

## SUPPLEMENT

# Quality indicators in rheumatoid arthritis care: using measurement to promote quality improvement

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## ABSTRACT

Quality of care improvement has become a priority for decision-makers. Important variations in the quality and cost of care are being documented often without evidence of improved outcomes. Therapeutic advances are not consistently applied to practice despite efforts from professional organisations to create guidelines. The quality movement emerged following increasing evidence that the creation and measurement of quality indicators can improve quality of care and health outcomes. Quality indicators can measure healthcare system performance across providers, system levels and regions. In rheumatology, early efforts to develop quality measures have focused on examining all aspects of care while more recent efforts have focused on disease course monitoring. The American College Rheumatology has recently endorsed seven quality indicators for rheumatoid arthritis (RA) that are evidence based and measurable for use in routine rheumatology practices. This review provides an overview on quality indicators in rheumatology with a focus on RA, and discusses the application of quality measures into routine rheumatology practices to improve quality of care for RA.

## KNOWLEDGE TRANSLATION: A NEW CHALLENGE

Rheumatoid Arthritis (RA) is a major health concern due to increasing healthcare costs and lost productivity costs. The aging of the population in most developed countries will lead to a marked increase in the prevalence of RA with its economic consequences.<sup>1</sup> Discovery research has brought about major advances to the therapeutic approaches for RA; however, evidence suggests that clinicians who treat RA often fail to incorporate these discoveries into routine care consistently. Furthermore, research has shown that approximately 30–40% of patients do not get treatments of established effectiveness and 20–25% of patients get care that is not needed or is potentially harmful.<sup>2–3</sup> These findings have been confirmed for most diseases, and as a result the Institute of Medicine released two landmark reports that identified the urgent need to improve quality of healthcare, calling for a significant shift in the way care is organised and delivered.<sup>4–5</sup> Consequently, decision-makers are increasingly focused on implementing strategies that ensure safe, effective, timely and equitable care.

## IMPROVING KNOWLEDGE TRANSLATION

Recent research demonstrates that the quality of healthcare provided to patients living with RA may be suboptimal, a gap exists between the care

received and evidence-informed best practice recommendations for care.<sup>6–7</sup> Given the recognition of disparities and variations in clinical care for RA,<sup>8–9</sup> the increasing incidence of RA,<sup>10</sup> and rising healthcare costs for those with RA,<sup>11–12</sup> rheumatology stakeholders are motivated to identify strategies that will enhance the provision of quality care for RA. According to the Institute of Medicine, quality is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.<sup>13</sup> Therefore, most rheumatologists seek to improve health outcomes of patients with RA by providing the right care to the right patient at the right time.<sup>14</sup> However, these efforts must keep pace with the newly discovered scientific knowledge and evidence supporting effective treatment strategies. Practice guidelines and quality indicators are tools that can facilitate the uptake of knowledge, support evidence-based decision making, and improve the overall quality of RA care.<sup>15–19</sup>

There is evidence that monitoring and measuring healthcare delivery can improve quality of care and health outcomes.<sup>19–20</sup> The quality movement within hospital settings has a long history, spanning over at least three decades.<sup>21–22</sup> However, quality improvement methods have only begun to be applied in the field of rheumatology since the early 2000s.<sup>23</sup> To understand the application of quality methods in the context of rheumatology care for RA, we conducted a review of the literature in MEDLINE, to assess the current state of RA clinical practice guidelines (CPG) and quality measures. A citation search in Web of Science was also conducted for all relevant articles identified. The authors (CB, SM) conducted the search, screened, selected and reviewed relevant articles describing tools or measures that can guide best practices and improve quality of care in RA. The findings of the review are outlined in this paper.

## CLINICAL GUIDELINES

Many CPG and consensus statements (CS) based on systematic reviews and the collective opinion of experts have been developed over the past 12 years to improve treatment and care for RA. A 2010 review by Hazlewood *et al*<sup>24</sup> found that 57 RA guidelines, including both CPG and CS, have been developed internationally, of which the first guideline for the early management of RA was developed and published in 2000.<sup>25</sup> Following this first publication, several professional organisations and

groups have developed and endorsed guidelines for early and late RA,<sup>26–32</sup> with the most recent guidelines focusing on biological disease modifying anti-rheumatic drugs (DMARD) (58% of CPG and 42% of CS address biological DMARD). However, there is significant variability in the methodological quality of RA guidelines. Only 38% of assessed guidelines (12 CPG and 0 CS) were rated highly.<sup>24 33 34</sup> Therefore, to improve the quality of rheumatology care, rheumatologists must use RA guidelines of high methodological quality that are evidence based and systematically developed.

Recognition of high quality RA guidelines as tools to guide best practices and improve quality has not resulted in the incorporation of guidelines into routine rheumatology practices.<sup>35</sup> Despite many RA guidelines supporting early, aggressive DMARD treatment for RA,<sup>25–32</sup> studies have found that fewer than 50% of patients receive DMARD treatment within 6 months to 1 year of symptom onset.<sup>6 9 36</sup> In addition to delays to treatment, recent studies have also shown that rheumatologists have poor adherence to minimal requirements for RA care, particularly related to the completion of appropriate baseline laboratory testing and radiographs before treatment initiation.<sup>8 37</sup>

### DEVELOPMENT OF QUALITY INDICATORS

Quality indicators are often developed from guidelines, systematic literature reviews, or expert panel consensus using a systematic approach.<sup>38</sup> The use of quality of care indicators is an important strategy to measure and evaluate if the care provided in the usual clinical setting adheres to current evidence-informed best practices. Achievement of quality indicators is often reported as a quality score: quality scores (%) are calculated by dividing the number of eligible patients receiving a process of care ( $\times 100$ ) by the number of patients eligible for a process of care. It is important to note that some patients may be ineligible for a specific indicator; for example, patients with serious medical contraindications to a process of care would not be considered eligible for that process of care. For instance, methotrexate is frequently recommended as the first line of treatment, but not all patients qualify to start on this drug because of comorbidities such as liver abnormalities. These patients would be eliminated from the denominator in the calculation of quality scores. The feasibility of measuring this quality score will depend on the availability of this information in the medical record. This often represents a challenge for the application of quality indicators from routine medical records.

Desai and Yazdany<sup>39</sup> define quality indicators as the specific and measurable aspects of care when translation into measurement allows the evaluation of the performance in practice

(process measures). In rheumatology, quality measurement is focused primarily on processes of care. Process measurement allows actionable targets for improvement instead of assessing outcomes of care (such as remission or low disease activity), which are difficult to measure and can take several years to achieve.<sup>34 39 40</sup> It is important to note that not all processes of care are associated with improved quality. To implement effective quality measures in routine care, strong scientific evidence must support the linkage between the care processes and the outcomes of care. Evidence from randomised controlled trials and observational studies can be used to demonstrate how an aspect of care improves important clinical outcomes in patients with RA.

There is no question that linking process-based quality indicators to outcome measures requires considerable resources and infrastructure.<sup>34 38</sup> Irrespective of resource and infrastructure constraints, it is important to evaluate critically the strengths and weaknesses of all measures and examine all relevant domains of care provided in table 1, including structure, process, outcome, patient experience, access and efficiency.<sup>22 35</sup>

### QUALITY INDICATORS IN RA

In rheumatology, the early development of quality indicators focused on all aspects of care in RA,<sup>7 41</sup> while more recent efforts have examined disease course monitoring.<sup>42</sup> In 2005, the first RA measure was assessed as part of the national committee for quality assurance health plan employer data and information set, and measured whether patients with RA had received at least one ambulatory prescription for a DMARD during the measurement year.<sup>43</sup> The American College of Rheumatology (ACR) has taken the responsibility to endorse quality indicators for RA that are evidence based, measurable, acceptable to health providers and implementable in reimbursement structures. In 2006, the ACR released 16 preliminary evidence-based quality indicators for rheumatology that included three indicators for RA.<sup>44</sup> Since the ACR starter set, seven RA quality indicators have been endorsed (table 2).<sup>45</sup> In addition, quality indicators for RA have been proposed by van Hulst *et al*,<sup>42</sup> which examine process, structure and outcomes of care (table 3); however, their validity and applicability for use across rheumatology practices remains to be determined.

### QUALITY MEASUREMENT AND IMPROVEMENT

Quality improvement initiatives aimed at improving RA care are becoming increasingly important. Although quality indicators for RA have been developed, their use in routine clinical practice to measure processes of clinical care and improvement in outcomes is a challenge. For example, in the USA, the quality measures for RA that have gained national acceptance reflect readily available data that are measurable and contained within administrative claims. However, most of these measures pertain to quality of care for treatment with DMARD and do not evaluate broader areas of care such as assessing disease activity and functional status.<sup>42</sup> Furthermore, evaluation of RA quality indicators suggest that not only do rheumatologists adhere to minimal requirements for RA, but reporting of adherence to various measures is influenced by data sources (eg, patient report vs medical record).<sup>44</sup> To improve quality, RA quality measures are being incorporated into reimbursement structures of the US healthcare system in an attempt to increase adherence to minimum requirements for RA.<sup>46–48</sup> However, the effectiveness of reimbursement or ‘pay-for-performance’ models in promoting higher quality of care has yet to be determined.

**Table 1** Measures across six domains of quality\*

Quality indicator domain	Definition
Structure	Describes the innate characteristics of providers and the system and the organisational aspects of care
Process	Assesses actual healthcare service delivered to patients by healthcare providers
Patient experience	Describes the patient's perception of quality of care
Outcome	Assesses the end result or the final goals of the delivered care
Access	Evaluates the provision of timely and appropriate healthcare
Efficiency	Describes the relationship between clinical performance and resource use

\*Adapted from Donabedian<sup>22</sup> and Saag *et al*.<sup>35</sup>

**Table 2** ACR endorsed quality measures for RA\*

Quality indicator	Description
Tuberculosis screening	Percentage of patients 18 years and older with a diagnosis of RA who have documentation of a tuberculosis screening performed and results interpreted within 6 months before receiving a first course of therapy using a biological DMARD
Periodic assessment of disease activity	Percentage of patients 18 years and older with a diagnosis of RA who have an assessment and classification of disease activity at least once within 12 months
Functional status assessment	Percentage of patients 18 years and older with a diagnosis of RA for whom a functional status assessment was performed at least once within 12 months
Assessment and classification of disease prognosis	Percentage of patients 18 years and older with a diagnosis of RA who have an assessment and classification of disease prognosis at least once within 12 months
Glucocorticoid management	Percentage of patients 18 years and older with a diagnosis of RA who have been assessed for glucocorticoid use and, for those on prolonged doses of prednisone greater than 10 mg daily (or equivalent) with improvement or no change in disease activity, documentation of glucocorticoid management plan within 12 months
Treatment	If a patient has an established diagnosis of RA, then the patient should be treated with a DMARD unless contraindication to DMARD, inactive disease or patient refusal is documented
Treatment	If a patient has RA and is being treated with a DMARD and there is evidence of increased disease activity or there is evidence of progression of RA bony damage over a 6-month period of time, then one of the following should be done: change DMARD dose or route of administration; change DMARD; add an additional DMARD; start or increase dose of glucocorticoids or provide local glucocorticoid injection(s), unless the patient refuses or all of the above are contraindicated

\*The American College of Rheumatology (ACR): rheumatoid arthritis quality indicators.<sup>45</sup>  
DMARD, disease-modifying antirheumatic drug; RA, rheumatoid arthritis.

## CONCLUSION

The challenge for all rheumatology stakeholders is to improve quality and health outcomes of RA in the most efficient and cost-effective manner. Although guidelines are designed to help with healthcare decision making, their incorporation into routine clinical care has been suboptimal. Quality indicators are necessary tools that can improve the delivery of quality care through the appropriate measurement of healthcare processes and outcomes across providers, system levels and regions. In rheumatology, quality measures for RA are predominantly process based. Rheumatologists must assume a leadership role in developing and validating new quality measures that are meaningful and implementable in routine care. Ideally, integration of quality of care indicators into data collection systems such as electronic health records is essential to facilitate ongoing quality and performance measurement in rheumatology practice. Continued collaborative efforts are needed among rheumatology healthcare stakeholders, including policy makers and payers across jurisdictions to develop, validate and implement quality measures that assess all aspects of RA care. Ultimately, the implementation of quality measures to evaluate and monitor performance in routine rheumatology practices

**Table 3** Quality indicator set for monitoring disease course in RA\*

Quality indicator	Description
Schedule of follow-up visits	Process indicator measuring frequency of follow-up visits for RA patients who have and have not achieved remission
Frequency of measurement	Process indicator measuring when disease activity is assessed with DAS28 in RA patients at baseline and follow-up visits
Measure functional impairment	Process indicator measuring when functional impairment is assessed yearly with HAQ in RA patients
Measure structural damage	Process indicator measuring when structural damage is assessed in RA patients at baseline, 1 year after diagnosis and after a period of persistent disease activity
Change medication	Process indicator measuring targeted change in medication depending on disease activity in RA patients
Preconditions for measuring disease activity	Structural indicator measuring number of outpatient rheumatology clinics with specialised rheumatology nurse providers providing their own consultations, level of joint count training among clinic rheumatologists and specialised nurses, electronically documented DAS28, availability of DAS28 during consult with rheumatologist

\*Adapted from Van Hulst *et al.*<sup>42</sup>

DAS28, disease activity score in 28 joints; HAQ, health assessment questionnaire; RA, rheumatoid arthritis.

presents an opportunity to improve the quality of care delivered and enhance outcomes for patients with RA.

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