Choosing Wisely: The Canadian Rheumatology Association's List of 5 Items Physicians and Patients Should Question

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ABSTRACT. ***Objective.*** To develop a list of 5 tests or treatments used in rheumatology that have evidence indicating that they may be unnecessary and thus should be reevaluated by rheumatology healthcare providers and patients.

Methods. Using the Delphi method, a committee of 16 rheumatologists from across Canada and an allied health professional generated a list of tests, procedures, or treatments in rheumatology that may be unnecessary, nonspecific, or insensitive. Items with high content agreement and perceived relevance advanced to a survey of Canadian Rheumatology Association (CRA) members. CRA members ranked these top items based on content agreement, effect, and item ranking. A methodology subcommittee discussed the items in light of their relevance to rheumatology, potential effect on patients, and the member survey results. Five candidate items selected were then subjected to a literature review. A group of patient collaborators with rheumatic diseases also reviewed these items.

Results. Sixty-four unique items were proposed and after 3 Delphi rounds, this list was narrowed down to 13 items. In the member-wide survey, 172 rheumatologists responded (36% of those contacted). The respondent characteristics were similar to the membership at large in terms of sex and geographical distribution. Five topics (antinuclear antibodies testing, HLA-B27 testing, bone density testing, bone scans, and bisphosphonate use) with high ratings on agreement and effect were chosen for literature review.

Conclusion. The list of 5 items has identified starting points to promote discussion about practices that should be questioned to assist rheumatology healthcare providers in delivering high-quality care. (First Release Feb 1 2015; J Rheumatol 2015;42:682–9; doi:10.3899/jrheum.141140)

Key Indexing Terms:
RHEUMATOLOGY
COST-BENEFIT ANALYSIS
COST-EFFECTIVENESS
CLINICAL PRACTICE GUIDELINE

Optimizing value in medical care is a worldwide concern. In Canada, $192 billion was spent on healthcare in 2010, almost 12% of our gross domestic product[1]. In the United States, evidence shows that an estimated 30% of all medical spending is unnecessary[2] and there is concern that there may be similar waste in Canada. Overuse and overdiagnosis may increase healthcare resource use and strain our healthcare system[3]. Overtesting may also expose patients to harm because all medical interventions have potential side effects[4]. An important underemphasized component of evidence-based medicine is to know when and why specific tests or therapies are unnecessary. Equally important is the role of patient education and the need to dispel the false notion that "more care is better care".

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Accepted for publication December 10, 2014.

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Rheumatology healthcare professionals play a vital role in guiding their patients toward the most effective care for rheumatic diseases. To that end, the Canadian Rheumatology Association (CRA) has joined the national Choosing Wisely Canada campaign with other Canadian specialty societies to develop a list of 5 tests, procedures, or therapies that have evidence indicating that they may not be adding value, and in some instances may be harmful[5]. Choosing Wisely Canada is modeled after the successful Choosing Wisely campaign in the United States[6]. To date, over 60 American specialty medical societies, including the American College of Rheumatology (ACR)[7], have developed lists of 5 tests or treatments that healthcare providers and patients should question.

This list is made by and for rheumatology healthcare providers, although it may provide guidance for other healthcare providers who find it relevant to their practice. Ultimately, this list will serve to encourage conversations and to guide rheumatology healthcare providers and their patients to make wise choices in care.

MATERIALS AND METHODS

The complete methodology is available as Online Supplementary Data 1 at *The Journal of Rheumatology* Website (jrheum.org). We applied a unique multistage process using the Delphi methodology[8] and a literature review, and included patient collaborators in the process. Evidence reports for each of the 5 candidate items were conducted and reviewed by the CRA Choosing Wisely Methodology subcommittee, key opinion leaders, CRA Board of Directors, and 3 patient members of the Canadian Arthritis Patient Alliance. We used a modified system developed by the Scottish Intercollegiate Guideline Network to grade evidence[9]. A Supplementary Table (Online Supplementary Data 1, available online at jrheum.org) shows the custom system for assigning levels of evidence and strength of recommendations.

RESULTS

Figure 1 shows the use of the combination of consensus methods and scientific evidence review to narrow down the list of candidate items considered at each project phase.

Round 1 of the Delphi survey generated 64 unique items that may be wasteful or overused. After round 2, 24 items remained, and after round 3, 13 items were proposed to be possible top 5 items. The final 13 items had high mean agreement and were believed to be at least moderately prevalent. One item was added, but did not achieve high content agreement and was discarded. Some of the items were revised for clarity.

Next, these items were submitted to the CRA membership through an online survey. A total of 172 rheumatologists (35% of those contacted) participated in the member-wide survey. The respondent characteristics were similar to the membership at large in terms of sex and geographical distribution (Table 1). Member agreement was high for the top 13 items and effect rating was also high. Member comments are in Online Supplementary Data 2 (jrheum.org).

A methodology subcommittee discussed the items in light of their relevance to rheumatology, potential effect on patients, and the member survey results, including content agreement and effect ratings (Table 2). Five items were selected to advance for literature review. Other items included rheumatoid factor, antineutrophil cytoplasmic antibodies, anticyclic citrullinated peptide antibodies, extractable nuclear antigen (ENA) testing, radiographs, magnetic resonance imaging (MRI) tests, and nonsteroidal

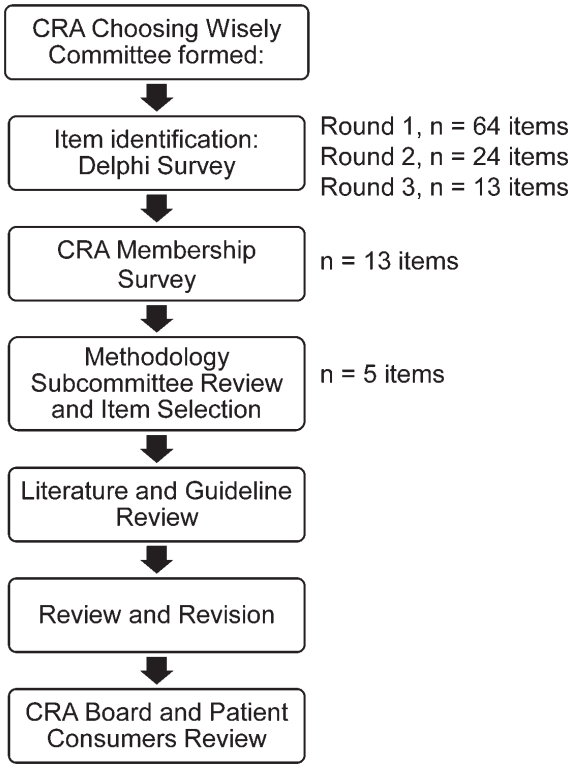

Figure 1. Canadian Rheumatology Association (CRA) Choosing Wisely Methodology.

Table 1. CRA survey response rate.

Variables	Response %	Response Count	CRA Membership	%
Female	51.7	89	244	50.4
Male	48.3	83	240	49.6
British Columbia	14.0	24	66	13.6
Alberta	12.2	21	49	10.1
Saskatchewan	4.7	8	11	2.3
Manitoba	3.5	6	12	2.5
Ontario	40.1	69	223	46.1
Quebec	19.2	33	86	17.8
Atlantic provinces	5.8	10	28	5.8
Territories	0.0	0	0	0.00
Outside Canada	0.6	1	10	2.1
Answered question		172		

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Table 2. CRA survey results of 5 Choosing Wisely Items. Values are mean ± SD or n (%).

Characteristics	Content Agreement, 1–5 Scale*	Content Disagreement, Who Disagree	Effect, Rating as High Effect	Top Pick, Ranking as Top 5
ANA test	4.51 ± 0.89	11 (6.8)	121 (77.1)	131 (84.0)
HLA-B27 test	4.55 ± 0.70	4 (2.5)	107 (70.4)	113 (73.8)
BMD every 2 years	4.46 ± 0.84	6 (3.8)	114 (76.0)	105 (69.5)
Bisphosphonates for low-risk patients	4.09 ± 0.89	8 (5.1)	100 (68.0)	71 (48.0)
Bone scan to assess for arthritis	3.99 ± 1.04	17 (11)	74 (50.0)	64 (43.2)

* Content agreement (anchored 1 = strongly disagree, 2 = somewhat disagree, 3 = neither disagree nor agree, 4 = somewhat agree, 5 = strongly agree). CRA: Canadian Rheumatology Association; ANA: antinuclear antibody; BMD: bone mineral density.

antiinflammatory drug (NSAID) use. A comprehensive literature review was conducted (Online Supplementary Data 2, jrheum.org). Key guidelines, systematic reviews, and position statements were identified. A summary of the supporting evidence for each item was completed (Figure 2). A description of the top 5 items is given here.

1. Do not order antinuclear antibodies (ANA) as a screening test in patients without specific signs or symptoms of systemic lupus erythematosus (SLE) or another connective tissue disease (CTD). Level of evidence: grade IC. Supported by the American College of Pathologists[10], British Columbia Ministry of Health[11], ACR[12], and the Italian Society of Laboratory Medicine Guidelines[13].

ANA testing was identified by members of the CRA as a procedure that was often inappropriately ordered in many adults. At 1 center in Canada, ANA testing was positive only 15% of the time and cost more than $800,000 over 3 years when combined with ENA and anti-dsDNA[14]. Some ANA tests were repeated just 3 months after a previously negative test, and less than 1% became significantly positive. This test was also identified as commonly misused by the ACR[12] and the American College of Physicians.

More selective ordering of ANA tests would not only improve the positive predictive value of the test, but also reduce the volume of tests performed, unnecessary referrals, misdiagnosis, and inappropriate therapy[12]. Inappropriate ordering of ANA could also lead to increased anxiety associated with a positive result. An ANA test should be ordered only if the clinician feels there is a reasonable clinical suspicion of SLE or CTD based on historical information, physical findings, and results of other laboratory tests.

The difficulty with ANA testing is that it is not a specific test for detecting autoimmune CTD. The ANA test is done using indirect immunofluorescence on HEp-2 cells[15]. The sensitivity and specificity of ANA has been reported as 40% and 66%, respectively (positive predictive value 29%, negative predictive value 77%) in detecting CTD by primary care physicians[16]. Newer detection methods with higher specificity are being developed; however, they lack sensitivity and their use is not widespread[17].

The early and accurate diagnosis of autoimmune CTD can be very challenging because the spectrum of signs and symptoms is wide and they often overlap. Initial differentiation from a number of disorders (e.g., infections, malignancy, adverse drug reactions) and different autoimmune diseases is required because these can also have a positive ANA. With the HEp-2 substrate, about 20% of normal people have an ANA titer of 1:40 or higher, while 5% of normal people have an ANA titer of 1:160 or higher[10]. This titer is often used as clinically significant. Thus, to increase its specificity, ANA reports should include the highest titer for which immunofluorescence is detected and include a description of the percentage of patients without any CTD who have similar titers[12,13].

Serial ANA testing once a diagnosis is made is not indicated as it is not a marker of disease activity or relapse. Autoantibodies can precede the full clinical expression of an underlying disease for many years[18,19], and atypical clinical presentations of CTD can occur. Thus, clinical judgment should guide ANA testing in these cases[11].

2. Do not order an HLA-B27 unless spondyloarthritis (SpA) is suspected based on specific signs or symptoms. Level of evidence: grade IIB. Supported by the Assessment of SpondyloArthritis International Society (ASAS)[20,21] and the 3E Initiative in Rheumatology[22].

HLA-B27 testing is another screening blood test that was identified as potentially overused in adults to screen for SpA. It is not useful as a single diagnostic test for SpA because 5–10% of healthy individuals are HLA-B27 positive[23], varying according to ethnicity[24].

To classify someone as having axial SpA with high sensitivity and specificity, HLA-B27 testing can be used in 2 ways according to the 2009 ASAS classification criteria[20,25]. One method uses entirely clinical features and 1 is accompanied by imaging studies. In the imaging arm, the presence of sacroiliitis on radiography or MRI must be accompanied by at least 1 SpA feature, 1 of which can be HLA-B27 positivity[20]. Alternatively, in the clinical arm, a positive HLA-B27 test must be accompanied by at least 2 SpA features[20]. The SpA features include inflammatory

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1. Do not order antinuclear antibodies (ANA) as a screening test in patients without specific signs or symptoms of systemic lupus erythematosus (SLE) or another connective tissue disease (CTD).

ANA testing should not be used to screen subjects without specific symptoms (e.g., photosensitivity, malar rash, symmetrical polyarthritis, etc.), or without a clinical evaluation that may lead to a presumptive diagnosis of SLE or other CTD, since ANA reactivity is present in many non-rheumatic conditions and even in "healthy" control subjects (up to 20%). In a patient with low pretest probability for ANA-associated rheumatic disease, positive ANA results can be misleading and may precipitate further unnecessary testing, erroneous diagnosis, or even inappropriate therapy.

2. Do not order an HLA-B27 unless spondyloarthritis is suspected based on specific signs or symptoms.

HLA-B27 testing is not useful as a single diagnostic test in a patient with low-back pain without further spondyloarthropathy (SpA) signs or symptoms (e.g., inflammatory back pain ≥ 3 mos duration with age of onset < 45 yrs, peripheral synovitis, enthesitis, dactylitis, psoriasis, or uveitis) because the diagnosis of SpA in these patients is of low probability. If HLA-B27 is used, at least 2 other SpA signs or symptoms, or the presence of positive imaging findings, need to be present to classify a patient as having axial SpA. There is no clinical utility to ordering an HLA-B27 in the absence of positive imaging or the minimally required SpA signs or symptoms.

3. Do not repeat dual energy X-ray absorptiometry (DEXA) scans more often than every 2 years.

The use of repeat DEXA scans at intervals of every 2 years is appropriate in most clinical settings, and is supported by several current osteoporosis guidelines. Because of limitations in the precision of testing, a minimum of 2 years may be needed to reliably measure a change in bone mineral density (BMD). If BMD are stable and/or individuals are at low risk of fracture, then less frequent monitoring up to an interval of 5–10 years can be considered. Shorter or longer intervals between repeat DEXA scans may be appropriate based on expected rate of change in bone mineral density and fracture risk.

4. Do not prescribe bisphosphonates for patients at low risk of fracture.

There is no convincing evidence that anti-osteoporotic therapy in patients with osteopenia alone reduces fracture risk. The 2008 Cochrane Reviews for 3 bisphosphonates (alendronate, etidronate, risedronate) found no statistically significant reductions for primary prevention of fracture in postmenopausal women. Fracture risk is determined using either the Canadian Association of Radiologists and Osteoporosis Canada risk assessment tool or FRAX, a World Health Organization fracture risk assessment tool. Both are available as online calculators of fracture risk. Given the lack of proven efficacy, widespread use of bisphosphonates in patients at low risk of fracture is not currently recommended.

5. Do not perform whole body bone scans (e.g., scintigraphy) for diagnostic screening for peripheral and axial arthritis in the adult population.

The diagnosis of peripheral and axial inflammatory arthritis can usually be made on the basis of an appropriate history, physical exam, and basic investigations. Whole body bone scans, such as the Tc-99m MDP scintigraphy, lack specificity to diagnose inflammatory polyarthritis and spondyloarthritis, and have limited clinical utility. The equivalent of radiation exposure of a total whole body bone scan is reported as over 40 routine chest radiographs, thus posing risk.

Figure 2. Canadian Rheumatology Association 5 Items Physicians and Patients Should Question.

back pain, arthritis, enthesitis, dactylitis, psoriasis, uveitis, inflammatory bowel disease, positive response to NSAID, a family history of SpA, HLA-B27 positivity, or an elevated C-reactive protein (CRP). Inflammatory back pain is defined as lasting ≥ 3 months, having an age of onset < 45 years, and having inflammatory features. These include nocturnal back pain, morning stiffness, and improvement with exercise[22].

A positive HLA-B27 can also be used with high sensitivity and specificity to help classify someone as having peripheral SpA in the appropriate setting (i.e., in a patient with peripheral arthritis, enthesitis, and/or dactylitis). In this situation, ≥ 1 SpA feature is required to satisfy a diagnosis of peripheral SpA, 1 of which can be HLA-B27 positivity[21].

Inappropriate use of HLA-B27 antigen testing can lead to unnecessary healthcare spending. If there are insufficient signs or symptoms to suggest SpA on history or physical examination, and radiographic imaging is negative for sacroiliitis, HLA-B27 should not be ordered. A positive result in this setting will not classify the person as having SpA because the diagnosis is of low probability[27]. In fact, the posttest probability of this test in a patient with chronic low back pain alone would not exceed 30%[22]. Alternatively, with the appropriate combination of clinical, laboratory (e.g., CRP), and imaging findings, the pretest probability of SpA increases to at least 80–90%[26]. In this case, HLA-B27 testing will not change management and should not be ordered.

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3. Do not repeat dual energy X-ray absorptiometry (DEXA) scans more often than every 2 years to assess for fracture risk. Level of evidence: grade IC. Guidelines and evidence that supported this statement: 2010 Clinical Practice Guidelines for the diagnosis and management of osteoporosis in Canada[28], 2013 International Society for Clinical Densitometry position development conference on bone densitometry[29], and the 2011 US Preventive Services Task Force recommendation statement[30].

The 2010 guidelines from Osteoporosis Canada[28] recommend the use of baseline bone mineral density (BMD) testing using DEXA scans in adults over 65 and those at risk of fracture. Repeat BMD testing is used to assess risk of future fracture and response to osteoporosis treatment. Because of limitations in the precision of testing, a minimum of 2 years may be needed to reliably measure a change in BMD[31]. Unless rapid changes in bone density are expected, measuring more frequently than every 2 years is unlikely to affect management.

The guidelines suggest repeating BMD testing initially within 1–3 years in patients with a moderate risk of fracture, or those being treated. For individuals with a low risk of fracture who do not appear to be at risk of rapid bone loss, intervals of 5–10 years may be adequate[28]. Prognostic models looking to identify the best timing for repeat BMD measurements suggest repeat intervals of 2–15 years, based on age, sex, baseline BMD, and risk factors for disease progression[32]. In women 67 years and older, osteoporosis develops in less than 10% of those with normal bone density, mild osteopenia, or moderate osteopenia when a screening interval of 15 years, 5 years, and 1 year, respectively, is applied[33].

Changes in BMD do not always correlate with clinical outcomes. Studies have shown that changes in BMD add little to fracture prediction over the baseline BMD[34]. In patients receiving antiresorptive therapy, the change in BMD may account for less than 20% of the fracture risk reduction[35]. A decrease in BMD does not necessarily mean a lack of efficacy, because studies have shown decreased fracture risk in patients receiving osteoporosis therapy despite a decrease in bone density. Thus, physicians should not rely solely on BMD.

When determining if a change in BMD is significant, it is important to consider the limitations of this monitoring method. Serial measurements should be done on the same machine to decrease variability. Changes in patient positioning, body weight, or interval development of osteophytes can affect the BMD reading without there being a change in bone density. If the least significant change reported is equal to or greater than the change in BMD, then it is considered statistically significant. Significant decreases in BMD should prompt health professionals to assess medication adherence and appropriate administration, to reassess for secondary causes of osteoporosis, and to consider change of treatment[28]. Expected annual changes in BMD are usually close to the precision error of the BMD measurements (0.5–2% per yr)[31]. More research is needed to help guide health professionals in determining optimal BMD intervals for monitoring patients at risk for osteoporosis, those receiving treatment, and those taking a drug holiday.

4. Do not prescribe bisphosphonates for patients at low risk of fracture. Level of evidence: grade IA. Supported by the 2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis in Canada[28], and the Cochrane Database of Systematic Reviews[36,37,38].

Identifying the patients with osteoporosis who are at high risk for a first or subsequent fracture is a priority. Fracture risk is determined using either the Canadian Association of Radiologists and Osteoporosis Canada risk assessment tool or the Canadian version of FRAX, a World Health Organization online fracture risk assessment tool[39]. The 2010 Canadian Clinical Practice Guidelines on Osteoporosis recommend that pharmacologic therapy be reserved for patients at high absolute risk of fracture (> 20% probability for major osteoporotic fracture over 10 yrs)[40,41,42]. In contrast, widespread use of antiosteoporotic medication in patients at low risk of fracture (< 10% risk of major osteoporosis fracture over 10 yrs)[28] is not recommended. The National Osteoporosis Foundation 2013 Guidelines also emphasize pharmacotherapy only for those at high risk of fracture[40].

There is no convincing evidence that antiosteoporotic therapy in patients with low bone mass alone reduces the fracture risk. The number needed to treat (NNT) is much higher (> 100) in patients with moderate and low risk (–2.5 < T score < –1)[43]. In high-risk patients with a fracture history and a T score below –2.5, the NNT is 10–20[43]. The 2008 Cochrane Reviews for 3 bisphosphonates (alendronate, etidronate, and risedronate) found no statistically significant reductions for primary prevention of fracture in postmenopausal women[36,37,38]. This finding was confirmed in a 2009 review that highlighted 2 important studies (the Fracture Intervention Trial and the Hip Intervention Program), which failed to find a statistically significant benefit of alendronate treatment on nonvertebral fractures in postmenopausal women with low bone mass and no other clinical risks for fracture[44]. Further, a 2009 cost-effectiveness analysis showed that, given the lack of a clinically important benefit, pharmacotherapy with bisphosphonate in postmenopausal women with low bone mass is not cost-effective[45].

Despite this, 30–40% of a US sample of primary care physicians reported that they recommend treatment of women with mild low bone mass[46,47]. In a survey, 15% of patients would be willing to accept osteoporosis treatment with a fracture risk of only 12%[48]. Dissemination of the guidelines that advocate a personalized fracture risk

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algorithm has the potential to reduce such variation of treatment.

Most studies informing this recommendation come from postmenopausal women. There is little evidence to guide us on the decisions in men, the elderly with propensity for falls, or those with other comorbidities. However, given the lack of proven efficacy, widespread use of bisphosphonates in patients at low risk of fracture is not currently recommended.

5. Do not perform whole body bone scans (e.g., scintigraphy) for diagnostic screening for peripheral and axial arthritis in the adult population. Level of evidence: grade IIB (for polyarthralgia) and grade IIA (for sacroiliitis). No guidelines or evidence are available to support this statement.

The currently available evidence discourages the use of Tc-99m-diphosphate scintigraphy for diagnostic screening of polyarthralgia[49,50]. To our knowledge, there are no current studies looking at its rate of use, and its availability varies across the country. In the CRA survey, it had lower effect ratings and was not ranked as high. Despite a lack of evidence, this test is often seen as overused to diagnose arthritis and spondylitis.

Scintigraphy lacks sensitivity and specificity in the evaluation of polyarthralgia. The Tc-99m-diphosphate tracer readily localizes to subchondral bone, which has abnormal composition and architecture. This commonly occurs in degenerative arthritis and less frequently in inflammatory arthritis, which renders scintigraphy insensitive to distinguish between them. Further, the tracer is readily taken up by all joints to a variable degree in both physiologic and pathologic states, making interpretation of positive findings not specific[49,50]. Nonspecific uptake may lead to further investigations rather than patient reassurance. Moreover, bone scans confer estimated radiation equivalent of over 40 routine chest radiographs[51,52].

Regarding the use of scintigraphy for the evaluation of axial arthritis (namely sacroiliitis), a systematic review estimated the sensitivity and specificity for diagnosis of Grade 1–3 to be 52% and 80%, respectively[53]. Grade 1 confers suspicion for sacroiliitis, Grade 2 minimal abnormality with small erosions, and Grade 3 unequivocal abnormality. Grade 4 sacroiliitis is excluded because it represents an endstage phase of the disease with ankylosis and little inflammatory activity at the site in question. With the low prevalence of these conditions in primary care, use of this test will lead to unacceptable rates of underdiagnosis of those with polyarthralgia and sacroiliitis, and overdiagnosis of those with no true arthritis/sacroiliitis, leading to further unnecessary tests. Based on these findings, scintigraphy should not be used to diagnose axial arthritis.

DISCUSSION

The CRA's list of 5 Choosing Wisely items reflects the need to reevaluate screening and treatment of rheumatic diseases. Rheumatic diseases are complex disorders that can be difficult to diagnose because of the myriad of clinical signs and symptoms. A thorough history and physical examination is imperative for diagnosis, and serological testing should be supplementary because a positive test alone cannot diagnose a disease. As laboratory tests evolve, this may change; however, universal testing is not indicated. Similarly, imaging tests and treatments should be used in the appropriate context.

These top 5 recommendations are not intended to eliminate the use of these tests or treatments entirely or to discourage their use in the appropriate context. There are circumstances when these tests are appropriate and there are exceptions to standardized treatment. Clinical reasoning is paramount, especially in rheumatology where there are complex clinical situations. These lists were also not developed to be quality indicators. However, as we assess and educate clinicians and future rheumatology health professionals, maintaining high-quality care and resource stewardship as healthcare managers needs to be top priorities.

The goal of this list is to provide patients and rheumatology healthcare providers evidence-based information to engage in open discussion about when and in whom these tests or treatments may be most beneficial. Physicians often report feeling compelled to accommodate patients' requests for interventions they know are unnecessary[54,55]. Ultimately, the challenge is to be the patient's advocate, emphasizing that the most wasteful procedures are actually clinically pointless or even harmful. They can refocus the clinical conversation to the commitment to the physician-patient relationship, assuring that the physician will be available as the need arises, as opposed to expensive procedures and tests as the measure of the physician's professional responsibility. Working with patients from the Canadian Arthritis Patient Alliance and Consumer Reports has helped translate these lists into lay language and disseminate these to the public and arthritis patient groups. As part of the movement toward shared decision making with patients, these lists can help patients make informed health decisions.

The limitations of the Choosing Wisely campaign are that there are no studies looking at how much wasteful spending is currently being done in the areas outlined by these 5 items. Owing to resource limitations, we did not specifically search for observational or cost-effectiveness studies. Because all these tests and treatments are appropriate in some circumstances, measuring overuse and overtesting is not simple. Measuring complications and inappropriate care is also difficult. Evidence is needed on how overusage of these specific items can be avoided. A commitment is needed to develop best-practice, knowledge-translation interventions (e.g., 1 group has proposed an algorithm to limit inappropriate ANA testing with significant cost savings[14]) and to rigorously assess them. Engaging healthcare policy and decision makers creates an

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environment of accountability. To be successful in improving the quality of care, healthcare providers and patients need clear guidance and support.

The CRA will be disseminating the first 5 items among its members and evaluating how they are observed. As new evidence is generated, these items may be updated on the CRA Website. Although physicians acknowledge that healthcare costs are a problem, many may be tempted to look only at other healthcare providers' waste and not recognize their own actions[56]. Physician autonomy and leadership can only be affirmed if accompanied by acceptance of responsibility and accountability[57].

It is vital that rheumatology healthcare providers lead in caring for patients with rheumatic diseases. Each time we order a test, treatment, or procedure, we should consider the evidence and whether it will add value. Now is the time for rheumatology healthcare providers to choose wisely.

APPENDIX 1.

List of study collaborators. Canadian Rheumatology Association Choosing Wisely Committee: Jennifer Burt, Dr. Gregory Choy, Dr. Martin Cohen, Dr. Natasha Gakhal, Dr. Nadia Luca, Dr. Dharini Mahendira, Dr. Sylvie Ouellette, Dr. Proton Rahman, Dr. Dawn Richards, Dr. Edith Villeneuve, Dr. Diane Wilson, and Dr. Pooneh Akhavan.

ACKNOWLEDGMENT

We acknowledge the guidance of Dr. Jinoos Yazdany and Dr. Jacob Karsh; Choosing Wisely Canada members Dr. Wendy Levinson, Tai Huynh, and Karen McDonald; content experts Dr. Lisa Ehrlich, Dr. Marvin Fritzler, and Dr. Rick Adachi; Canadian Rheumatology Association administrative support Christine Charnock, Virginia Hopkins, and Sharon Brinkos; medical librarians Tamara Radar and Ekaterina Petkova; and employees of Health Force Ontario: Laura Corbett, Corinne Holobowich, and Kellee Kaulback.

ONLINE SUPPLEMENT

Supplementary data for this article are available online at jrheum.org.

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