Spring 2025, Volume 35, Number 1

CRAJ SCR

The Journal of the Canadian Rheumatology Association

Spotlight on:

Applying Artificial Intelligence (AI) in Rheumatology

Consider CIMZIA®

- An anti-TNF with a molecular structure that does not contain a fragment crystallizable (Fc) region, which is normally present in a complete antibody[1]*
- Over 14 years of clinical experience combined across all indications in:†
  - **Rheumatoid arthritis (RA) – 2009; Psoriatic arthritis (PsA) – 2014; Ankylosing spondylitis (AS) – 2014; Plaque psoriasis (PsO) – 2018; and Non-radiographic axial spondyloarthritis (nr-axSpA) - 2019**[1,2]

CIMZIA (certolizumab pegol) in combination with MTX is indicated for:
- reducing signs and symptoms, including major clinical response, and reducing the progression of joint damage as assessed by X-ray, in adult patients with moderately to severely active RA.

CIMZIA alone or in combination with MTX is indicated for:
- reducing signs and symptoms and inhibiting the progression of structural damage as assessed by X-ray, in adult patients with moderately to severely active PsA who have failed one or more DMARDs.

CIMZIA is indicated for:
- reducing signs and symptoms in adult patients with moderately to severely active RA who do not tolerate MTX.
- reducing signs and symptoms in adult patients with active AS who have had an inadequate response to conventional therapy.
- the treatment of adults with severe active nr-axSpA with objective signs of inflammation as indicated by elevated CRP and/or MRI evidence who have had an inadequate response to, or are intolerant to NSAIDs.
- the treatment of adult patients with moderate to severe PsO who are candidates for systemic therapy.

Consult the product monograph at https://health-products.canada.ca/dpd-bdpp/index-eng.jsp for important information about:
- Contraindications in active tuberculosis or other severe infections such as sepsis, abscesses and opportunistic infections; and moderate to severe heart failure (NYHA Class III/IV)
- The most serious warnings and precautions regarding serious infections and malignancy
- Other relevant warnings and precautions regarding worsening congestive heart failure and new onset CHF; hepatitis B virus reactivation; hematological reactions; neurologic reactions; use in combination with other biologic medicines; monitoring for patients in surgery and those being switched to another biologic DMARD; hypersensitivity symptoms; latex sensitivity; formation of autoantibodies; administration of live or live-attenuated vaccines; use in patients with severe immunosuppression; possible erroneously elevated activated partial thromboplastin time (aPTT) assay results in patients without coagulation abnormalities; women of childbearing potential; pregnancy and breastfeeding; caution in infants exposed in utero; caution in geriatric patients
- Conditions of clinical use, adverse reactions, drug interactions and dosing instructions

The product monograph is also available through Medical Information Services at 1-866-709-8444.

* Comparative clinical significance unknown.
† Clinical significance unknown.
CRP: C-reactive protein; DMARDs: disease-modifying anti-rheumatic drugs; MRI: magnetic resonance imaging; MTX: methotrexate; NSAIDs: nonsteroidal anti-inflammatory drugs; TNF: tumor necrosis factor alpha.

1. CIMZIA® Product Monograph. UCB Canada Inc. November 13, 2019. **2.** Health Canada Notice of Compliance Database. Available at https://health-products.canada.ca/noc-ac/search-recherche.o;jsessionid=C19864F3D26560FC593BFC094A8B0CD1?lang=en. Accessed October 13, 2022.

CRA-24-006E

REVIEWED BY PAAB

Pr cimzia® (certolizumab pegol)

Perils of Publishing Papers

By Philip A. Baer, MDCM, FRCPC, FACR

In 2013, I read a paper on treatment trends in psoriasis and psoriatic arthritis (PsA). The lead author was an American dermatology researcher, Dr. April Armstrong.[1] As I noted in a *Journal of the Canadian Rheumatology Association (CRAJ)* editorial on the topic of cyberbullying in 2015,[2] in the instructions regarding the corresponding author, I found a comment that I had never before seen in a scientific paper. The author provided her email address, followed by instructions indicating that her address was provided "for intellectual questions regarding the article only."

Fast forward to July 2024, and I was listed as the corresponding author for a scientific manuscript reporting the results of the ADAGIO study: "A Canadian Retrospective Chart Review Evaluating Concomitant Methotrexate De-escalation Patterns in Patients with Rheumatoid Arthritis Treated with Biologic or Targeted Synthetic DMARDs" published in the open access journal *Rheumatology and Therapy*. Did I think to use a disposable email address? No, I just listed my most commonly used email address. A major error on my part.

The article was published on July 9th, 2024. Since then, no one has corresponded with me about the scientific merits of the paper, which our team of Canadian authors and our statistical analysts are ready to defend. Of course, being published as open access, no one needs to write to me to request a reprint.

However, my SPAM folder is being bombarded by emails linked to having publishing an article. At first, I discarded them without reading beyond the subject line. But as they kept coming, I started saving them as raw material for this *CRAJ* article. Between July 29th and September 16th, 2024, I counted 56 emails, more than one a day.

Publishing our paper did not unearth any Nigerian princes needing my help to unlock millions of dollars in a secret bank account. However, I did learn that my talents were apparently sorely needed in many aspects of science and medicine. Those reaching out to me included "George Orwell", who died of tuberculosis (TB) in 1950, and "Selena Gomez", who has severe lupus which led to a kidney transplant, but did not require my expertise on that matter. George said on September 15th, 2024:

> We hope you're doing well. We'd like to invite you to submit your research to our journal, Rehabilitation Medicine. The most recent edition is lacking one article. Could you kindly aid us by contributing an article to this edition of the journal by September 29, 2024? Please consider contributing a research paper, review paper, mini-review, or case study. We believe that a two-page paper will be manageable for you, given your expertise, even on short notice. We have faith in your ongoing availability to assist us.

George, your faith in me is misplaced.

Selena said:

> Austin Journal of Orthopedics & Rheumatology with Impact factor 2.4 very glad (sic) and honored to request you to submit a manuscript on your current research area, which falls under journal scope.
>
> All the short/full length manuscripts are accepted for publication in the journal and every published manuscript will be given DOI number after publication. Minimum Article Processing Charges will be charged for the manuscripts, which are submitted on or before September 15th, 2024.
>
> Kindly submit your manuscript as an attachment to this mail.

Selena, it's nice to know that your journal features a 100% acceptance rate for submitted manuscripts. From your email, it looks like proper grammar is not required.

A sample of other emails follows:

Rossella wrote:

> Hope this mail finds you in high spirits. We are following your publications and research works, those are very interesting. Your work is too valuable to us *(Really?)* and it's perfectly fit for our journals. Hence, we kindly request you to submit your worthy articles towards our Journal. Your contribution adds value towards the "Annals of Case Reports" growth and also helps in releasing the upcoming issue.

Another new friend, Angela, chimed in:

> Respected Doctor, (Journal of Clinical Case Reports Medical Images and Health Sciences (JCRMHS) An open access, peers reviewed, Academic

Continued on page 5

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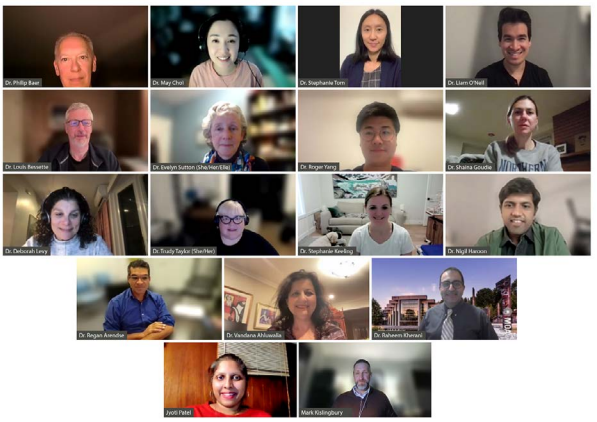
Mission Statement. The mission of the *CRAJ* is to encourage discourse among the Canadian rheumatology community for the exchange of opinions and information.



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> and Research, Online and Print Journal ISSN: 2832-1286 Impact Factor: 1.6*.) Based on your eminence and contribution towards the research community we request you to publish your work in our journal. You are invited to submit your paper for the Current Issue of our Journal. Current Issue: Issue 02 (2024). Publication Charges will be waived off, if you submit your manuscript on or before October 15th, 2024 (DOI charges are applicable).

Rita had me confused with my son, who is an actuary:

> We contacted you on 7th of August, regarding a Special Issue entitled "Statistical Research on Missing Data and Applications", to be published in the journal Mathematics (ISSN 2227-7390, IF 2.3). Dr. Soeun Kim is serving as Guest Editor for this issue. Based on your expertise in this field, we think you could make an excellent contribution. This Special Issue is focused on the topic of statistical research on missing data and applications. Papers related to the theoretical or methodological aspects of statistical methods for dealing with missing data, as well as papers focused on the application of analyzing data with missing values, are welcome to be submitted to this Special Issue.

Other than George, I notice my new correspondents are all presenting as women. I can't help but wonder if men would be writing to me if my name was Phyllis instead of Philip. They are also very persistent, frequently scolding me for ignoring their initial emails.

I was also invited to present our research at international conferences. Examples:

> The 21st Annual Congress of International Drug Discovery Science & Technology (IDDST-2025)
> Invitation Letter:
> Dear Friend, Greetings and Warm Wishes from the Committee of IDDST. We want to give you a brief update regarding the 2025 Annual Congress. IDDST Committee is delighted to invite you to Kobe, Japan for 21st IDDST-2025, which will be held during May 12-14, 2025 (Next Year) and present a talk on A Canadian Retrospective Chart Review Evaluating Concomitant Methotrexate De-escalation Patterns in... If you plan to change a topic, please reply this email and send the speech title to Ms. Irene at your earliest convenience. As soon as we receive this information, we can then finalize the details of your presentation.

Alma first wrote to me as follows:

> We are honored to invite you to the 13th World Gene Congress, which will be held at Crowne Plaza Blancchardstown, Dublin, Ireland, from October 16 to 18, 2024. Based upon your background in the field, it is an honor to welcome you to deliver a talk about A Canadian Retrospective Chart Review Evaluating Concomitant Methotrexate De-escalation Patterns in Patients with Rheumatoid Arthritis Treated with Biologic or Targeted Synthetic DMARDs as Speaker at this conference. What do you think?

I didn't think much of this or respond, but Alma is persistent. Her second email:

> Hope my e-mail finds you well. I'm writing from conference organizing committee. Sorry to bother you. I just want to check if you have a plan to join our forthcoming meeting "The 14th World Gene Convention 2025", which has been scheduled on April 23-25, 2025, in Nara, Japan, and give a speech on A Canadian Retrospective Chart Review Evaluating Concomitant Methotrexate De-escalation Patterns in Patients with Rheumatoid Arthritis Treated with Biologic or Targeted Synthetic DMARDs.

Other conferences I had never heard of invited me to present our research findings, including the Global Conference on Rheumatic and Autoimmune Disorders (RhAD-2025), and I was also invited to become a reviewer for many obscure journals.

My plan: don't submit to any of these journals, don't plan to attend any of these conferences, and set up an email filter focused on the word "Greetings," which seems to be a common theme in these invitations.

Philip A. Baer, MDCM, FRCPC, FACR
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Scarborough, Ontario

References:
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2. Baer, P. Cyberbullying: Online Anxieties. Available at *http://craj.ca/archives/2015/English/Spring/Editorial.html*. Accessed March 30, 2025.

The complete version of this article is available online at www.craj.ca.

Reclaim Your Time

AI Scribes for Rheumatologists

Canadian Rheumatology Association (CRA) has negotiated **preferred pricing** and **1-month free trials** for CRA members.

Scribeberry and Heidi Health are developing **rheumatology-specific AI scribes** to help rheumatologists achieve high-quality clinical documentation and smooth onboarding.

AI SCRIBES USE ADVANCED VOICE RECOGNITION

to "understand" the conversation between you and your patient. It automatically creates a detailed clinical note, including relevant medical information, diagnoses, and treatment plans. This saves you time on documentation, reduces administrative burden, and allows you to focus more on your patients.

CRA AI SCRIBES PILOT PROJECT

CRA member volunteers participated in a 4-week pilot project in November and December 2024 to trial Scribeberry and Heidi Health, two popular AI scribe technologies.

PILOT PROJECT FINDINGS

The overall experience was positive for the majority of participants. Reported benefits include **time savings, reduced cognitive load** and **enhanced patient experience** with more time spent interacting with patients instead of a computer. Some **challenges** included lack of EMR integration, note formatting and styling restrictions and learning curve to optimize templates and embed into workflow. Vendors have been notified, and they are addressing the identified issues.

TECHNOLOGY ADVANCEMENTS

The CRA is collaborating with Heidi Health and Scribeberry by providing member feedback. As a result of this feedback, the vendors have made and continue to make rheumatology-specific advancements to support CRA members and advance the AI technology.

RECOMMENDATION

Although not perfect, enough people benefited that we recommend that all members take advantage of the CRA's exclusive 4-week FREE trial for both AI scribe platforms. Try it out for yourself!

HERE'S WHAT YOUR COLLEAGUES ARE SAYING:

"I just love this system, it's changed my life. This program is easy. I find the patients are fascinated by it and find it helpful. I don't look at the screen of the computer for encounters."

Dr. Wayne Potashner,
CRA member and pilot project participant

"Using AI scribes has transformed my practice. I'm able to focus on the patient's clinical status as opposed to focusing on the computer. The burden of documentation has been eased, as the note is done at the end of each visit, letting me finish the day with a smile!"

Dr. Vandana Ahluwalia,
CRA member, Informatics Task Force co-chair

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CRA members, get started with your **FREE 4-week trial** today!
Learn more and sign up at **rheum.ca/resources/ai-scribes/**

Improving Triage Accuracy of Unclear Rheumatology Referrals: A Quality Improvement

By Stephanie Gottheil, MD, FRCPC; Chiara Gottheil, MSc; and Joe Carson, MScQIPS

Patients with early inflammatory arthritis (EIA) need to be seen urgently to initiate treatment. Our community rheumatology clinic in London, Ontario, was concerned that the assessment of EIA cases was being unnecessarily delayed when referrals lacked sufficient detail to be triaged accurately. In a prior quality improvement project, we redesigned our triage process to include a previously validated patient survey (the EIA Tool) to identify referrals with EIA. In this study, we aimed to evaluate the sensitivity and specificity of the new triage process for referrals with unclear urgency after 12 months of use.

All referrals accepted by one rheumatologist were included from April 2020-July 2022. During the intervention period, we implemented the new triage process. The rheumatologist triaged all referrals as urgent, non-urgent, or unclear. Patients with unclear urgency were asked to complete the EIA Tool prior to being scheduled. Their survey result determined a triage score of urgent or non-urgent, and consultations were then scheduled accordingly. Post-consultation, the rheumatologist determined the 'true' urgency score, while blinded to the pre-consultation score. Data were collected prospectively on all incoming referrals. We analyzed the data using descriptive statistics and calculated the sensitivity and specificity of the baseline and new triage processes.

The 16-month baseline period (April 2020 to July 2021) included 1,296 referrals; 647 (50%) were triaged as urgent. The 12-month intervention period (August 2021-July 2022) included 888 referrals; 508 (57%) were triaged as urgent, and 97 (11%) were triaged as unclear. The EIA tool was completed in all unclear cases; 93 patients submitted the survey online, and 4 patients without email access completed the survey by phone. Most patients (86%) completed the survey within one day of receiving it. Unclear cases had a cycle time from referral to scheduling of five days, compared to three days for those who were not sent the EIA tool. The sensitivity to identify urgent cases was 97% during the intervention versus 85% at baseline. The specificity during the intervention was 59% versus 70% at baseline.

The EIA Tool helped us detect 97% of truly urgent cases, thereby reducing the risk of delayed treatment caused by triage error. We have since spread this process to three other rheumatologists in our clinic. Our next step will be to analyze urgent referral volumes and then modify our scheduling algorithm accordingly to ensure that all urgent referrals are prioritized.

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Exploring AI's Potential in Rheumatology: Early Steps Toward Innovation

By Carrie Ye, MD, FRCPC, MPH; and Claude 3.5 Sonnet (AI assistant)

As I picture a busy rheumatology clinic, I see the traditional practice of rheumatology—detailed patient histories, careful physical examinations, thoughtful interpretation of lab results and patient-focused counselling. While artificial intelligence (AI) hasn't yet transformed our daily practice, researchers are exploring how it might one day enhance the care we provide to patients with rheumatologic conditions. As both a practicing rheumatologist and AI researcher, I'm cautiously optimistic about the potential intersection of this technology with our specialty.

Rheumatology faces several challenges that make it an interesting testing ground for AI applications. Our specialty continues to experience workforce shortages, with patients often waiting months for appointments. The diseases we treat are complex, requiring careful monitoring and frequent adjustments to powerful medications. Many of our diagnostic tools, from joint examinations to magnetic resonance imaging (MRI) scans, rely heavily on pattern recognition—an area where AI has shown promise in other fields.

In our research lab, Joint AI, we're in the early stages of investigating several potential AI applications. One project explores the possibility of using AI to assist with referral triage. The goal is to develop a system that could help prioritize referrals. While still in development, this could potentially help ensure patients with time-sensitive conditions receive expedited care.

Another preliminary project addresses the challenge of patient education. We're investigating whether a specialized large language model chatbot (ChatRheum), drawing exclusively from peer-reviewed rheumatology literature and validated patient education materials, could provide reliable information to patients between visits. Unlike generic AI chatbots, our proposed system would use retrieval-augmented generation (RAG) to ensure responses are grounded in verified medical sources. However, significant testing and validation will be needed before any such system could be considered for clinical use.

We're also exploring computer vision AI applications in rheumatology. Our early-stage research includes training AI models to detect joint effusions (swelling) in hand photographs and videos. While initial results show promise, extensive validation will be required to determine whether such technology could reliably assist in disease diagnosis and monitoring, particularly for patients in remote regions of Canada.

One of our research projects that has already been used to answer clinical questions involves investigating whether AI could extract bone density measurements from routine computed tomography (CT) scans—a technique called "opportunistic CT-DXA." The focus now is on scaling this project to large at-risk populations such as men with prostate cancer on androgen deprivation therapy, to identify osteoporosis in these men who undergo CT scanning for cancer staging and monitoring.

As we conduct this research, we maintain a clear-eyed view of both the potential and limitations of AI in medicine. Any AI systems would need rigorous validation in diverse patient populations to ensure they work equally well for all demographics. Questions of data privacy, clinical workflow integration, detecting and mitigating bias, and the appropriate role of AI in clinical decision-making must be carefully considered.

Looking ahead, I see AI as a potential tool to complement, not replace, clinical expertise in rheumatology. While the technology shows promise, we must remember that the core of rheumatology practice remains the thoughtful application of clinical judgment and the essential doctor-patient relationship. Our research aims to explore how AI might one day support these fundamental aspects of care. These technologies represent exciting possibilities for the future of rheumatology care, but their development must be guided by evidence, ethical considerations, and most importantly, patient benefit.

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Artificial Intelligence in Rheumatology: Friend or Foe?

By Carol Hitchon, MD, FRCPC, MSc; Liam O'Neil, MD, FRCPC, MHSc; and Pingzhao Hu, PhD

The incorporation of artificial intelligence (AI) into daily life and medical sciences is a rapidly emerging field. There is now pervasive monitoring of internet searches to target information presented during personal online search and social media feeds, writing tools such as ChatGPT (Generative Pre-trained Transformer), and dictation tools such as the AI scribes being supported by the Canadian Rheumatology Association. In research settings, large datasets containing a vast amount of clinical, imaging, and biological data are being analyzed to explore patterns of data to predict a variety of clinical states and outcomes. AI clearly has potential to be a powerful clinical and research tool, but caution is needed when interpreting AI studies and using AI tools.

There are several published guidelines that aid the interpretation of clinical studies using artificial intelligence models, including the updated "Minimum Information about CLinical Artificial Intelligence Modelling "(MI-CLAIM) checklist,[1] and guidance on the ethical incorporation of AI tools into clinical practice.[2] As applied to clinical studies, these guidelines stress the importance of choosing clinical data sets that are representative of the population under study and described in detail with clear unambiguous terminology. Accuracy and reproducibility of the generated models should be compared ideally to clinician-based models (still the "gold standard") as well as to other machine learning models. Indeed, combined AI and clinician-based models often outperform clinician only based models. These quality assurance steps are critical as "garbage in leads to garbage out".

In rheumatology, many groups in Canada and internationally are mining large clinic and biological data sets to come up with prediction models for categorizing clinical phenotypes, predicting clinical outcomes and understanding biological mechanisms. Less studied (in rheumatology) is the application of AI methods to radiographic image interpretation. Such studies have been used to evaluate magnetic resonance imaging scans (MRIs), computed tomography scans (CTs), mammograms, and ultrasounds in other specialties. In rheumatology, plain radiographs remain the most widely used imaging tool to assess joint damage in inflammatory arthritis and scores for joint damage are considered the "gold standard" for assessing damage progression in clinical studies. However manual scoring of radiographs for damage is time-consuming, requires expertise not always available, and thus is not practical for the busy rheumatologist. A few groups have used machine learning, a type of AI, to evaluate and quantitate radiographic joint damage in inflammatory arthritis.

Our research team is using AI methods to develop a tool to assist clinicians and researchers to score standard radiographs from patients with rheumatoid arthritis.[3] Our first challenge was to have the computer accurately detect the target joints within the radiograph image. We developed an algorithm using a state-of-the-art image object detection tool, "You Only Look Once" (YOLO), to detect specific objects in images commonly seen in daily life. We then fine-tuned this program on a publicly available dataset of pediatric joint radiographs and validated the detection tool using adult radiographs obtained from patients followed for up to 10 years as part of the Manitoba Early Arthritis cohort. The joint detection tool is able to identify and label the target joints with excellent accuracy in both pediatric and adult radiographs containing both hands or one hand. Our second challenge is to have the computer "score" the target joints for the presence of joint space narrowing and erosions in order to calculate the Sharp van der Heidje damage score. For this challenge we used serial radiographs obtained from patients followed in the Canadian Early Arthritis Cohort (CATCH) which had been scored by Dr. Van der Heidje and her team. These scored radiographs are considered the "gold standard" for assigning joint damage scores.

Using the CATCH radiographs, we developed an algorithm using machine learning methods to score the joints and combined this with the joint detection tool. We compared the accuracy of our algorithm to the results obtained using different machine learning methods commonly in use. The algorithm demonstrates very encouraging findings with good accuracy that, in some instances, exceeds that of other machine learning methods. We are working on fine tuning the algorithm to enable enhanced ongoing learning to improve the model's performance over time. Our model will need to be replicated in other large imaging datasets that include RA radiographs with a wide range of damage scores. Our algorithm was designed for RA radiographs and similar studies in other arthropathies that may have distinct radiographic appearances are also needed.

The third challenge is to develop a user-friendly platform whereby clinicians can input a radiographic image

Artificial Intelligence in Rheumatology: Friend or Foe?

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and receive accurate joint damage scores. These scores can then be used to monitor patients for joint damage. This ongoing work is a practical example of how AI technology can be used to assist day-to-day clinical rheumatology practice, particularly in settings with limited radiology resources, or in research settings where high volume radiographic scoring is needed.

AI is clearly a potentially powerful clinical and research tool that, in time, can be feasibly incorporated into daily clinical practice to enhance targeted treatment of rheumatic disease. However, much caution and careful consideration of ethical principles are needed prior to widespread use.[2] Importantly, AI will never replace the clinical acumen of rheumatologists.

Glossary:[4]

Artificial Intelligence: any reasoning-based intelligence capable of analysis that comes from computer systems.

Machine learning: subset of AI whereby a computer gets "smarter" by "learning" from its mistakes.

Neural networks: style of machine learning that tries to mimic the way human brains work with a vast array of "neurons" that either turn on or not based on the inputted data.

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AI-Powered Documentation in Rheumatology: Evaluating the Benefits and Limitations of Ambient Scribes

By Ramandip Singh, MD, FRCPC

CLINICAL DOCUMENTATION CHALLENGES

Clinical documentation in the electronic health record (EHR) era presents substantial challenges, impacting healthcare efficiency and the quality of patient care. The shift from paper-based records to digital systems has increased administrative burdens, diverting clinicians' focus from patient interactions. Ambient scribes —AI-powered tools that passively listen to clinician-patient conversations and generate real-time clinical notes —offer a promising solution to these challenges. Over the past year, I have implemented and evaluated ambient scribes in my rheumatology practice, examining their impact across multiple domains. Studies assessing their effectiveness have focused on key parameters, including accuracy, patient satisfaction, clinician satisfaction, documentation time, and privacy compliance. While these tools hold significant promise, their performance varies across these metrics.

EVALUATING AMBIENT SCRIBES: KEY PERFORMANCE DOMAINS

Accuracy

The ambient scribes I tested produced generally reliable notes, particularly for structured follow-up visits involving conditions like inflammatory arthritis and polymyalgia rheumatica. Even in cases with well-defined but systemically involved diseases such as vasculitis, the AI generated high quality notes.

However, when extensive symptomatology was present alongside an unclear diagnosis, the ambient scribe often included unnecessary information ("note bloat") or omitted critical details. These notes required careful review and manual refinement to ensure accuracy and clinical relevance.

Some challenges previously identified in earlier digital scribe implementations—such as lack of standardization and difficulty adapting to nuanced clinical language—have been partially addressed in newer systems through customizable note templates and improved natural language models.

Documentation Time

Ambient scribes generally reduce documentation time by minimizing the need for manual note-taking and streamlining clinical workflows.

In a large-scale study, physicians using ambient scribes saved approximately one hour per day, based on over 300,000 patient encounters during a 10-week period (Trivedi et al., 2024). Celi et al noted a 20.4% reduction in time spent on notes per appointment, and a 30.0% decrease in after-hours work per day.

However, efficiency gains may be limited in more complex encounters, where AI-generated notes often require extensive review, editing, and correction to ensure clinical accuracy and relevance. This underscores the need for continued improvement in contextual accuracy and adaptability.

Clinician Satisfaction

Reducing the need for constant typing or jotting of notes has allowed for more natural and engaging conversations with my patients. Several studies have demonstrated non-time-related benefits of ambient scribes including a significant reduction in clinician burnout (Misurac et al., 2024). Kane et al. (2024) also observed reduced task load and cognitive burden among clinicians, suggesting that ambient scribes may alleviate the mental demands of documentation.

These improvements suggest that clinician satisfaction is supported not just by saved time, but by ambient scribes' ability to reduce documentation-related stress and improve day-to-day work experience.

Patient Satisfaction

While I have not formally measured patient satisfaction in my own practice, my clinical impressions align with these findings: patients appear more engaged, and interactions feel less disrupted by documentation tasks. A study evaluating patient experiences with ambient scribes found that 71% of patients reported spending more time speaking with their physician, and 81% observed that their physician spent less time looking at the computer screen compared to previous visits (Tierney et al., 2024).

AI-Powered Documentation in Rheumatology: Evaluating the Benefits and Limitations of Ambient Scribes

Continued from page 11

Notably, all patients stated that the ambient scribe either had no effect or enhanced their visit, and all reported feeling neutral to very comfortable about an AI tool being used during their visit.

Privacy Compliance

Ambient scribe vendors operating in Canada—such as Scribeberry and Heidi—comply with federal and provincial health privacy regulations, and their servers are physically located within Canada, ensuring data residency. However, data residency is not the same as data sovereignty. If a vendor uses U.S.-based infrastructure or is owned by a U.S.-domiciled company, Canadian data may still be subject to the U.S. CLOUD Act, which allows U.S. authorities to access data held by American companies—even if stored abroad.

While this concern extends beyond ambient scribes alone, it highlights the need for a clear national framework to address data sovereignty and the legal reach of foreign jurisdictions. Oversight of cloud infrastructure and vendor ownership will be key to protecting the privacy of Canadian health information.

LOOKING AHEAD: OPTIMIZING AI SCRIBES IN CLINICAL PRACTICE

Establishing a Robust Evaluation Framework

While traditional metrics like accuracy, documentation time, and user satisfaction offer useful insights, additional measures—such as organization, internal consistency, completeness, coherence, relevance, efficiency, and error rate—could provide a more comprehensive evaluation of AI-generated clinical documentation.

Several tools exist for structured assessment, including PDQI-9 (Physician Documentation Quality Instrument) and DeepScore (a proprietary quality metric developed by DeepScribe, ambient scribe vendor, for internal quality review).

Although PDQI-9 effectively evaluates documentation quality across attributes like clarity, completeness, and organization, it does not assess real-world physician satisfaction or the usability challenges related to electronic documentation systems (Stetson et al., 2008).

Currently, there is no universal standard for evaluating ambient scribes, and many vendor-developed metrics remain proprietary. Establishing a transparent, standardized evaluation framework will be essential to ensure these tools meaningfully enhance clinical workflows.

Enhancing EHR Integration

Although current ambient scribes function primarily as passive documentation tools, their utility could be significantly expanded through deeper EHR integration and context-aware enhancements. Ideally, these systems would access relevant lab results, medication histories, and previous visit summaries in real time—reducing manual data retrieval and supporting clinical decision-making. While some ambient scribes offer limited EHR integration, a fully interoperable solution capable of retrieving and querying patient data would maximize efficiency.

In addition to accessing prior data, context-aware note optimization could enable AI to organize information more coherently, resulting in notes that better reflect clinical reasoning and narrative flow.

The Need for Adaptive Healthcare Leadership

Healthcare organizations must take an active role in implementing and evaluating ambient scribe technologies. Their success will depend on continuous assessment of effectiveness, safety, and usability—alongside close collaboration between clinicians, technology vendors, and regulatory bodies to meet specialty-specific needs.

Project Athena, a national initiative defining the next-generation Canadian rheumatology informatics platform, highlights the importance of institutional leadership. A coordinated framework that supports ongoing evaluation and engagement will be key to ensuring these tools integrate seamlessly into clinical practice.

Conclusion

Ambient scribes represent a significant step forward in medical documentation, helping to reduce administrative burdens and improve patient interactions. My experience aligns with published research—these tools enhance workflow efficiency and reduce cognitive load, but their effectiveness depends on accuracy, integration, and adaptability. Future success will hinge on continuous refinement, collaboration, and standardized evaluation. As AI-powered documentation tools evolve, their value in clinical practice will depend on thoughtful implementation and stronger integration with existing healthcare systems.

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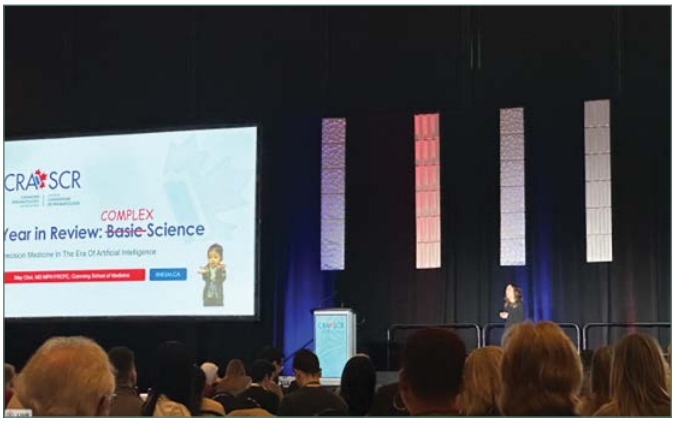
References and suggested readings are available online at craj.ca.

Year in Review: Complex (Not So Basic) Science

By May Choi, MD, MPH, FRCPC

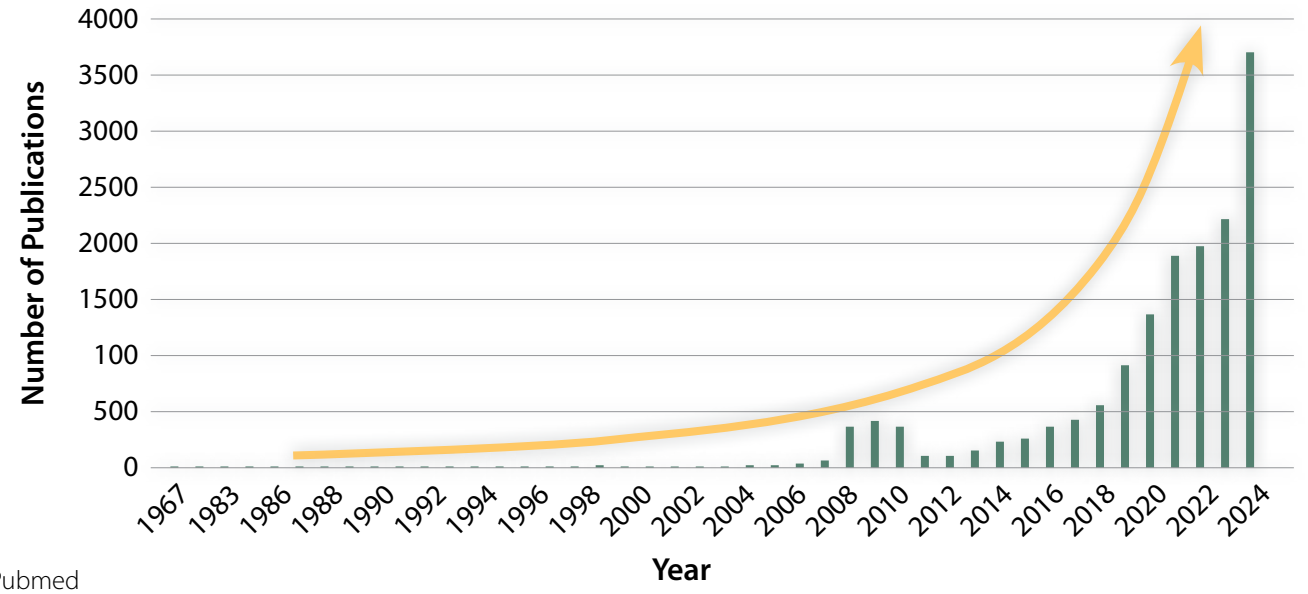
In the world of basic and translational science in rheumatology, research papers are becoming increasingly complex. From intricate immune pathways to the advanced technologies used to study our diseases, understanding these findings is a challenge even for seasoned immunologists. Therefore, for my "Year in Review: Basic Science" presentation at the 2025 Canadian Rheumatology Association Annual Scientific Meeting (Calgary, Alberta), I took a different approach. Rather than explaining what were the most significant basic science findings from 2024 related to rheumatology, I focused on how these groundbreaking discoveries were made, particularly in light of key recent trends: artificial intelligence (AI), immune profiling, and multi-omics.



Dr. Choi presenting at the 2025 CRA ASM in Calgary.

The first key technology that I discussed was the growing role of AI in medicine. Though the term AI was coined in the 1950s, it's only recently that it has had a major impact on health research, thanks to advances in supercomputing and improved patient data collection, now reaching down to the molecular level. AI has become essential for interpreting and integrating large datasets (big data) to understand disease pathophysiology accurately and efficiently. AI can also assist in revealing new patterns that would be challenging to detect with traditional statistical methods. Machine learning algorithms, a type of AI which includes deep learning, can also analyze data such as images, text, and audio.

Explosion of Studies in Rheumatology Using AI



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Year in Review: Complex (Not So Basic) Science

Continued from page 13

In autoimmune disease research, experts from the National Institutes of Health held a meeting in 2024 that identified three critical areas for future research: disease heterogeneity, natural history, and the role of tissues in disease pathogenesis.[1] Biomarkers addressing these areas are key to advancing our understanding of autoimmune diseases, and AI plays a crucial role in identifying these biomarkers. We recently showed in a review of machine learning studies (a type of AI) in lupus, that AI is widely used to analyze biomarker datasets to identify biomarkers that can improve diagnostic accuracy and predict disease complications.[2] These biomarkers included immune cell subsets (e.g., T cells, B cells) and multi-omics (e.g., genomics, proteomics, lipidomics). This combination of AI with immunophenotyping and multi-omics has become a popular approach in basic science to study disease pathogenesis in our field.

A typical workflow integrating AI, immunophenotyping, and multi-omics starts with collecting biospecimens such as blood or tissue samples. These samples are then analyzed to determine immune cell subtypes (e.g, flow or mass cytometry) and various -omics (e.g., using whole genome sequencing, single-cell RNA sequencing, mass spectrometry). The resulting data typically form a large biomarker dataset that is analyzed by machine learning algorithms to identify patterns and potential biomarkers for patient stratification, diagnosis, prognosis, disease pathogenesis, and novel targets for therapy.

Looking to the near future, there's a drive for even larger AI models capable of processing more parameters and connections between their "neurons". For context, the human brain has about 100 trillion connections, while models like ChatGPT use around 1 trillion connections.[3] Given the exponential growth of AI applications, it would not be surprising that AI models will soon get there. We also have other technologies to look forward to, including spatial proteomics, which was named Method of the Year by Nature.[4] This technique takes -omics approaches to the next level by providing a spatial map of protein expression within tissues. It may revolutionize how researchers study diseases using tissue biopsies—such as those from the synovium, muscle, kidneys, or skin—providing a comprehensive view of the immune system. After all, a picture is worth a thousand words! This method offers the potential for more personalized treatments and deeper insights into disease mechanisms, opening new avenues for research and improving patient care in rheumatology.

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Top 10 Research Breakthroughs Funded by Arthritis Society Canada

Arthritis Society Canada is proud to share some remarkable strides made in 2024 through its Top 10 Research Advances of the year at **arthritis.ca/top10research.**

From developing AI-powered tools to accelerate osteoarthritis diagnosis and monitoring, to implementing new models to improve access to rheumatoid arthritis care, research funded by Arthritis Society Canada is transforming our understanding of arthritis diagnosis, treatment and prevention.

Featured in the Top 10 list is a study by Dr. Mark Harrison at the University of British Columbia and Arthritis Research Canada, exploring how integrating nurses into clinics in British Columbia accelerates access to rheumatoid arthritis care. By reducing wait times for disease-modifying antirheumatic drug (DMARD) prescriptions, this multidisciplinary care model enhances early diagnosis and treatment. If the model is further improved and expanded, it could make a tremendous difference in improving the health outcomes of patients.

Another groundbreaking study by Dr. Mohit Kapoor from the Schroeder Arthritis Institute at the University Health Network also made it on to the top 10 list. Dr. Kapoor and his team are focusing on the infrapatellar fat pad (IFP), the largest fat pad in the knee joint, analyzing IFP samples to understand how different cell types are distributed and interact with each other. The research is uncovering molecular patterns in IFP cells linked to knee osteoarthritis, including differences between male and female patients and those with obesity. This detailed knowledge could open doors to novel treatments.

These advances demonstrate the remarkable strides possible through targeted research investments.

Discover the complete list of the Top 10 Research Advances of 2024 at **arthritis.ca/top10research.**

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* Comparative clinical significance is unknown.

1. BIMZELX Product Monograph. UCB Canada Inc. November 27, 2024. **2.** Data on file, UCB Canada Inc.

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CIMZIA (certolizumab pegol) in combination with MTX is indicated for:
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CIMZIA is indicated for:
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- the treatment of adults with severe active nr-axSpA with objective signs of inflammation as indicated by elevated CRP and/or MRI evidence who have had an inadequate response to, or are intolerant to NSAIDs.
- the treatment of adult patients with moderate to severe PsO who are candidates for systemic therapy.

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- Conditions of clinical use, adverse reactions, drug interactions and dosing instructions

The product monograph is also available through Medical Information Services at 1-866-709-8444.

* Comparative clinical significance unknown.
† Clinical significance unknown.
CRP: C-reactive protein; DMARDs: disease-modifying anti-rheumatic drugs; MRI: magnetic resonance imaging; MTX: methotrexate; NSAIDs: nonsteroidal anti-inflammatory drugs; TNF: tumor necrosis factor alpha.

1. CIMZIA® Product Monograph. UCB Canada Inc. November 13, 2019. **2.** Health Canada Notice of Compliance Database. Available at https://health-products.canada.ca/noc-ac/search-recherche.o;jsessionid=C19864F3D26560FC593BFC094A8B0CD1?lang=en. Accessed October 13, 2022.

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"Hydrostomia": The Art and Science for Relief of Dry Mouth

By Leslie P. Laing, BSc, BEd, MSc, PhD (Microbiology and Immunology), DDS, MSc (Prosthodontics), FRCD(C), FAP

With apologies to William Shakespeare who wrote "A rose by any other name would smell as sweet"[1], we might paraphrase by saying "Saliva by any other name would still be considered yucky". Saliva does not have a very endearing reputation and is often derogatorily called "spit", "slobber", "drool", "spittle", or "dribble". Saliva is that seemingly innocuous fluid that we really don't like to think about and tend to take for granted. Yet it is vital to our daily activities. It preserves and maintains oral health and function; aids digestion; contributes to taste perception; facilitates communication; protects oral tissues from desiccation, microbial penetration, or ulceration; stimulates soft tissue repair; provides comfort while wearing dentures through its lubricating ability; and protects against caries by protecting dental surfaces, neutralizing acids, acting as a buffer, diluting acids, and promoting remineralization. Yet in the words of fellow Canadian Joni Mitchell: "Don't it always seem to go that you don't know what you've got 'til it's gone"[2]. When it has gone or its production is diminished, it reduces the quality of life beyond measure. The dry mouth sufferer may still look the same externally, but numerous aspects of the simple joys of life are hindered without it: socializing with family and friends, chatting, eating together, tasting, etc. And then to add insult to real injury, rampant caries may result, despite using all manner of oral hygiene products and techniques.

Dry mouth is associated with several auto-immune diseases, such as the most notable one Sjögren's Disease (SjD), but also systemic lupus erythematosus (SLE), scleroderma, diabetes, graft-versus-host disease, rheumatoid arthritis (RA), and primary biliary cholangitis; with immunotherapy/radiation therapy for head/neck cancers; with over 500 common therapeutic medications, and with smoking marijuana which can lead to "cotton mouth". Various terms have been used to define dry mouth and dysfunction of the salivary glands[3]: **Salivary gland hypofunction** is an objectively decreased saliva secretion (i.e. below normal secretion), which is measured by **salivary flow rate** (SFR) such that the unstimulated or resting SFR is less than 0.1 mL/min (normal ~ 0.3 mL/min), and the stimulated SFR is less than 0.5 mL/min (normal 1-2 mL/min). **Xerostomia** is the subjective sensation of dry mouth. This is the patient's perception that their mouth is dry, yet this may not be obvious upon intra-oral examination, since the extent of the dryness may be affected by factors other than salivary flow rates[3]. The diagnostic term **hyposalivation** is used when saliva secretion becomes pathologically low, as measured objectively.

Before resorting to pharmaceutical intervention, the following simple tricks and tips can aid in relieving dry mouth, i.e., "hydrostomia".

1. Massage:

a. **The major salivary glands.** The largest of the major salivary glands, the parotid glands (Figure 1) are massaged by placing fingers on the cheeks and milking the glands in an anterior direction. This aids the flow of aqueous serous saliva through the Stenson duct. Similarly, viscous mucous saliva can be released from the mid-sized submandibular glands along and below the mandible's lower border, emptying into Wharton's duct. The small sublingual glands can be massaged intra-orally in a rather discrete manner by running the tongue from side to side along the floor of the mouth where the two soft pillow-like structures are located. Since this can be done with a closed mouth, with no one knowing you are doing this, it can be considered the "oral Kegels".

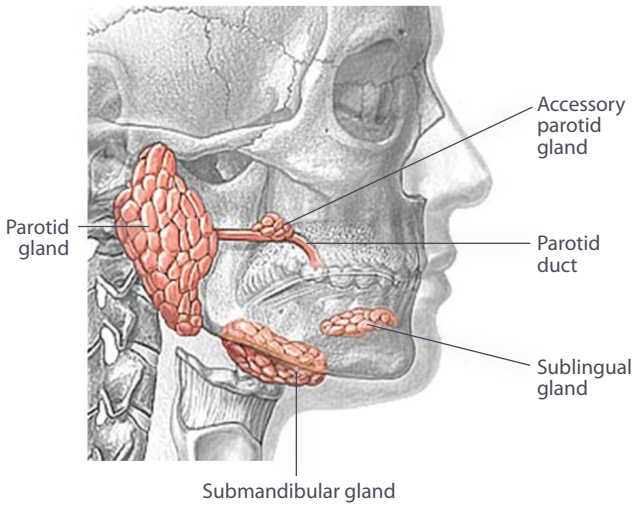

Figure 1. Salivary glands. MedlinePlus [Internet]. Bethesda (MD): National Library of Medicine (US); [updated Jun 24; cited 2020 Jul 1]. Available from: *https://medlineplus.gov/*. Head and Neck Glands.

b. **The minor salivary glands.** Even the minor salivary glands in the lips and gingival tissues can be massaged using a supersoft toothbrush with thousands of polyester filaments. The brush is gently held like a pen at a 45-degree angle with half the bristles on the gums and half on the teeth, then moved in small circles around the teeth. Even without water or toothpaste, saliva will be stimulated. Alternatively, electric water flossers can be used by aiming the tip of the device toward the teeth and directing the gentle flow of water at a 90-degree angle to the gumline.

2. **Use sugar-free, xylitol-containing gum or lozenges.** The mechanical stimulation of chewing gum or sucking on lozenges will stimulate saliva release. Choose those products sweetened with the sugar-substitute xylitol which has the added benefit of reducing caries[4-6]. Avoid sugar-free products containing aspartame which tends to dry the mouth even more.

3. **Use herbal lollipops sweetened with licorice root extract.** A unique delivery system of licorice root extract (LRE) in the form of a lollipop in a regime involving twice daily usage for 10 days has been shown to cause a marked reduction of salivary *Strep. mutans*, the micro-organism frequently associated with dental caries[7]. LRE has potentially beneficial effects in the treatment of cancer, atherosclerosis, gastric ulcers, hepatitis, autoimmune diseases (Crohn's disease, lupus, scleroderma, rheumatoid arthritis), and oral disease (caries)[7,8]. The lollipop format has the added benefit of a handle to hold for those patients who have undergone surgical procedures for head and neck cancer where maintaining a lozenge or gum in the mouth is almost impossible.

4. **Use a small, smooth item as an alternative to gum or lozenges.** This can take the form of a cherry or olive pit, a plastic button or commercially available chewing device designed for this purpose, or even a pebble[9-13]. Any of these can be held "chipmunk-like" in and moved around the mouth, thereby stimulating the mechanoreceptors in gingival tissues and resulting in increased saliva production.

5. **Drink green tea.** Green tea polyphenols have been shown to reduce the risk and severity of cardiovascular disease, dental cavities, eye diseases, kidney stones, infectious diseases, and cancer while improving bone density, immune response, and cognitive function[14,15]. Drinking green tea has been shown to produce a clinically significant increase in salivary flow rate and a statistically significant decrease in salivary viscosity in patients with SjD[7,15]. Additionally, as long as the tea is not too hot, the vessel holding it can be used as a warm compress for the parotid gland.

6. **Be moderate in water drinking but stay hydrated.** Water is not substantive in that it neither remains in the mouth nor lubricates the mouth or throat. Drinking a glass of water is preferable to numerous sips of water since what little saliva is present is swallowed along with the water. Instead, patients can suck on ice chips that have a longer "staying power". An atomizer filled with water or a water: oil mixture with olive or coconut oil can be useful to spray at the back of the throat.

7. **Wear removable prosthetic devices.** These can be in the form of removable dentures, stabilization appliances, or night guards. By providing a replacement for missing teeth along with the denture bases that hug the edentulous ridges, careful prosthodontic treatment may increase stimulated and unstimulated (resting) SFR by allowing more frequent or forceful mastication and stimulation of mechanoreceptors in the oral mucosa under the denture base which a fixed solution (i.e., one that is not removable by the patient) cannot provide.[16-21]

8. **Oil-pull with virgin coconut oil (VCO).** Oil pulling, a traditional Ayurvedic technique dating back 3000-5000 years as a remedy for numerous oral ailments[22], can help relieve dry mouth. In as little as three weeks the technique has been shown to reduce levels of

Fruit or vegetable	Water content (%)
Cucumber	96
Celery, radish, zucchini	95
Red tomato	94
Strawberry, watermelon	92
Grapefruit	91
Cantaloupe	90
Peach	88

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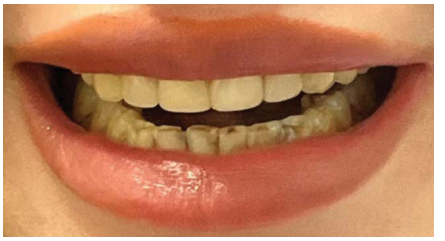

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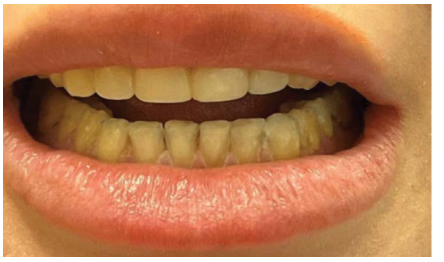


Figure 2. A patient with SjD whose decayed teeth were treated with SDF before restorative treatment (A) and after restorative treatment (B).

both decay-associated *Strep. mutans* and yeast by 100-fold[23, 24]. Patients also reported that their gums no longer bled when they flossed their teeth; they no longer noted a sourdough smell; they could taste their food again; and their teeth looked brighter. The oil has been shown to prevent the binding of bacteria to tooth surfaces and to have a bactericidal effect. Oil pulling is an adjunct to regular oral care and can be easily performed by placing one-half teaspoon of solid VCO in the mouth, pulling and pushing it through the teeth (i.e., swishing) for about 90 seconds, then spitting it out. The process can be repeated several times over a 15-20-minute period in keeping with the original timeframe.

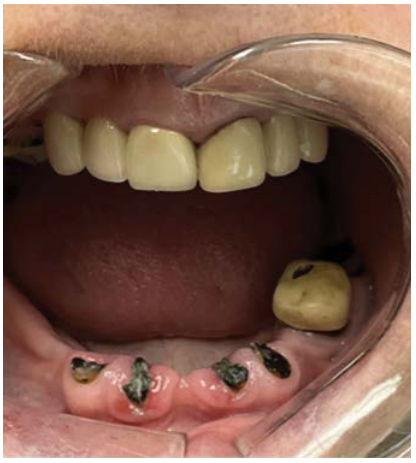
9. **Consume Hydrating Foods.** Most of our foods contain water which helps us stay hydrated. Due to their significant water content, fruits and vegetables serve as excellent substitutes for hydration[25]. Additionally, the act of chewing these foods can enhance saliva production through mechanical stimulation.

10. **Try commercially available remoisturizing or remineralizing aids for home use.** There are numerous commercially available products with claims of remoisturizing the mouth. They are available in various formats: gel, spray, toothpaste, mouth rinse, as well as disks or strips that adhere to the upper back soft tissue of the molar region. It is important to determine the pH of these products before use since some of the more familiar ones have a pH close to 3[26-28], comparable to that of lemons. While these low pH products may be great at stimulating saliva, they are also effective at eroding enamel. Perhaps it is best to save some money and just think of lemons and their "pucker power". Remineralizing aids are also available with high fluoride or hydroxyapatite content and come in the form of toothpastes, rinses, or varnishes.

A Final Word on the Application of 38% Silver Diamine Fluoride (SDF): "Black Magic"

In the event that the mouth has become so dry that rampant caries develop along the gingival margins of teeth through no fault or neglect of the sufferer, e.g., those patients with SjD, there is a treatment regime that has been shown to arrest decay and decrease tooth sensitivity[29]. The application of SDF by a dentist or hygienist is a minimally invasive treatment for dentine hypersensitivity and carious lesions. It is indicated for use in those patients: with extreme caries risk (e.g., dry mouth or Severe Early Childhood Caries); where treatment is challenged by behavioural or medical management; with carious lesions that may not all be treated in one visit; with difficult to treat dental carious lesions; or without access to dental care[30]. This treatment in combination with cosmetic bonding (Figure 2) or overdenture fabrication (Figure 3) improves dental aesthetics with minimal invasion and cost, increasing patients' self-esteem.

A



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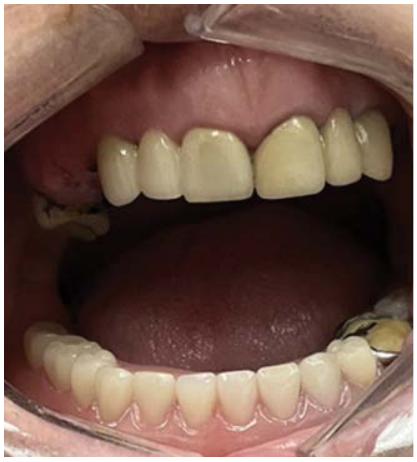

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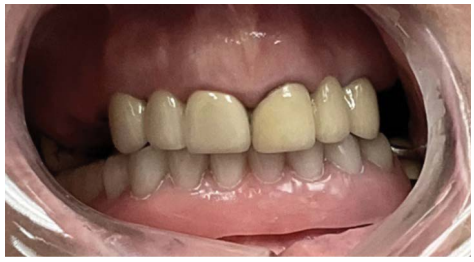

Figure 3. A patient with SjD whose mandibular teeth that were deemed to be unrestorable were SDF-treated (A). The roots were preserved in order to maintain bone levels and serve as abutments for a mandibular overdenture (B and C).

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Patient Perspective: From the Dunk to the Dark

By Herb Malcomson

Herb and his amazing caregiver.

The title conjures up images of a Tim's coffee and chocolate donut, but it is the other dunk. For those unfamiliar, a basketball dunk is when you elevate the ball above the 10 foot rim and slam it in with much bravado. There begins my story as a young man, with a tremendous confidence in my muscles' ability to be challenged and grow to achieve new heights. The opposite bookend to the dunk is sporadic inclusion body myositis (sIBM). Falls have me now largely committed to a rollator, with the imminent wheelchair beckoning with the call of, "Don't be stupid". Let's go there for a moment, to see what stupid (or vanity) looks like.

On occasion I walk unassisted, while the "silent chair" whispers of the many falls, with injuries from pride to the more serious bone breaks requiring surgeries. Trivial injuries like scrapes and bruises aren't an issue, given the rough and tumble of sports. A broken hand surgery, five others for fractured patellae, and a complete knee rebuild where a collapsed leg chose a non-linear plane of flexion, were more difficult. One's vanity rationalizes away the 'on your back in bed' rehab that contributes to further atrophy, but "hey, a guy needs to pee, right!"

The "chair" continues, "What about the concussions?' it cries. "I've had them before and recovered", one says. It continues, "Remember the GP saying that concussions are cumulative, and how the last one caused you to completely lose consciousness?"

Therein lies the temptation of the darkness, as you reply, "Yeah well, this isn't much quality of life anyway!"

My sIBM journey started innocently with a ring finger that wouldn't fully extend in 2006. I avoided the proposed ulnar nerve entrapment surgery that year. As the disease progressed unbeknownst, unexpected falls happened. A winery bicycle tour, where I couldn't pedal up a modest slope, raised red flags. That same day in the bathtub, I noticed the Iliotibial band more pronounced on my left leg (Yup, Bachelor of Science in Kinesiology from the University of Waterloo). A return visit to my GP in 2007 produced a referral to a neurologist who, after a muscle biopsy, confirmed sIBM in 2008. He was surprised when I expressed relief, but I now had something tangible to tackle, and the mystery was over.

I was fortunate then to stay active with 5-6 gym workouts per week, minor athletics, and full-time work. In 2012 at a neurological follow-up, the specialist was surprised at my mobility. He had predicted 5-10 years to a "chair". He encouraged me to try for a clinical trial. My employer supported this, and in May 2013 I began that chapter. I flew to Ohio for testing where a promising trial was underway, and then connected with other trial sites, but was not accepted into any. I suspected my passport flag was a factor, but I cannot confirm that.

I found a local myositis group who were very helpful. I left their initial meeting happy that I hadn't been prescribed methotrexate, or steroids like prednisone, which have no disease impact but have many serious side effects.

I learned there was no Canadian myositis patient organization, and heard that the US group (*TMA.org*) grew significantly via a $2M grant from a Canadian! I heard too that various Canadian rheumatologists felt a similar body would be highly useful, so with several others we started Myositis/Myosite Canada. We achieved many objectives, including charitable status, robust governance, and we raised about $60K. After three years, I stepped down as Canadian President but continue to run their research grant program and southern Alberta support group, which is curiously the largest in Canada.

I was fortunate to have a quick eighteen-month path to diagnosis (versus an average of 59 months in the US) and doubly fortunate to not have been subjected to steroid therapy.

So, what of the mentioned "Dark"? I can still walk in year 18 post diagnosis, but learning to dance in the rain is hard when your experience is that it may soon stop. Idiopathic inflammatory myopathies don't stop and, like a thief, visit each night to collect. Learning to let sadness wash in and then assisting it to wash out like the tide is my secret sauce to shun the dark.

Herb Malcomson
Past-President, Current Head of Southern Alberta Chapter, Myositis Canada (MyoCan)

CPD for the Busy Rheumatologist
Learning Beyond the Mini-Practice Audit Model (mPAM): What Do I Do Next?

By Raheem B. Kherani, BSc (Pharm), MD, FRCPC, MHPE; Elizabeth M. Wooster, M.Ed, PhD(c); and Douglas L. Wooster, MD, FRCSC, FACS, DFSVS, FSVU, RVT, RPVI

"I really have been able to see a positive impact on my practice. I now have been able to review guidelines and actually make a difference in the care of my patients," reflects Dr. AKI Joint, a rheumatologist member of the Canadian Rheumatology Association (CRA). "My cardiovascular care for my systemic lupus erythematosus (SLE) patients has improved. Each time I have done an audit, I have seen improvements. In the first audit, I realized that I was not documenting the lipid results consistently. In the second audit, I identified improved documentation of this aspect of patient care."

The mini-Practice Audit Model (mPAM) and other audits facilitate the opportunity to apply guidelines to our own practice, learn from the application and continue to enhance the delivery of care. Implementing the use of the mPAM audit and re-audit every 3-6 months can be instructive and uncover further opportunities to improve care. Dr. AKI Joint could start with one or two aspects of a guideline, to make this intervention more valuable and impact a change in clinical practice.

The use of mPAMs leads to opportunities for self-reflection, which can stimulate participation in other types of learning (as outlined by the Royal College Maintenance of Certification (MOC) Program (*https://www.royalcollege.ca/en/cpd/moc-program/moc-framework*)), such as group learning (MOC Section 1), individual learning (MOC Section 2), and through further feedback and improvement (MOC Section 3). This may lead to exploring relationships with colleagues, including other specialists who can assist in the discussion of cases, as well as providing coaching or mentoring in the support of others. Dr. AKI Joint could consider using clinical case rounds as a venue to enhance practice. By encouraging one another, collaborative resources can be identified for reading, research and practice improvement.

"I have now seen that not only is the initial audit helpful for my patients," says Dr. AKI Joint, " but re-auditing allows me to learn about my practice and implement systematic changes to enhance patient care through a continuous cycle of quality improvement. I am going to share my findings by presenting the improvements at our hospital medical rounds and will also submit my audit approach for the CRA Practice Reflection Award (*https://rheum.ca/awards/practice-reflection-award/*)."

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John M. Esdaile Award for Rheumatology Resident Research Established in the UBC Adult Rheumatology Program

In 2024, the University of British Columbia (UBC) Adult Rheumatology Residency Program Committee established and awarded for the first time to a graduating rheumatology resident, the John M. Esdaile Award for Rheumatology Resident Research. This is awarded to a graduating trainee demonstrating an aptitude and commitment to rheumatology research during their training in the adult rheumatology training program.

Dr. Esdaile moved from McGill to UBC in 1996 as the Head of Rheumatology and the Director of Research at The Arthritis Society. He went on to significantly expand research opportunities in Rheumatology in BC and across Canada by establishing Arthritis Research Canada, which is now the largest clinical research institute in North America. He has been a role model and mentor for many in rheumatology research, and has received many accolades for his contributions to rheumatology research in Canada and internationally, including the CRA Distinguished Investigator Award and the CRA Distinguished Rheumatologist Award.

The 2024 John M. Esdaile Award for Rheumatology Resident Research presented to Dr. Derin Karacabeyli (centre) by keynote speaker, Dr. John M. Esdaile (right), with UBC Adult Rheumatology Program Director, Dr. Raheem B. Kherani (left)

The inaugural recipient was Dr. Derin Karacabeyli. Dr. Karacabeyli has numerous achievements making him most suitable for this award, including podium presentations in national and international forums, and publications in the area of obesity medicine. We were privileged to have Dr. Esdaile present the award to Dr. Karacabeyli at the UBC Adult Rheumatology Graduation on June 21st, 2024.

Dr. Matthew Anacleto-Dabarno – *2024 National Psoriasis Foundation Fellowship Award*

Dr. Matthew Anacleto-Dabarno is a recipient of the 2024 National Psoriasis Foundation Fellowship Award. The US-based organization issues the award yearly with the aim of supporting physicians-in-training who are pursuing a career advancing care and research in psoriatic disease.

Dr. Anacleto-Dabarno completed his rheumatology training at McGill University in June 2024 and is currently enrolled in a clinical fellowship at the University of Toronto Psoriatic Arthritis program. He is currently working under the supervision of Dr. Chandran, Dr. Poddubnyy and Dr. Gladman to better understand patients with difficult-to-treat psoriatic arthritis.

Dr. Susan Bartlett – *ARP Master Award*

the American College of Rheumatology's Convergence Meeting in Washington DC in November 2024, Dr. Susan Bartlett was awarded the Association of Rheumatology Professionals (ARP) Master designation. The designation of ARP Master is conferred on members who have made outstanding contributions to the field of rheumatology through service to the American College of Rheumatology (ACR)/ARP; and advancements in research, practice, education, and/or advocacy.

Dr. Bartlett is a clinical psychologist and epidemiologist, and Professor of Medicine at McGill University in the divisions of Clinical Epidemiology, Rheumatology, and Respiratory Medicine. Dr. Bartlett is one of the few clinical psychologists embedded in rheumatology divisions at McGill and Johns Hopkins University throughout her career. She is co-founder of the McGill Centre for Health Measurement, a senior researcher with the Research Institute of the McGill University Health Centre, Arthritis Research Canada and the Canadian Early Arthritis Cohort. Her studies focus on patient-centred research, measurement development, treatment adherence, and psychosocial factors that impact treatment outcomes. She is a member of the American College of Rheumatology's Research Foundation board, and immediate past-President of the National Institutes of Health (NIH) Patient-Reported Outcomes Measurement Information System (PROMIS).

Dr. Dafna Gladman – *Appointed Officer of the Order of Canada*

Congratulations to Dr. Dafna Gladman on being appointed Officer of the Order of Canada. The Order of Canada is the cornerstone of the Canadian Honours System. Presented by the Governor General, it recognizes outstanding achievement, dedication to the community and service to the nation.

Dafna Gladman has made foundational contributions to the field of psoriatic arthritis. Her research has advanced our understanding of this chronic disease, and her advocacy has improved treatment availability and quality of care worldwide. She is a highly respected field leader and mentor to the next generation of researchers.

Dr. Gladman is Emeritus Professor of Medicine at the University of Toronto, and Emeritus Scientist at the Krembil Research Institute and Schroeder Arthritis Institute. She is founder and co-Director of the Gladman Krembil Psoriatic Arthritis Program and co-Director of the Lupus Clinic. She is Deputy Director of the Centre for Prognosis Studies in The Rheumatic Diseases; Director, Psoriatic Arthritis Program, University Health Network; and co-Director of the University of Toronto Lupus Clinic. Dr. Gladman's research focuses on psoriatic arthritis (PsA) and systemic lupus erythematosus, with emphasis on database development, prognosis studies, genetic markers, assessment instruments, and quality of life measures. The Toronto PsA Clinic (renamed Gladman Krembil PsA program in 2024) was established in 1978 and is the largest PsA longitudinal cohort in the world. Dr. Gladman's laboratory research program involves genetic and biomarker studies of PsA, making this a truly translational research program.

Dr. Nicole Johnson – *Named one of Canada's Top 100 Black Women to Watch*

Congratulations to Dr. Nicole Johnson on being named one of Canada's Top 100 Black women to watch by CIBWE (Canadian International Black Women), which is an organization that celebrates Black women and their advancements in Canada and beyond. The founder, Rose Cathy Handy, is a Cameroonian immigrant, business leader and CEO of H.E.R. Consulting and Services Inc. Each year CIBWE organizes a Black Pearls Gala event to recognize 100 Black women in Canada. The purpose of the event is to elevate and promote Black women, both immigrant and native to Canada. This year, Dr. Nicole Johnson was one of the top 100 Black women to watch, for her contributions on providing mentorship in medical education and advancing health equity for all.

Dr. Diane Lacaille – *ACR Mentoring Award*

At the American College of Rheumatology (ACR) 2024 Annual Scientific Meeting I had the honour and privilege to receive the Excellence in Investigative Mentoring Award, which recognizes the importance of the mentor/mentee relationship in significantly influencing the successful development and careers of up-and-coming rheumatologists and research scientists. This award recognizes the formal and informal mentoring I have provided to trainees and early career scientists and rheumatologists. It also recognizes my role, as Arthritis Research Canda's Scientific Director, in supporting the training and mentoring of the next generation of arthritis scientists, one of our priorities. To that effect, I have had the pleasure of creating the Arthritis Research Canada arthritis trainee network, directed by scientist Mary De Vera.

I am thrilled to have received this distinguished award. Working alongside young talented individuals and watching their growth and success is one of the most rewarding aspects of my job. I have been privileged to work with many extremely talented trainees. Their curiosity, enthusiasm, and accomplishments are truly inspiring!

Marie Westby, PT, PhD – *ARP Distinguished Educator Award*

Marie Westby received a Distinguished Educator Award at the 2024 Association of Rheumatology Professionals (ARP)/American College of Rheumatology (ACR) meeting in Washington, DC. This award is presented to a member who has demonstrated sustained excellence in teaching patients and students/trainees, including health professional students, medical students, and graduate students, with a focus on rheumatology-related content. Marie has been with the Mary Pack Arthritis Program for 36 years and is currently a Physiotherapy (PT) Clinical Resource Educator in the Vancouver centre. She is a Clinical Associate Professor in the University of British Columbia (UBC) Department of Physical Therapy and Clinician Scientist at the Centre for Aging SMART.

Tribute to Dr. Daniah Basodan

By Dax G. Rumsey, MD, MSc, FRCP(C), and Lillian Lim, MD, MPH, FRCP(C)

It is with profound sadness that we share the devastating and unexpected passing of our colleague and friend, Dr. Daniah Basodan, on November 2nd, 2024. Daniah is dearly loved and missed by her husband Jason, daughter Salma, family, friends, and colleagues. Her loss is felt deeply by all who knew her tenacious spirit and kindness in life.

Daniah was a compassionate physician and beloved member of the pediatric rheumatology community. Her journey in medicine began at King Abdul Aziz University in Jeddah, Saudi Arabia, where she received her Bachelor of Medicine and Surgery in 2009. She gained expertise in pediatrics residency and pediatric rheumatology subspecialty fellowship training at McGill University in Montréal, Québec, followed by her ongoing pursuit of a Master of Public Health at Johns Hopkins University in Baltimore, MD. Since 2019, she served as a pediatric rheumatologist at the Stollery Children's Hospital and an Assistant Professor in the Department of Pediatrics at the University of Alberta in Edmonton, Alberta.

Daniah was a well-loved and deeply dedicated advocate for her patients and families. She was a very strong and determined woman who was often described as "a force". Having overcome many obstacles in her life, she continued to break down barriers and fight for compassion and change in her personal and professional endeavours. She approached life's challenges with extreme poise and grace and was a role model for the many friends and colleagues whom she leaves behind.

Her dedication to children's health and medical education has left an indelible mark on everyone who knew her. She was an excellent clinician with a "small but mighty" personality. Daniah was also a dedicated researcher, with academic contributions in Kawasaki disease and juvenile idiopathic arthritis (JIA) that shed light on critical patient care issues. As an educator and mentor, she guided countless trainees, inspiring them with her passion and dedication. Daniah's commitments also extended beyond her clinical and academic achievements. She played active roles in departmental committees, including the Pediatric Research Advisory Committee, which led her to take on the role of Co-Chair of the University of Alberta Department of Pediatrics Research Day in 2023. Her influence will continue to be felt through the programs and people she championed.

We extend our deepest condolences to Dr. Basodan's family, including her husband Jason and daughter Salma, as well as friends, colleagues, and all those whose lives she enriched. Her warmth, compassion, and unwavering commitment to her family, patients, and colleagues (work family) will be deeply missed. Her legacy will live on in the strength and dedication she brought to her work, the countless lives she touched, and the profound impact she made in her field.

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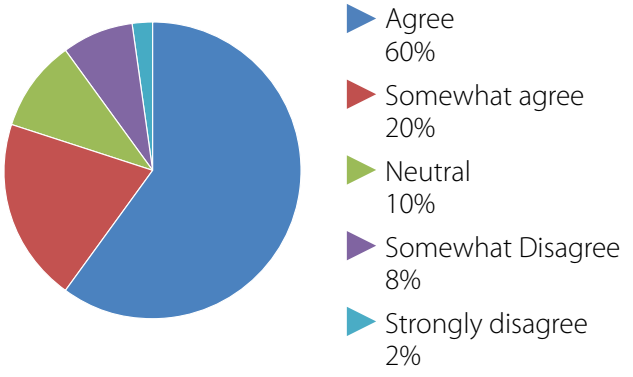
Survey Results: Equity, Diversity, and Inclusion (EDI)

For this issue's Joint Count survey, the CRA asked its membership for their perspectives on EDI as it relates to the association and the Canadian rheumatology landscape. A total of 86 responses (out of a possible 578 were received), equating to a response rate of approximately 15%.

In the first part of the survey, members were asked to rate the CRA on various aspects of equity, diversity and inclusion. When asked to rate the following "People from all backgrounds and with a range of identities have equitable opportunities to advance their skills and engagement at the CRA," 60% were in complete agreement (as compared to only 43% in Fall 2021, when a similar survey was deployed). See chart below for a more detailed breakdown.

CHART 1:

Survey Results: "People from all backgrounds and with a range of identities have equitable opportunities to advance their skills and engagement at the CRA"



When asked "What does equity, diversity and/or inclusion in the context of the CRA mean to you?" there were 38 wide-ranging responses, varying from positive reactions to criticisms. For many, in the context of the CRA, it means that "all individuals should feel valued—no one more than anyone else. The CRA should be a home to support excellence in rheumatology care for all Canadians," as one member wrote. Another member commented that they "would like EDI to be embedded in the core pillars of the CRA, so that all members are welcome to embrace their differences and have equal opportunities to develop and bring strength to the CRA."

Others felt that the organization could do a better job of letting the membership know what leadership positions are available and how to become CRA President, as an example, and also that more programs should address under-represented groups in rheumatology. On the flip side, four respondents were quite critical of EDI in general. Criticisms include that EDI is divisive and merit-averse, and out of scope for the CRA's mission.

When asked what additional actions the CRA could take with respect to increasing EDI, there were many suggestions and comments:

- In terms of equity, the requirement of travelling to the meeting for CRA Board members and how this is limiting to those with young children should be addressed
- Expand CRA Nights to other meetings beyond the US (*e.g.*, EULAR, BSR, APLAR)
- Include more support for early career physicians
- Ensure/improve francophone representation and bilingualism (a frequently repeated comment)
- Encourage more recruitment of underrepresented identities in rheumatology training via grants, scholarships, etc.

Reflecting the divisions currently evident in society at large, a number of commenters questioned the value of EDI programs generally, and of the CRA's involvement in EDI specifically.

The CRA EDI Task Force is evaluating these results. For any questions or feedback, please reach out to *info@rheum.ca*.

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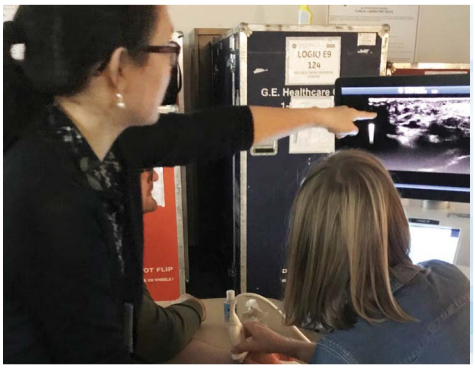

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PEI

Rheumatology Progress in Prince Edward Island

Hello from PEI!

There's a lot of work being done on our island to improve access and repatriate rheumatology patients who had been travelling to New Brunswick and Nova Scotia for services. We've brought on a rheumatology nurse (RN) and recently created a new role and hired a rheumatology nurse practitioner (NP). We've introduced musculoskeletal ultrasound into my clinic and are very excited to welcome a second rheumatologist in the fall of 2025!

Looking ahead, our goal is to continue developing a provincial program in 2026 to include early access clinics, satellite/travel clinics, combined specialty clinics, and to introduce a hospital-based consultation service.

Stephen Morais, MD, MBA, MSc, ABIM, FRCPC
Rheumatology and Critical Care Medicine
Charlottetown, PEI

Steve, his wife Ashley, daughter Lila, and son Bowen

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