not without obstacles. Key challenges related to appropriate use, expectations, perceptions, and reimbursement must be addressed. There is no ideal method of guaranteeing that all new patient referrals are handled in an efficient, appropriate manner, including decreasing wait times, avoiding unnecessary visits, and ensuring availability in rural and underserved areas. eConsults are not a panacea for solving access to rheumatology care, but they represent an excellent option to overcome barriers despite the challenges facing their adoption.

The first challenge for presenting a clear vision for eConsults is to overcome the confusion for ordering providers and patients about what an eConsult entails and when it is appropriate to use one. Ordering providers may not recognise the goal of an eConsult and misinterpret eConsults as a way to expedite a rheumatology office visit. There can be a great deal of turnover in primary care; new providers may not be familiar with eConsults, which is why ongoing educational efforts with primary care providers are beneficial. It can be difficult for patients to understand what exactly an eConsult is and how it can be used to gain rheumatology insight into their symptoms. Both ordering provider and patient education are essential, but they require investment of time and

enthusiasm on the part of rheumatologists. Once ordering providers are familiar with eConsults, it becomes easier to explain them to patients.

It can be very helpful to use an online, institution-specific resource with examples and instructional videos on how to order an eConsult, including ordering steps and screenshots of each part of the pathway, from start to finish. eConsult information, tips, and pearls for appropriate use can be reviewed at primary care meetings in order to provide updated information to a large audience. In addition to a clear understanding of an eConsult and its purpose, the ordering provider must understand the importance of relevant, available information to ensure complete and appropriate recommendations. In the paper by Keely et al.⁵ discussed previously, the reviewing provider noted "I could possibly answer this consultation with an eConsult, but information is missing" in 20.7% of faxed referrals.⁵ This highlights the frequency of a common pitfall of eConsults, the availability of pertinent information. The challenge of missing information in the history, review of systems, and physical exam limits the efficacy of the eConsult, leading to an unsuccessful eConsult and potential patient frustration.

A second instance of an ongoing challenge involves the perception of the role of a rheumatologist from the viewpoint of the ordering provider, the patient, and even the rheumatologist. Ordering providers often view rheumatologists as chronic pain and fatigue specialists, or as interpreters of a 'rheumatology panel' to diagnose a 'zebra', when in fact most diagnoses turn out to be 'horses'. Patients often think a rheumatologist is a doctor who specialises in managing and treating their pain and fatigue differently than their primary care providers (PCP), confirming a diagnosis based upon symptoms that they have had for a long period of time, and diagnosing, managing, and treating all autoimmune diseases (even autoimmune diseases outside of rheumatology). Thinking back to medical school, the rheumatologist was the master detective, the super internist. Many rheumatologists view themselves in

that role, along with caring for a multitude of diseases with complex characteristics and treatments. The role of the rheumatologist can thus be distinguished differently depending on who is asked, what information is viewed online, or what permeates social media. This misperception is often compounded by eConsults, which are often concise, focused analyses of limited information.

A third challenge for eConsult use is the dedicated investment of the healthcare system. The healthcare system must view eConsults as an important and valuable tool to provide a specialist opinion without unnecessary testing, thereby avoiding months of waiting for an office visit that may not be needed, addressing patient concerns in a timely manner, and providing insight for patients in rural and underserved areas. It is mandatory to have reimbursement that is adequate and appropriate for both the ordering provider and the consulting provider. This can be a steep mountain to climb and may not work for every healthcare system. It is important to recognise new patient rheumatology referral volume and the financial implications of visit types offered to patients. Healthcare systems must 'buy in' to the use of eConsults, support the growth of an eConsult programme, foster understanding, and analyse data and outcomes to ensure success.

Ultimately, it is important to acknowledge the challenges that exist but try to use eConsults strategically, when feasible, in a healthcare system. The perception that every patient with joint pain or a positive antinuclear antibody (ANA) must have an in-person office visit with a rheumatologist, regardless of the clinical picture, reason for ordering the test, or location of the patient, is outdated and unsustainable. Rheumatologists need to use their expertise in a targeted manner. If eConsults can be optimised, there is a significant benefit for ordering providers, rheumatologists, patients, and the healthcare system overall.

eCONSULT TRIAD: PATIENTS, PRIMARY CARE PROVIDERS, RHEUMATOLOGISTS

eConsults involve the essential triad of the ordering provider (most often a PCP but can also be another specialist), the rheumatologist, and the patient. Each member of the triad must have a clear understanding of the goal and recognise that an eConsult is a billable service, a way of providing asynchronous virtual recommendations and communication. Most often, a board-certified rheumatologist completes the eConsult on behalf of a particular academic division or group. However, involvement of advanced practice providers, such as nurse practitioners and physician assistants, and rheumatology fellows, should be considered under the supervision of an attending rheumatologist. The ordering provider must view the information needed for a successful eConsult analogous to that required for a traditional new patient referral. The aim is a high-value eConsult that includes critical referral elements, including a prepared patient with documentation of consent, a detailed reason or question, supporting pertinent data, and closing the loop after recommendations are reviewed.⁹ If the patient has a rash or joint swelling, a picture can be extremely valuable. All relevant testing results must be available for review. For some eConsult programmes, there is a verbal component. The verbal component involves discussion of the patient with the ordering provider, most often as a phone call. Discussion of the patient's clinical picture can be extremely beneficial and represents an excellent opportunity for teaching and bridging knowledge gaps. The incorporation of a verbal component truly redefines the antiquated 'curbside consult', providing details that may not be apparent when reviewing the chart.

When we think about the components of an appropriate rheumatology referral or eConsult, it is important to recognise the knowledge gaps for PCPs and how we can use eConsults for educational purposes in addition to providing recommendations for the patient's clinical picture.

A qualitative study by Lee J et al.¹⁰ aimed to identify content themes in PCP questions and rheumatology recommendations using qualitative and quantitative analysis of eConsults. The most common knowledge gaps involve differentiating inflammatory from noninflammatory arthritis, using caution in interpreting abnormal laboratory tests without symptoms, managing chronic gout, evaluating elevated creatine phosphokinase levels, and differentiating C-reactive protein (CRP) from high-sensitivity CRP. A study by Lee J et al.¹⁰ emphasises the theme of our ability to also deliver crucial education with eConsult recommendations in addition to providing timely recommendations for a patient's symptoms and/or testing results. Future studies are needed to determine knowledge gaps from the PCP perspective and the success of the eConsult delivered education.

It is extremely important for the patient to understand what an eConsult is and the follow-up after the rheumatology recommendations are provided. For most electronic medical records, the eConsult note, including the recommendations, is released directly to the patient, coinciding with delivery to the ordering provider. The language of the eConsult is directed towards the ordering provider and not the patient; each member of the triad must acknowledge this. Follow-up questions and even frustration directed at the ordering provider or the rheumatologist can occur if this is not clear. Sometimes the ordering provider schedules a brief visit after the eConsult is completed to review the recommendations and answer any questions the patient might have. If the patient is prepared for this process, the number of questions after the recommendations are "made live" is reduced. The patient must recognise that the purpose is to answer a specific question. If the patient has been struggling with chronic symptoms that are relatively nonspecific, such as chronic joint pain, chronic fatigue, or chronic back pain, there is a ceiling as to how much the rheumatologist can recommend in terms of additional workup or diagnostic possibilities. All members of the triad contribute to the success of eConsults, allowing for timely

and efficient clinical care along with enhanced communication.

EXAMPLE OF CLINICAL USE: POSITIVE ANA-RELATED CARE

A positive ANA is a common clinical question for rheumatology, and eConsults have value for improving care. First, the ability to leverage the rapid turnaround and narrative control, leaving a positive ANA to sit unaddressed for months, merely allows it to fester, compounding the time required during the rheumatologist's visit to unravel premature conclusions made by non-rheumatologists. Second, eConsults allow for better involvement in the referral process, while the positive predictive value of a referral for a positive ANA is quite low, the risk of a delayed lupus diagnosis is exceptionally high.¹¹

A pre-post study by Patel et al.²⁰ was published in 2020 to evaluate the impact of eConsults on wait times and resource utilisation for positive ANA outpatient referrals. They concluded that eConsults were effective in addressing positive ANA referrals without a significant increase in resource utilisation, along with an associated decrease in wait times for in-person visits. It should be noted that 76% of the positive ANA referrals did not require in-person follow-up after the eConsult recommendations. This compares to the study by Rostom et al.,⁷ with 38% of eConsults not requiring in-person follow-up.⁷ One caveat is that this study only reviewed positive ANA referrals in a population majority without a high risk of ANA-associated rheumatic disease (older White males).

The University of Colorado, Boulder, Colorado, USA, employs an eConsult first model for positive ANA referrals, while all other referrals follow an opt-in eConsult model. The eConsult first model helps refine the clinic question to more effectively contribute to moving the patient's care forward by either addressing the underlying concern about the ANA or shepherding the patient into rheumatology care.

Through effective application of eConsults, positive ANA-related care can be greatly improved for patients, referring providers, and consultants by leveraging the eConsult's role as a communication tool.

LIMITATIONS OF eCONSULTS

As discussed above, eConsults are particularly well-suited to bridge the referral-to-consultation gap. However, not all questions require eConsults in this manner, and there are no guidelines or best practices in the literature for optimal use of eConsults.¹³ In rheumatology, eConsults will typically not provide a definitive diagnosis to the patient. Instead, they are most effective when addressing questions that need specialist insight and educational guidance, particularly those that clarify diagnostic uncertainty or support primary care decision-making.^{9,10} Additionally, attempts to use eConsults as a substitute for traditional face-to-face consultations are generally ineffective and risk undermining their intended purpose.^{9,13} These limitations require additional careful study to facilitate the development of best practice guidelines in rheumatology, as eConsults need to be used in a focused and targeted manner.

DISCUSSION

eConsults are an evolving concept within telerheumatology. There are several potential benefits to ordering providers, rheumatologists, and, most importantly, patients. eConsults improve access to rheumatology expertise at a time when the rheumatology workforce cannot match the demand. eConsults reduce wait times and allow for more timely appointments for patients who require an in-person office visit. In addition, objective data regarding wait times can be obtained to ensure improvement. eConsults foster improved communication and relationships with PCPs; this has become a lost art in many ways. eConsults allow for clear and secure documentation of recommendations. eConsults offer an efficient modality for rheumatology expertise, taking into consideration the appropriate allocation of

time and focus on complex and challenging patient diagnosis. When used successfully, eConsults can be cost-effective, avoiding unnecessary and often expensive testing. Finally, eConsults enhance the goal of early diagnosis and targeted treatment by making rheumatology expertise easily obtainable in real time. eConsults represent an extremely valuable tool to improve communication with patients and referring providers, allowing patients to have appropriate and timely care regardless of where they reside.

FUTURE DIRECTIONS

eConsults represent a crucial communication tool that has room to grow and improve despite being in its early stages within rheumatology. The authors conducted an informal email survey of board-certified rheumatologists at a variety of academic institutions experiencing a high volume of new patient referrals, asking them if they use eConsults. The questions were 1. 'Does your division provide rheumatology eConsults and, if so, how many faculty members are involved in completing eConsults?' 2. 'What are the most common reasons for eConsults?' 3. 'Do you use eConsults as part of triaging new rheumatology referrals?' 4. 'Do you feel eConsults are beneficial or not?' and 5. 'Would you find rheumatology eConsult standardised guidelines helpful?' Some did not use eConsults at all, while some employ other strategies such as preconsultation record review for addressing the high volume of new patient referrals or clinical questions. Sometimes, faculty members use a rotation schedule for responding to eConsults. What remained universal for nearly every rheumatologist that responded was the reason why rheumatology eConsults are ordered. The most common reason was a positive ANA, and the other common reasons included elevated erythrocyte sedimentation rate, elevated CRP, positive rheumatoid factor, and elevated creatine phosphokinase. Joint pain, back pain, and fatigue were certainly represented, but surprisingly, gout, osteoarthritis, osteoporosis, and fibromyalgia were much less common reasons. Some institutions

use eConsults to triage new patient referrals and recommend pre-visit testing. Overall, eConsults were deemed beneficial, provided there was adequate compensation and time to respond. Most felt that eConsult standardised guidelines would be helpful. Caution must be used when contemplating these responses, given the small response number and lack of formal data analysis.

Regarding ANA testing, throughout the entirety of training and beyond, it is often the most common question facing rheumatologists. Educational sessions can be offered to primary care providers outlining the importance of not ordering

ANA testing for nonspecific symptoms and avoiding serial ANA testing. However, it is unlikely this will result in decreasing the amount of ANA orders. Even if current rates were maintained, the rate of ANA positivity is rising. Instead, the focus must be on efficient and timely ways to address positive ANA tests rather than increasing available appointments or the number of providers. There is a great need for additional study on how to successfully implement an eConsult programme, develop standardised guidelines, define a successful eConsult, and determine the cost-effectiveness and benefit.

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