
Quality Measures 101: what every rheumatologist should know

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ABSTRACT

In this paper, we review the essentials of quality measurement for rheumatologists. We will focus on four specific issues: why should rheumatology focus on quality measures now? how can rheumatology construct and assess quality measures? what can rheumatologists expect to achieve with quality measures? will quality measures be used for reimbursement?

Introduction

There is a sense of inevitability to the widespread adoption of quality measurement in health care. We all recognize that not all health care is equal. Some patients who may need a joint aspirated to rule out infection receive only empiric treatment with an anti-inflammatory agent. Other patients who should receive a uric acid-lowering therapy for recurrent disabling gout attacks receive only repeated glucocorticoid tapers. Still other patients with rheumatoid arthritis never receive appropriate disease-modifying anti-rheumatic drugs (DMARDs), but receive instead only a mix of analgesic drugs and corticosteroids. We all have observed such care and recognize it as suboptimal. These may be the easy-to-spot cases of poor quality rheumatic disease care. Fortunately, many episodes of suboptimal care do not lead to bad outcomes, but many others do result in poor patient outcomes.

How then do we create measures of quality ("quality measures") that facilitate improvements in the quality of care? Improvement requires measurement. We are taught early on in medical school that careful repeated observation is often the key to determine whether a patient is improving. Observation requires objective measurements – the temperature curve or changes in the ESR in a patient. In a similar fashion, determining whether the quality of care has improved over time requires longitudinal objective measurements.

In this paper, we will review the essentials of quality measurement for rheumatologists, addressing four specific issues:

- Why should rheumatology focus on quality measures now?
- How can rheumatology construct and assess quality measures?
- What can rheumatologists expect to achieve with quality measures?
- Will quality measures be used for reimbursement?

Quality measures: why now?

As we note above, not all rheumatic disease care is of equal quality. This phenomenon has been well documented in prior studies (see Table I). We will discuss several important examples from the literature concerning patients with gout, lupus, and rheumatoid arthritis.

A set of quality measures has been developed for gout and the use of allopurinol that was then applied to the care of patients in a large primary care database from the UK (1, 2). Patients were selected based on their use of allopurinol or a diagnosis of gout and followed forward, assessing several of the quality measures: 1) the dosing of allopurinol in patients with renal impairment, 2) concomitant use with azathioprine or 6-MP, and 3) the use of allopurinol in asymptomatic hyperuricemia. These measures were developed using a RAND process that relied on expert interpretation of the existing literature. As noted in Table I, performance on these quality measures was not perfect: 25% to 57% of these patients had allopurinol dosing that did not meet one of the quality measures. This study suggests that the quality of care for gout is variable.

Another important study that demonstrates variable quality of care for rheumatic diseases focused on mortality differences for patients hospitalized with lupus (Table I) (3). This study examined data for more than 15,000 patients with lupus hospitalized in two

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Table I. Evidence suggesting variable quality in rheumatic disease care.

Reference	Disease	Quality measure	Results
Mikuls (2)	Gout	Measures tested: 1. Allopurinol dosing adjustment in renal impairment 2. Allopurinol dosing adjustment when used with azathioprine 3. No allopurinol use in asymptomatic hyperuricemia	Adherence with measures: 1. 137/185 (74%) 2. 39/52 (75%) 3. 204/471 (43%)
Ward (3)	SLE	In-hospital mortality for lupus patients	Higher physician volume of lupus admissions is significantly associated with improved mortality.
Schmajuk (4)	RA	DMARD prescribing for RA	Received a DMARD in one-year follow-up: 1763/5864 (30%)

DMARD: disease-modifying antirheumatic drug; RA: rheumatoid arthritis; SLE: systemic lupus erythematosus.

different US states and treated by close to 10,000 physicians. The authors examined the relationship between the volume of patients admitted by a given physician and the in-hospital mortality rate. They found that in-hospital mortality ranged from 4.1% in physicians admitting less than one lupus patient per year to 2.5% in those admitting over three patients per year. Differences between groups remained after case-mix adjustment. While the study did not identify any specific processes of care that were clearly linked to better outcomes, it suggests that experience with managing these patients translates into better outcomes.

Over the last several years, increasing data support the importance of DMARD therapy for patients with rheumatoid arthritis (RA). Receipt of DMARDs is one of the quality measures adopted by the American College of Rheumatology (ACR) (see Table II) (4). A recent study examined DMARD prescribing among older adults who had at least three visits for RA (Table I) (5). All patients in this cohort had full prescription insurance. Yet, only 30% filled a DMARD prescription during a one-year follow-up, although the percentage of patients receiving DMARDs increased consistently over the study period from 1997–2004. While some patients refuse treatment and others may have contraindications, the large percentage not receiving DMARDs strongly suggests that the quality of prescribing for RA is variable.

As more health care data become available and organized in searchable databases, the capacity to measure quality is enhanced. However, many quality

measures continue to require detailed chart review. Even when such measures can be assessed using health care utilization (“claims”) data, there needs to be careful consideration of exactly how to specify such measures (see Section below).

The data document significant variation in the quality of rheumatic disease care. This compels us to develop quality measures and implement their measurement now.

Quality measures: what they are

Quality measures, also termed quality indicators, are defined by the Institute of Medicine as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (6). All of the current quality measures adopted by the ACR were originally developed as part of the Arthritis Foundation Quality Indicator Project (AFQuIP) (7). These measures were developed following a rigorous evidence-based method that used the RAND consensus process (8). Several examples of these quality measures are shown in Table II. These measures take a very specific format: “If,” “then,” “because.” The “If” statement clarifies the specific clinical setting that the quality measure applies to, usually defined by patient characteristics. For example, a laboratory testing quality measure may refer to patients with gout taking a uric acid-lowering agent.

In addition to focusing on a narrow clinical setting, the quality measure must clearly specify the appropriate process of care. This is the “then” statement. For example, the process

may be receipt of a laboratory test, prescription of a medication or set of exercises, or adjustment to a therapeutic regimen. While these processes of care may sound clear and straightforward to measure, many aspects of the measure require detailed specifications. Such specifications include the acceptable data sources and date ranges for assessment.

An example of the potential complexity in specifying a quality measure is demonstrated by the laboratory monitoring quality measure (Table II). Consider how to define the appropriate periods for assessing laboratory testing when it is recommended that monitoring occur every 8 weeks for methotrexate. Should one divide the assessment period into 8-week periods, *i.e.*, January 1 to February 27, February 28 to April 20, and then check for laboratory testing in each of those periods? Or, should one re-start the laboratory assessment period each time one of the tests of interest is performed? As one might anticipate, these different methods give different answers (9).

Finally, the “because” statement refers to the evidence-basis for the specific measure. All the relevant literature is reviewed and an evidence report is developed for use in the consensus process. Experts are brought together to review the evidence report, vote on quality measures, and to suggest new measures using a formal RAND appropriateness method.

Fulfilling the promise of quality measures

The goal of quality measures is to improve quality of care, and thus enhance

Table II. Example quality indicators from the American College of Rheumatology (ACR).

Disease	Topic	Indicator	Source
Rheumatoid arthritis	Treatment	IF a patient has an established diagnosis of rheumatoid arthritis, THEN the patient should be treated with a DMARD unless contraindication to DMARD, inactive disease or patient refusal is documented.	NCQA/HEDIS, AFQuIP, BSR/RCP
Gout	Treatment	IF a gout patient has either: 1) a history of nephrolithiasis or 2) significant renal impairment (creatinine clearance ≤ 50 mg/min), THEN a xanthine oxidase inhibitor should be started as the initial urate-lowering medication rather than a uricosuric agent.	UAB CERT
Drug monitoring	Treatment	IF a patient has established treatment with a DMARD or glucocorticoids, THEN monitoring for drug toxicity should be performed according to recommended guidelines.	AFQuIP

NCQA/HEDIS: National Committee on Quality Assurance/Health Employer Data Information System; AFQuIP: Arthritis Foundation Quality Indicator Project; BSR/RCP: British Society of Rheumatology/Royal College of Physicians; UAB CERT: University of Alabama Center for Education and Research on Therapeutics.

outcomes. When quality measures “work,” they bring value to patients and the health care system. Most measures are processes of care that may only have a proposed, and not proven, link to improved outcomes. For example, measuring appropriate laboratories every 8 weeks in patients taking DMARDs is a process of care based on evidence, but has never been proven to lead to better outcomes. Ideally, all processes of care considered quality measures would have a clear link to improved outcomes. This is not the case for the first set of quality indicators adopted by the ACR, but it is the goal over time.

The link between process measures and outcomes has not been as strong as hoped for when examined for outcomes in other clinical areas, such as cardiology. A recent study examined data from the 962 hospitals contributing data to the National Registry of Myocardial Infarctions (10). These data on process measures for MI were compared against the 30-day mortality rates. Some of the process measures, such as use of beta-blockers, aspirin and ACE inhibitors, were strongly correlated with 30-day mortality rates. However, other process measures, such as smoking cessation counselling and timely reperfusion therapy, had much weaker correlations. Overall, the composite score on all process measures only explained 6% of the variation in risk-standardized 30-day mortality. Clearly, rheumatology will need to focus on how our current process measures relate to patient outcomes.

Once quality measures have been established, they can be incorporated into clinical practice using information technology. Structured electronic health records can embed quality measures into the routine data collection that occurs in a typical visit. Reminders about specific quality measures can be triggered in the electronic health record when a specific set of criteria are met. For example, if a patient with RA who has a worsening clinical condition over several visits is being seen, a reminder to change treatment can be triggered to help remind physicians not well-versed in RA care. These types of reminders have been found to improve care in other clinical settings (11).

The ACR is actively developing tools for clinicians that would help implement quality measurement and that would help remind practitioners of recommended management in real-time.

Are quality measures ultimately a cost control tool?

Quality measures have taken on a new meaning because of the pay-for-performance movement. Some see pay-for-performance as a way of making doctors (and the health care system) pay attention to quality measures. The US Medicare program has instituted a Physician Quality Reporting Initiative that will reward physicians who meet standards on at least three of 74 different quality measures, none specifically related to arthritis (12). However, a recent study calls into question whether the proposed incentives are large enough to change behaviors.

Investigators used data on over 100,000 patients with acute myocardial infarction seen between 2003 and 2006 (13). These patients were seen either at hospitals participating in the Medicare demonstration project on pay-for-performance or at control hospitals. The hospitals receiving pay-for-performance were no more likely to improve on process measures of acute myocardial infarction during the study period. As well, patients' outcomes were no better when seen in hospitals receiving pay-for-performance.

These data suggest that paying for performance may not be the lever that changes physicians' (or health systems') behavior regarding quality measures. However, there is an increased demand for public reporting on such quality measures. More and more information is being placed in public repositories such as the recently launched Hospital Compare program on the Center for Medicare and Medicaid Services website (14). Such public reporting may be a more potent incentive for improvement on quality measures than pay-for-performance.

Conclusion

We have reviewed quality measures, their use in rheumatology, and how they may translate into new reimbursement mechanisms. While the science behind quality measurement in health care is only in an early phase, several conclusions can be drawn:

1. Improving quality to enhance patient outcomes is a goal we must strive

for; it will be greatly assisted by a tool for measurement that is part of daily practice;

2. For quality measures to be meaningful, they must ultimately improve patient outcomes;
3. For quality measures to be widely disseminated, they must be embedded in routine data collection systems such as electronic health records; and
4. The role of quality measures in physician payment is unclear, but do not be surprised when your local health insurance payor asks you to demonstrate your performance on a set of quality measures.

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