

ORIGINAL ARTICLE

Informing the GRADE evidence to decision process with health equity considerations: demonstration from the Canadian rheumatoid arthritis care context

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Abstract

Objectives: Health equity is a priority for clinical and public health practice and promoted in GRADE's Evidence to Decision (EtD) Framework, yet there is still limited integration of specific equity considerations in chronic disease guideline development and implementation. Our objective was to embed equity considerations for upcoming Canadian Rheumatoid Arthritis treatment guidelines.

Study Design and Setting: In parallel with the Guidelines Committee process, considerations for six population groups (rural and remote residents, Indigenous Peoples, elderly persons with frailty, minority populations of first-generation immigrants and refugees, persons with low socioeconomic status or who are vulnerably housed, and sex and gender populations) based on literature reviews and key informant interviews were identified and contextualized to each step in the GRADE EtD framework.

Results: The EtD Framework domains relevant to rheumatoid arthritis treatment and management were analyzed through patient-centric, social determinant and economic lenses, while considering implementation feasibility. This determined tailored considerations relevant to recommendations for the priority populations to mitigate potential intervention-generated inequities.

Conclusion: This approach provides a demonstration of the process of incorporating equity in the evidence to decision process and can be applied in future rheumatic disease guidelines while also informing a research agenda for equity in rheumatology outcomes. © 2021 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Keywords: Equity; Practice guidelines; Rheumatoid arthritis; Health services implementation; Recommendations; Disease management

What is new?

- We provide a demonstration of how to systematically address health equity considerations in rheumatology throughout the Evidence to Decision process for guideline and recommendation development.

- Our data synthesizes realities of six population groups facing inequities in Canadian rheumatology (those living in rural and remote locations, Indigenous Peoples, elderly persons with frailty, minority populations of first-generation immigrants and refugees, persons with low socioeconomic status or who are vulnerably housed, and the diversity of sex and gender populations) and contextualizes how different recommendations may be necessary to ensure desired rheumatoid arthritis outcomes.

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- While centered on rheumatology care and outcomes, our findings may also apply to other chronic diseases where population inequities exist.

1. Introduction

GRADE (Grading Recommendations Assessment and Development Evidence) methodology is widely applied in the development of clinical practice, public health, and health system guidelines. GRADE promotes a systematic approach to evaluating the certainty of evidence and developing and grading recommendations [1]. In the GRADE Evidence to Decision (EtD) Framework, health equity is an essential element in the process for developing recommendations from a population health perspective, aimed at ensuring that the recommendations improve or do not worsen inequities in care. From an individual perspective, thoughtful consideration of health equity issues when informing treatment decisions should serve to support implementation of the approaches selected.

While considerations of health equity may be considered as a unique and separate step in the EtD Framework [2], it has also been proposed that health equity should instead be explicitly considered at each step of the Framework [3–6]. Different populations may place different priorities on the questions addressed or outcomes considered. In some cases, evidence on benefits and harms or the certainty of this evidence may differ between population groups. Patient preferences, acceptability of interventions, economic considerations and feasibility of implementation may also vary by population. To facilitate conceptualizing which populations at risk for inequities should be considered, the PROGRESS-Plus acronym (Place of residence, Race/ethnicity/culture/language, Occupation, Gender/Sex, Religion, Education, Socioeconomic status, Social capital, and other characteristics (Plus) such as sexual orientation, age and disability) [7] is used for categorization.

In rheumatoid arthritis, several important health inequities exist. As treatment is guided by subspecialists, access to care may be challenging for those in rural and remote locations [8]. Formulary policies may impede access to necessary medications [9]. Instigated by our conviction that guidelines updates for our national rheumatology association should address equity, we undertook the development of an Equity EtD Framework contextualized to the Canadian rheumatology practice setting, specifically in rheumatoid arthritis. Here, we share as a demonstration how each step in the EtD Framework was approached for six priority population groups in Canada.

2. Methods

2.1. Development of draft framework

The draft Equity EtD Framework was developed by 2 authors (CB, GH). The context of the framework was drug therapy recommendations for rheumatoid arthritis in Canada. These recommendations are focused on individual clinical decision-making. Inputs for the Equity EtD Framework were the following:

1. Qualitative data: Themes related to population factors, initial and ongoing healthcare access, and medication access and strategy impacting rheumatoid arthritis care were reported in a prior study [10]. In brief, we conducted 35 stakeholder interviews with healthcare providers, researchers with expertise in equity, and patients with lived experience from six population groups at risk for inequities of particular relevance to Canadian rheumatology practice: those living in rural and remote locations, Indigenous Peoples (First Nations, Métis and Inuit), elderly persons with frailty, minority populations of first-generation immigrants and refugees, persons with low socioeconomic status or who are vulnerably housed, and the diversity of sex and gender populations. These six groups were selected following a survey of the Canadian Rheumatology Association's Quality Care and Guidelines operational committee memberships, a review of other Canadian chronic disease guidelines, and literature reviews evaluating the rheumatoid arthritis outcomes in the priority population groups, described in more detail below. The stakeholder interviews focused on identifying realities for the populations with regards to disease burden and preferred treatment approaches, challenges in health service access (care and medications) and solutions these experts were aware of to mitigate these issues and support equity in access and outcomes. Logic models were constructed by the research team members to promote understanding of barriers faced by these populations in accessing high quality rheumatology care, and we summarized mechanisms to mitigate threats to equity along the rheumatology care journey.
2. Literature reviews on RA outcomes by equity groups: This included a review of randomized trials of RA drug therapy to determine whether there was any evidence of different relative treatment effects that would be presented in a GRADE Summary of Findings Table. There were only two studies identified evaluating the association between outcomes and sex or age. In two other systematic reviews, we evaluated rheumatoid arthritis outcomes for two high-priority populations, Indigenous populations [11, 12] and rural and remote residents [13]. This evidence, largely non-randomized, was used to decide whether the absolute treatment responses and risks might vary by population groups. Finally, we used a published systematic review of RA treatment

preferences [14]. In this review, we had systematically identified whether treatment preferences are associated with patient characteristics. Indeed, we found that preferences were often more strongly associated with population membership than with disease characteristics.

With these sources of information, we drafted an initial Equity EtD Framework. The two authors (CB, GH) populated the EtD Framework components for each individual group, outlining the specific equity considerations raised during the interviews and in the available literature.

2.2. Feedback and revisions

Feedback was sought from members of two different guideline panels composed of rheumatologists, arthritis researchers and patient representatives. The first was the panel developing living guidelines for adult rheumatoid arthritis. The guideline panel was tasked with developing a recommendation for tapering treatment in patients who are in sustained remission. This was undertaken using the GRADE “adoption” approach [15], meaning the group used a published recommendation from another group, and worked through the EtD process, contextualizing the recommendation to the Canadian context. During this process, the Equity EtD Framework was applied in the discussions for each step of the process. The second guideline group was developing recommendations for juvenile uveitis, again using a GRADE adoption approach. This provided an initial opportunity to see whether the draft Equity EtD Framework might be useful outside of the population for which it was developed. The feedback on usability and content applicability from both groups was incorporated and circulated prior to finalizing. The resulting Equity EtD Framework, presented here, is as an initial version, open for discussion, and with the view to revise iteratively over time.

3. Results

As our Equity EtD Framework includes considerations for six populations, we present a separate table and discussion for each step of the EtD Framework to summarize key aspects.

3.1. Priority of the problem

This first step in the EtD Framework reflects on the seriousness of consequences of the problem (in terms of severity or importance for potential benefits or savings) and it being recognized as a priority politically or from a policy decision perspective, driving the need for a recommendation [2]. In general, from a societal or health system perspective, high disease prevalence and more severe outcomes result in higher direct health costs, increasing the priority of setting treatment recommendations for populations facing inequities. At an individual level, the recom-

mendation may be of lower priority for certain population groups due to competing health and social concerns [10].

In our framework, several equity considerations were identified that may impact the priority of the problem (Table 1). This may differ related to geographic considerations, such that recommendations reflecting access to care or therapy may be more important politically for advocacy purposes for populations located in rural or remote settings [13]. Indigenous populations may choose to promote questions that focus on non-Western treatment recommendations [16], or those that examine approaches to maintain function to fulfill their social roles [10]. Different priorities for treatment recommendations could emerge too, as exemplified by elderly persons with frailty where treatment questions that prioritize symptom control and quality of life would be of greater importance than questions to support long term disease outcomes [10]. For diverse sex and gender groups, treatment considerations remain of high importance but for differing reasons. For women and men and gender diverse people, treatment recommendations that support maintaining important social roles would be valued, whereas for females a higher priority may be placed on treatment questions that explore safety throughout reproductive phases [10].

3.2. Health effects

This aspect in the EtD Framework seeks to consider the magnitude of benefit related to a treatment or intervention, as well as undesirable health effects. These potentials may vary between populations, reflecting disease severity and the opportunity for improvement, underlying variations in medication metabolism, and comorbidities or other factors which limit effectiveness due to the development of adverse effects.

Based on our prior literature review, we did not find evidence to suggest there are differences in the relative benefits and risks of drug therapy (effect-modification) in relation to the population groups facing inequities. However, we did find direct and indirect evidence that certain equity groups experience worse RA outcomes overall, which would impact the absolute treatment effects. Indigenous populations are recognized as having a higher frequency of poor prognostic factors which impact outcomes [11], thus treatments with a greater chance of benefit may be preferred. This must be weighed against the potential risk of adverse events and potential medication interactions with the increased frequency of comorbidities and chronic diseases in the population, as also exists for persons from rural and remote communities and the elderly with frailty [10]. Refugees and first-generation immigrant populations may have an increased risk of latent infections, increasing the risk of adverse treatment effects if sufficient screening for such infections is not undertaken [10]. With an increased frequency of substance misuse and addictions for persons from low socioeconomic status and

Table 1. Equity considerations for “Priority of the Problem”

Population	
Rural and remote residents	Higher priority for questions that support logistics of access to care or therapy (e.g., intravenous infusions)
Indigenous peoples	High priority for questions related to treatment, due to increased prevalence of rheumatoid arthritis, more severe outcomes, and importance of maintaining function to fulfill social roles Treatment questions considering non-Western therapeutic options may be of higher importance Some treatment questions may be lower in priority due to competing health and social considerations
Elderly persons with frailty	Higher priority for treatment questions focused on quality of life and symptom control
Refugee and first-generation immigrant populations	Importance of treatment questions likely to vary between groups due to different sociocultural approaches to health and healthcare use Treatment questions may be lower in priority due to competing health and social considerations
Persons of low socioeconomic status and vulnerably housed	Treatment questions may be lower in priority due to competing health and social considerations
Gender and sex diverse populations	<i>Gender:</i> Higher priority for treatment questions due to importance of maintaining function to fulfill social roles <i>Females:</i> Higher priority for treatment questions that explore safety in pregnancy, breast-feeding and reproduction

Table 2. Equity considerations for health benefits of treatments and adverse effects

Population	Differences in opportunity for improvement	Differences in magnitude of treatment effect	Adverse effects
Rural and remote residents	Lack of evidence as trial enrolment may not include this population	Lack of evidence	Higher frequency of comorbidities increases risk of adverse events and medication interactions
Indigenous peoples	Higher frequency of poor prognostic factors	Lack of evidence	Higher frequency of comorbidities may increase risk of adverse events and medication interactions
Elderly persons with frailty	Lack of evidence as typically excluded from trials	Lack of evidence	Comorbidities and polypharmacy may increase undesirable effects
Refugee and first-generation immigrant populations	Lack of evidence as trial evidence may not be generalizable	Lack of evidence	Comorbidities may vary from general population in Canada Increased latent infection risk
Persons of low socioeconomic status and vulnerably housed	Lack of evidence as typically not enrolled in trials	Lack of evidence	Higher frequency of substance misuse may increase treatment adverse effects
Gender and sex diverse populations	Females have increased disease severity	Direction/degree of effect may depend on the outcome being evaluated	Females: Limitations of available evidence regarding safety in reproductive phases

Table 3. Variations in the importance of main outcomes in populations facing inequities

Population	
Rural and remote residents	Lack of evidence for differences in importance of main outcomes
Indigenous peoples	Desired health benefits are not limited to usual rheumatology core outcome measures, and outcomes reflecting physical, mental, emotional, and spiritual wellness domains will be of higher value
Elderly persons with frailty	Outcomes of quality of life and minimized burden of medication regimes will be of higher importance than long-term benefits/ risks
Refugee and first-generation immigrant populations	Ethnic background, language and cultural interpretations, and health literacy will impact importance of outcomes
Persons of low socioeconomic status and vulnerably housed	Outcomes that reflect increased participation in society may be of higher importance
Gender and sex diverse populations	<i>Gender:</i> Outcomes that reflect maintenance of social roles and participation may be of higher value <i>Females:</i> Patients may place higher importance on outcomes that reduce potential risk to the fetus over disease control outcomes.

Table 4. Resource considerations for populations facing inequities in rheumatoid arthritis

Population	
Rural and remote residents	Additional costs associated with travel for therapies requiring infusion, or intra-articular injections
Indigenous peoples	<i>First Nations with Treaty Status:</i> federal formulary provides full coverage for listed therapies <i>Non-status First Nations and Métis people:</i> require access to public or private insurance, which may be limited by socioeconomic resources
Elderly persons with frailty	Transition to senior public insurance or hospital formulary may lead to loss of coverage
Refugee and first-generation immigrant populations	Coverage for physician visits and medications may be limited by federal program reimbursement regulations Patient established on biologic therapy prior to relocation may need to re-try prior therapies to meet public coverage formulary stipulations
Persons of low socioeconomic status and vulnerably housed	Limited coverage from public programs
Gender and sex diverse populations	<i>Gender:</i> Coverage will depend on employment, which may reflect gender disparities <i>Females:</i> Bypassing first line therapies known to be teratogenic, with requirement to go back to those therapies once completed conception, pregnancy and/or lactation <i>Gender and Sex:</i> Financial coverage variations during maternity/parental leave

Table 5. Considerations for treatment acceptability

Population	
Rural and remote residents	Acceptance may be influenced by geographical considerations and route of delivery of medication
Indigenous peoples	Consider how the recommendation may fit with co-use of traditional healing practices and lifestyles (e.g., hunting) Stigma around certain therapies (e.g., pills) and patient preference for non-invasive routes of administration Family and community input, and quality of relationship with provider, influence treatment acceptance Inequities in education result in lower overall attainment which has been associated with risk aversion
Elderly persons with frailty	Consider acceptability of regime to patient, family and care providers/care homes supporting administration of treatment, while not stigmatizing and avoiding interventions that may have value Polypharmacy negatively influences adherence
Refugee and first-generation immigrant populations	Decisions may reflect preferences for integrative health providers
Persons of low socioeconomic status and vulnerably housed	Medical and mental health comorbidities may impact health literacy for informed decision making
Gender and sex diverse populations	<i>Females:</i> Potential risks to fetus or baby may be unacceptable

Table 6. Feasibility of interventions for different population groups

Population	
Rural and remote residents	May need to rely more on primary care collaboration, so complex interventions may be less desirable Access to monitoring of drug side effects may be more difficult Shelf stable options may be preferred for remote patients with variable power supply
Indigenous peoples	Consider health system availability and navigation (both providers and necessary monitoring) Shelf stable options may be preferred due to refrigeration access
Elderly persons with frailty	Living arrangements will impact on feasibility of healthcare access and monitoring Cognitive impairment will result in the need to collaborate with healthcare decision makers/providers Mobility issues may change the frequency or mechanism of assessment of response
Refugee and first-generation immigrant populations	Consider health system availability and navigation (both providers and necessary monitoring)
Persons of low socioeconomic status and vulnerably housed	Medical and mental health comorbidities may limit access to providers for treatment administration and monitoring Shelf stable options may be preferred due to refrigeration access
Gender and sex diverse populations	<i>Female Gender:</i> May select therapy that minimizes time way from the home due to childcare arrangements <i>Females:</i> Balance rheumatology care with multiple appointments required when collaborating for pregnancy/post-partum care

vulnerably housed populations, treatment adverse effects may arise [10]. For females, disease severity is increased [17], thus there is increased potential for beneficial health effects, however with variations in the magnitude of a treatment effect depending on the outcomes examined. Safety of treatments for females in their reproductive years is typically not available from available trial data.

3.3. Certainty of evidence of effects

This step in the GRADE EtD framework requires that available evidence be categorized by its' strength. As detailed above, most of the populations facing inequities will not be adequately represented in clinical trials, nor will available evidence have been stratified to examine population-specific outcomes. This raises the concern that the evidence may be judged as insufficient for the population group. Further, a hierarchy of knowledge that privileges western-based evidence exists, and questions on treatments outside of western medicine may not be amenable to mechanisms of inquiry such as randomized controlled trials. Together, these factors increase the potential for worsening health inequities by not being able to make any recommendations. Following GRADE guidance [5], unless there is specific evidence for the population that can be appropriately rated for certainty, then guidelines committees should proceed assuming effects would be similar to the general population.

3.4. Outcome importance

In this step, variability in the importance or value of main study outcomes should be evaluated. Many Indigenous Peoples value holistic health and wellness, and outcomes that reflect impact on all aspects of physical, mental, emotional and spiritual health will be higher in importance for them [18]. For refugee and immigrant populations, cultural practices and approaches, and health literacy, will be reflected in the values placed on main outcomes [10]. In elderly persons with frailty, outcomes that reflect quality of life and simplified medication regimes will be of higher importance than remission or interruption of damage progression [10]. Those experiencing homelessness and with low socioeconomic status, and gender groups, may value outcomes that reflect effect of treatment on participation in society, such as work productivity [10]. Females that are pregnant may value treatment outcomes differently than their provider, placing higher importance on reducing risk to the fetus, whereas clinicians may strive for optimal disease control [10].

3.5. Resource use

This domain of the EtD Framework considers cost-effectiveness, but also the magnitude of the resource requirements. These are typically substantial in rheuma-

toid arthritis, and cost coverage variations are encountered for persons from populations facing inequities. Here, the guideline committee is asked to consider not only societal costs, but also those of individuals from population groups with inequities voiced during previous data collection [10]. Gender disparities in income potential are recognized and not yet resolved in society, impacting access to cost coverage for women. Additionally, maternity and parental leaves reflect a period of vulnerability for access. Transitions in time are a factor here, where some medications may not be trialed related to teratogenicity for females in the pre-conception, pregnancy and lactation periods (e.g. methotrexate, leflunomide). When these periods end, women may be mandated to return to these lower cost medications, despite having their disease well controlled on advanced (and more costly) therapy. Persons living in rural and remote locations may be impacted by additional costs to attend appointments for therapies requiring provider intervention such as intravenous infusions or intra-articular injections. Indigenous patients, refugee and first-generation immigrant populations, and those of low socioeconomic status will potentially have limitations in available medication coverage through federal benefits, or through provincial or territorial government public programs, and frequently experience delays in having newer options added to the formularies they access. In addition, refugees and first-generation immigrant populations may face re-trialing previously used therapies to meet their coverage requirements if sufficient documentation from their home country cannot be obtained. Elderly persons with frailty may experience a transition to senior public insurance, or as frailty increases, to the hospital formulary, and lose cost coverage for established therapies.

3.6. Acceptability to stakeholders

There is evidence that lower educational attainment is associated with a heightened aversion to risk when choosing therapy [14], and many populations facing inequities in health also face these inequities in education. For persons of low socioeconomic status and those who are vulnerably housed, associated medical and mental health comorbidities may limit understanding of risks and benefits of treatment options presented and thus acceptance of a treatment [10]. Refugees and first-generation immigrant populations may have low trust or belief in western medical approaches, or choose to continue seeking treatment from familiar integrative health providers. Low health literacy in these populations may impact effective patient-provider communication, contributing to low patient trust which may limit follow up and regime adherence [10]. For Indigenous populations, acceptability of a treatment approach will be reduced if it interferes with use of traditional healing practices, or traditional lifestyle approaches. Further, there is stigmatization experienced by those engaged in pill-based treatment approaches related to the epidemic of

opioid use disorders in the population, but also for some a preference to avoid invasive therapies. Family and community members support decision making for Indigenous patients, and trust with the healthcare provider strongly influences treatment acceptance [16]. Additional perspectives should also be welcomed for elderly persons with frailty, as family and the extended sphere of healthcare providers are integral to supporting care. While acknowledging differences in treatment goals exist and that polypharmacy reduces adherence, this should be balanced with avoiding stigmatization and concluding that there are not any therapies acceptable to elderly persons with frailty. Medication regimes with the potential for teratogenicity will not be acceptable to persons of the female sex pursuing conception and pregnancy, nor will regimes with potential toxicity for those who are lactating. Rural and remote patients may not find complex regimes requiring travel for administration acceptable to take.

3.7. Feasibility of the intervention for individuals and system implementation

Unique circumstances will impact the implementation of treatment recommendations for each of the population groups considered. This may be related to accessibility of health care providers and system navigation to obtain assessment for therapy and associated monitoring, which are challenges faced by Indigenous populations [19,20], rural and remote dwellers [13], refugee and first-generation immigrants, and those of low socioeconomic status or facing housing vulnerability [10]. Primary healthcare collaborators may facilitate treatment plans thus these providers should be supported in their needs to do so [10]. Shelf-stable options may be preferable for Indigenous Peoples involved in traditional practices on the land, or for those vulnerably housed without consistent access to refrigerated storage [10]. For elderly persons with frailty, their living situation may dictate medication storage options, and mobility and cognitive impairment may result in the need to collaborate with family members and other healthcare providers to facilitate treatment [10]. For females, those with responsibility for caring for children may find home-administered therapies more feasible to take rather than those that require lengthy or frequent infusions. Pregnant women require several other appointments concurrent with rheumatology needs during their pregnancy and in the post-partum period, thus minimizing the need for frequent assessments or finding alternative approaches to assessment should be considered when choosing therapy [10].

4. Discussion

We have presented considerations to apply in guideline development for rheumatoid arthritis in Canada to demonstrate an approach for incorporating equity in the EtD process. Our approach seeks to complement the guideline de-

velopment process for general populations by highlighting specific aspects committees and panels need to reflect on during voting, in addition to creating space and privileging the voice of persons from underrepresented populations throughout the process. As reinforced in the Truth and Reconciliation Commission of Canada [21], all members of society play a role in taking action towards reconciling injustices that have occurred in the past, and by extension the achievement of equity. We take up this call with the known inequities that exist in rheumatology outcomes in Canada.

Other Canadian guidelines have addressed known inequities in guidelines. Diabetes Canada has dedicated a chapter to discussing guideline implementation for screening, primary prevention, and management strategies [22], and Obesity Canada addresses management [23], with Indigenous populations. The Society of Obstetricians and Gynecologists of Canada recognize health inequities for Indigenous women, and in response have developed guidelines on culturally safe care [24] and an accompanying policy statement [25]. The Canadian Heart and Stroke Foundation provides general management considerations for stroke management in women during conception, pregnancy, post-partum and intra-partum periods, as well as specific recommendations for patients nearing end-of-life [26]. We recognize and applaud this positive work yet suggest that it is quite narrow in scope. Our work provides a framework to expand the consideration of health equity in recommendations to more population groups, contextualized to the Canadian landscape. We argue that such a framework may help guideline developers systematically consider health equity throughout the EtD process. The research we contribute here aligns and supplements previous GRADE work by contributing to the promotion of health equity throughout the EtD process.

While our process is presented as a population-specific approach, there could be concerns raised about the intention. The first is whether this work is reinforcing sweeping generalizations and stereotyping of populations. Saini has recently cautioned around confusing race and racism in health research and medical practice if blindly pursuing describing differences between populations with the outward goal of personalizing medicine, rather than considering the social constructs and actions that perpetuate differences and more importantly engaging in activities to work towards advancing health outcomes [27]. It is with the latter philosophy that we have undertaken the work, to support rheumatology clinicians who may not be attuned to specific practice considerations, and generalizing recommendations when not appropriate, reinforcing negative stereotypes of patients ‘failing’ to follow recommendations. In the presentation of equity considerations within recommendations, it may be preferable to link the equity considerations to the underlying factors and inequities in determinants of health that are more prevalent within the disadvantaged populations, rather than to the group itself.

For example, access to care was identified as an issue affecting feasibility of an intervention across several groups. An equity-sensitive recommendation could link any differences in the recommendation or its implementation to patients in whom access to care is difficult within this population, rather than generalizing to the entire subpopulation. This may result in additional qualification, demonstrated using a 2012 Canadian Rheumatology Association rheumatoid arthritis treatment recommendation: ‘Rheumatoid Arthritis care providers should monitor disease activity as frequently as every 1 to 3 months in patients with active RA (Level I evidence)’ [28]. We would propose adding ‘Rheumatology care teams should develop collaborative service models to achieve this for patients without consistent primary care access, who are socially excluded or who as a result of their medical status must rely on their social supports to access care.’

The second is the attempt we have intentionally made to not present intersectionality views. Intersectionality reflects when persons belong to multiple populations facing inequities, resulting in a complex mix of advantage and disadvantage, explained by Nixon through the concept of intersecting ‘coins’ [29]. Thus, specific to our work, Indigenous women living in rural and remote communities with poverty do not experience rheumatoid arthritis in just a singular aspect for each population they belong to, rather it is the interplay of all these factors, many of which cluster together. While it is not conceivable to create guidelines that meet each individual’s unique experiences, we strive to present considerations at the population-level, with aspiration that these multiple levels will be explored to enhance understanding of how population-level concepts are realized within individuals.

We wish to acknowledge limitations of this work. The Equity EtD Framework presented here should not be considered a ‘final’ document, rather proposes an initial approach to apply in guideline and recommendation development discussions. Our synthesis of key considerations is based on available evidence and experiences of stakeholders we engaged in our process. There are many unheard voices in society, related to power and privilege differentials, and our engagement and recruitment strategy may have excluded their perspectives. We were interested in determining the feasibility and acceptability of the Equity EtD Framework to guideline panels, but as there were no scales or systems by which to evaluate these aspects rigorously in this context, we relied on discussions to further refine the framework. We seek other panels and disease entities to provide additional feedback on the Equity EtD Framework and enhance its content and purpose.

5. Conclusion

We have shared a demonstration of embedding equity considerations in the GRADE EtD Framework. We propose our approach as a model for anticipated updates of

current clinical guidelines or for future guideline development, incorporating equity in the evidence to decision process, while also informing a research agenda for equity in rheumatology outcomes. We anticipate that it has potential to contribute to advancing health equity on a global scale if applied by research groups, clinicians and policymakers to other disease guidelines.

CRedit authorship contribution statement

Cheryl Barnabe: Conceptualization, Project administration, Funding acquisition, Supervision, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing, Visualization. **Emilie Pianarosa:** Funding acquisition, Investigation, Writing – review & editing. **Glen Hazlewood:** Conceptualization, Methodology, Formal analysis, Writing – review & editing.

References

- [1] Guyatt G, Oxman AD, Akl EA, Kunz R, Vist G, Brozek J, et al. GRADE guidelines: 1. Introduction-GRADE evidence profiles and summary of findings tables. *J Clin Epidemiol* 2011;64(4):383–94.
- [2] Alonso-Coello P, Schönemann HJ, Moberg J, Brignardello-Petersen R, Akl EA, Davoli M, et al. GRADE Evidence to Decision (EtD) frameworks: a systematic and transparent approach to making well informed healthcare choices. 1: Introduction. *BMJ* 2016;353:i2016.
- [3] Welch VA, Akl EA, Guyatt G, Pottie K, Eslava-Schmalbach J, Ansari MT, et al. GRADE equity guidelines 1: considering health equity in GRADE guideline development: introduction and rationale. *J Clin Epidemiol* 2017;90:59–67.
- [4] Akl EA, Welch V, Pottie K, Eslava-Schmalbach J, Darzi A, Sola I, et al. GRADE equity guidelines 2: considering health equity in GRADE guideline development: equity extension of the guideline development checklist. *J Clin Epidemiol* 2017;90:68–75.
- [5] Welch VA, Akl EA, Pottie K, Ansari MT, Briel M, Christensen R, et al. GRADE equity guidelines 3: considering health equity in GRADE guideline development: rating the certainty of synthesized evidence. *J Clin Epidemiol* 2017;90:76–83.
- [6] Pottie K, Welch V, Morton R, Akl EA, Eslava-Schmalbach JH, Katikireddi V, et al. GRADE equity guidelines 4: considering health equity in GRADE guideline development: evidence to decision process. *J Clin Epidemiol* 2017;90:84–91.
- [7] O’Neill J, Tabish H, Welch V, Petticrew M, Pottie K, Clarke M, et al. Applying an equity lens to interventions: using PROGRESS ensures consideration of socially stratifying factors to illuminate inequities in health. *J Clin Epidemiol* 2014;67(1):56–64.
- [8] Movahedi M, Joshi R, Rampakakis E, Thorne C, Cesta A, Sampalis JS, et al. Impact of residential area on the management of rheumatoid arthritis patients initiating their first biologic DMARD: Results from the Ontario Best Practices Research Initiative (OBRI). *Medicine (Baltimore)*. 2019;98(20):e15517.
- [9] Barnabe C, Healy B, Portolesi A, Kaplan GG, Hemmelgarn B, Weaselhead C. Claims for disease-modifying therapy by Alberta non-insured health benefits clients. *BMC Health Serv Res* 2016;16:1–8.
- [10] Pianarosa E, Hazlewood G, Thomas M, Hsiao R, Barnabe C. Supporting equity in rheumatoid arthritis outcomes in canada: population-specific factors in patient-centered care. *J Rheumatol* 2021 Online ahead of print. doi:10.3899/jrheum.210016.

- [11] Hurd K, Barnabe C. Systematic review of rheumatic disease phenotypes and outcomes in the Indigenous populations of Canada, the USA, Australia and New Zealand. *Rheumatol Int* 2017;37(4):503–21.
- [12] Loyola-Sanchez A, Hurd K, Barnabe C. Healthcare utilization for arthritis by indigenous populations of Australia, Canada, New Zealand, and the United States: a systematic review. *Semin Arthritis Rheum* 2017;46(5):665–74.
- [13] Pianarosa E, Chomistek K, Hsiao R, Anwar S, Umaefulam V, Hazlewood G, et al. Global Rural and Remote Patients with Rheumatoid Arthritis: A Systematic Review. *Arthritis Care Res (Hoboken)*. 2020 Online ahead of print. doi:10.1002/acr.24513.
- [14] Durand C, Eldoma M, Marshall DA, Bansback N, Hazlewood GS. Patient preferences for disease-modifying antirheumatic drug treatment in rheumatoid arthritis: a systematic review. *J Rheumatol* 2020;47(2):176–87.
- [15] Schünemann HJ, Wiercioch W, Brozek J, Etzeandia-Ikobaltzeta I, Mustafa RA, Manja V, et al. GRADE Evidence to Decision (EtD) frameworks for adoption, adaptation, and de novo development of trustworthy recommendations: GRADEADOLPMENT. *J Clin Epidemiol* 2017;81:101–10.
- [16] Loyola-Sanchez A, Hazlewood G, Crowshoe L, Linkert T, Hull PM, Marshall D, et al. Qualitative Study of Treatment Preferences for Rheumatoid Arthritis and Pharmacotherapy Acceptance: Indigenous Patient Perspectives. *Arthritis Care Res (Hoboken)* 2020;72(4):544–52.
- [17] Sokka T, Toloza S, Cutolo M, Kautiainen H, Makinen H, Gogus F, et al. Women, men, and rheumatoid arthritis: analyses of disease activity, disease characteristics, and treatments in the QUEST-RA study. *Arthritis research & therapy* 2009;11(1):R7.
- [18] Loyola-Sanchez A, Pelaez-Ballestas I, Crowshoe L, Lacaille D, Henderson R, Rame A, et al. There are still a lot of things that I need": a qualitative study exploring opportunities to improve the health services of First Nations People with arthritis seen at an on-reserve outreach rheumatology clinic. *BMC Health Serv Res* 2020;20(1):1076.
- [19] Barnabe C, Jones CA, Bernatsky S, Peschken CA, Voaklander D, Homik J, et al. Inflammatory Arthritis Prevalence and Health Services Use in the First Nations and Non-First Nations Populations of Alberta, Canada. *Arthritis Care Res (Hoboken)*. 2017;69(4):467–74.
- [20] Thurston WE, Coupal S, Jones CA, Crowshoe LF, Marshall DA, Homik J, et al. Discordant indigenous and provider frames explain challenges in improving access to arthritis care: a qualitative study using constructivist grounded theory. *Int J Equity Health* 2014;13(1):46.
- [21] Truth and Reconciliation Commission of Canada Truth and Reconciliation Commission of Canada: Calls to Action. MB: Winnipeg; 2015.
- [22] Crowshoe L, Dannenbaum D, Green M, Henderson R, Hayward MN, Toth E, et al. Type 2 Diabetes and Indigenous Peoples. *Can J Diabetes* 2018;42(1):S296–306 Suppl.
- [23] Henderson RI, Boyling E, McInnes A, Green M, Jacklin K, Walker L, et al. Obesity Management and Indigenous Peoples. *Obesity Canada*; 2020.
- [24] Wilson D, de la Ronde S, Brascoupe S, Apale AN, Barney L, Guthrie B, et al. Health Professionals Working With First Nations, Inuit, and Métis Consensus Guideline. *J Obstet Gynaecol Can* 2013;35(6S2):S1–4.
- [25] Canada SoOaGoSOGC policy statement. No. 251, December 2010. Returning birth to aboriginal, rural, and remote communities. *J Obstet Gynaecol Can*. 2010;32(12):1186–8.
- [26] Boulanger JM, Lindsay MP, Gubitz G, Smith EE, Stotts G, Foley N, et al. Canadian Stroke Best Practice Recommendations for Acute Stroke Management: Prehospital, Emergency Department, and Acute Inpatient Stroke Care, 6th Edition, Update 2018. *Int J Stroke* 2018;13(9):949–84.
- [27] Saini A. Stereotype threat. *Lancet* 2020;395(10237):1604–5.
- [28] Bykerk VP, Akhavan P, Hazlewood GS, Schieir O, Dooley A, Haraoui B, et al. Canadian Rheumatology Association recommendations for pharmacological management of rheumatoid arthritis with traditional and biologic disease-modifying antirheumatic drugs. *The Journal of rheumatology* 2012;39(8):1559–82.
- [29] Nixon SA. The coin model of privilege and critical allyship: implications for health. *BMC Public Health* 2019;19(1):1637.