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Rheumatologists' Perception of Systemic Lupus Erythematosus Quality Indicators: Significant Interest and Perceived Barriers

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Abstract

Introduction/objectives—Differences in quality of care may contribute to health disparities in systemic lupus erythematosus (SLE). Studies show low physician adherence rates to the SLE Quality Indicators but do not assess physician perception of SLE Quality Indicators or quality improvement.

Method—Using a cross-sectional survey of rheumatologists in the Southeastern United States, we assessed the perception and involvement of rheumatologists in quality improvement and the SLE Quality Indicators. Using electronic mail, an online survey of 32 questions was delivered to 568 rheumatologists.

Results—With a response rate of 19% (n = 106), the majority of participants were male, Caucasian, with over 20 years of experience, and seeing adult patients in an academic setting. Participants had a positive perception toward quality improvement (81%) with a majority responding that the SLE Quality Indicators would significantly impact quality of care (54%). While 66% of respondents were familiar with the SLE Quality Indicators, only 18% of respondents reported using them in everyday practice. The most commonly reported barrier to involvement in quality improvement and the SLE Quality Indicators was time.

Conclusions—Rheumatologists had a positive perception of the SLE Quality Indicators and agreed that use of the Quality Indicators could improve quality of care in SLE; however, they identified time as a barrier to implementation. Future studies should investigate methods to increase use of the SLE Quality Indicators.

Keywords

systemic lupus erythematosus; quality improvement; quality indicators; survey

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Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease with high rates of mortality and health disparities [1]. Differences in quality of care may contribute to health disparities in SLE. Quality of care has been defined by the Institute of Medicine as “the degree to which health services for individuals and populations increases the likelihood of desired health outcomes and are consistent with current professional knowledge [2].” To study quality of care in SLE, a Quality Indicator set for SLE was developed by combining evidence from the literature and expert consensus [3]. Quality indicators are “retrospectively measured elements of practice performance for which there is evidence or consensus that can be used to assess the quality of care provided and hence change it”[4]. The SLE Quality Indicators consist of 20 items that recommend appropriate practices centered on diagnosis, general preventative strategies, osteoporosis prevention and treatment, screening for cardiovascular disease, drug toxicity monitoring, renal disease, and reproductive health [3]. The SLE Quality Indicators not only provide evidence-based guidelines to improve quality of care but also to direct care that is preventative, cost saving, and protective against disease damage [5].

One study in SLE nephritis found low provider adherence rates to the SLE Quality Indicators ranging from 13% to 56% [6] with other studies showing similar low provider adherence rates [7–10]. To the best of our knowledge, no studies exist, however, that assess provider knowledge, attitudes, or barriers to implementing the SLE Quality Indicators. Further, no studies exist that assess rheumatologists’ perceptions and involvement in quality improvement. Using a cross-sectional survey of US adult and pediatric rheumatologists in the Southeast, we assessed the perception and involvement of rheumatologists in quality improvement as well as their knowledge, perception, and willingness to use the SLE Quality Indicators.

Methods

Survey creation and content

Using electronic mail (email), an online, self-administered, survey was sent to 610 adult and pediatric rheumatologists in the Southeastern United States. Predominately southeastern states were targeted as a convenience sample and included Alabama (AL), Arkansas (AR), Georgia (GA), Indiana (IN), Kentucky (KY), Louisiana (LA), Mississippi (MS), North Carolina (NC), South Carolina (SC), and Tennessee (TN). The survey was intended for rheumatologists currently seeing SLE patients and sent between June and August 2015. At least two reminder emails were sent to improve the response rate. Approval for the study was given by the Institutional Review Board of Vanderbilt University Medical Center [# 150649]. By completing the online survey, respondents gave electronic informed consent.

The survey was created in REDCap by two rheumatologists and composed of 32 questions. REDCap is a secure web-based application used for developing and managing online surveys and databases [11]. Responses received in REDCap were anonymous and could not be tracked to the respondent’s email address. Questions were presented in a format of multiple choice, slider/visual analog scale, and dichotomous yes versus no. Selected

questions also had the option for a free text response. Questions were organized into themes of demographics, practice description, quality improvement, and SLE Quality Indicators. Demographics included age, gender, race/ethnicity, board certification, and years since fellowship completion. Practice characteristics included location, type of practice (academics vs. private practice), type of patients (adult vs. pediatrics vs. both adult and pediatrics), and number of total patients and SLE patients seen in a week. Providers were asked to estimate the number of SLE patients with nephritis, insured through Medicaid, and currently on systemic corticosteroids and antimalarials. Medicaid is a United States government insurance program that provides healthcare coverage to low income adults and their children, pregnant women, and patients with disabilities. The respondents' perception, involvement, and barriers to involvement in quality improvement and the SLE Quality Indicators were also assessed. The survey was reviewed by an institutional focus group of rheumatologists for internal validity before statewide distribution (Supplemental Data).

Respondent Recruitment

Initially, emails of rheumatologists were obtained through recruitment within local state rheumatology societies in TN, AL, KY, IN, and SC. To increase sample size, however, additional emails were obtained from the American College of Rheumatology member directory for other Southeastern states including GA, LA, MS, and AR. States were selected based on proximity to Vanderbilt and TN and ability to recruit within the rheumatology state societies.

Statistical Analyses

Survey respondent and practice characteristics were presented using descriptive statistics. Years since fellowship completion were categorized as 0–4, 5–9, 10–19, and > 20 years, with currently in and not yet completed combined with the 0–4 years. Total patients seen in a week was categorized as < 10, 10–29, 30–49, > 50 patients, and SLE patients seen in a week was categorized as < 5, 5–9, 10–19, 20–29, > 30 patients. We assessed differences in respondent characteristics and responses using Chi-square or Fisher's exact test for categorical variables and the Mann-Whitney U test for continuous variables. When there were more than 2 groups, the Kruskal-Wallis H test was used. The associations between respondents' practice characteristics and practice habits were tested using Spearman correlation. All statistical analyses were conducted using IBM SPSS Statistics version 23.0. Two-sided p values < 0.05 were considered to indicate statistical significance.

Results

Demographics and practice characteristics of survey respondents

There were 610 emails distributed, and 568 were received successfully with 42 undeliverable or out of the office responses. Of the 568 emails received, there were 106 responses resulting in a response rate of 19%. Of the 106 responses, 5 rheumatologists did not complete the survey due to not seeing SLE patients and 2 rheumatologists opted out of completing the survey for undisclosed reasons resulting in an "effective" response rate of 17%. Survey respondents were predominately male, Caucasian, and had spent over 20 years in practice (Table 1). The respondents were more likely to be in academics and see adult patients, and

see on average more than 50 patients per week and 5–9 SLE patients per week (Table 1). Respondents were from the Southeast region with TN (28%, n = 28), AL (26%, n = 26) and SC (14%, n = 14) being the most represented. Other practice locations included AR (2%, n = 2), GA (7%, n = 7), IN (3%, n = 3), KY (5%, n = 5), LA (3%, n = 3), MS (5%, n = 5), and NC (4%, n = 4). The response rates for the states with rheumatology society endorsement were AL at 33%, TN 29%, SC 19%, KY 17%, and IN 6%. The remaining states had the following response rates: MS 19%, GA 7%, AR 6%, and LA 4%. The NC respondents were recruited through the South Carolina Rheumatism Society and included in the SC response rate. Response rates were similar in states with society endorsement vs. states without endorsement ($21\% \pm 11$ vs. $9\% \pm 2$, $p=0.09$). There were no statistically significant differences in demographic or practice characteristics between respondents from endorsed states vs. respondents from other states.

Respondents estimated that approximately 37% of their SLE patients were insured by Medicaid, 35% with nephritis, 90% on antimalarials, and 47% on systemic corticosteroids. The associations between respondents' practice characteristics and type of SLE patients seen were examined. Compared to respondents who saw adult and both adult and pediatric patients, those who saw pediatric patients were more likely to report a higher percentage of SLE patients insured through Medicaid (71% vs. 33% vs. 34%, $p = 0.002$) and with nephritis (65% vs. 31% vs. 34%, $p = 0.001$). Similarly, respondents in an academic practice reported seeing more SLE patients insured through Medicaid ($p < 0.001$), more SLE nephritis patients ($p < 0.001$), and a higher proportion of SLE patients on corticosteroids ($p = 0.004$) compared to respondents from private practice.

Perception of Quality Improvement

For respondents' perception of quality improvement, 81% (n = 80) of respondents had a positive perception of quality improvement and 88% (n = 87) believed it to be an important aspect of clinical practice. Almost all of the respondents (n = 98) agreed that quality of care impacted morbidity and mortality in SLE patients. In the past 5 years, 80% (n = 79) of respondents had participated in quality improvement and 37% (n = 27) had reported their findings. There were no significant differences in demographics or practice characteristics in respondents who had participated in quality improvement vs. those who had not. For respondents who had not participated in quality improvement initiatives, common barriers identified were lack of time (60%, n = 12), uncertainty as how to get involved (50%, n = 10), limited institutional support or recognition (15%, n = 3), lack of interest (10%, n = 2), and projects not suitable as academic contributions (5%, n = 1).

Awareness, Use, and Perception of the SLE Quality Indicators

For awareness of the SLE Quality Indicators, 66% (n = 65) of respondents were familiar with the SLE Quality Indicators, 26% (n = 26) had heard of the Quality Indicators but were not familiar with the content, and 8% (n = 8) had never heard of the Quality Indicators. Of the respondents familiar with the SLE Quality Indicators, 18% (n = 12) used them in everyday practice, 40% (n = 26) used them occasionally, and 42% (n = 27) did not use them (Figure 1).

Overall, 54% (n = 52) of respondents thought that the SLE Quality Indicators would significantly improve quality of care, 38% (n = 36) minimally improve quality of care, and 8% (n = 8) no effect on quality of care. None of the respondents answered that the Quality Indicators would minimally or significantly worsen quality of care. A higher proportion of non-Caucasian respondents rated the SLE Quality Indicators favorably compared with Caucasian respondents (81% vs. 50%, p = 0.01). Favorably was defined as the SLE Quality Indicators would “significantly improve” quality of care. There were no other significant differences between respondents who rated the SLE Quality Indicators favorably vs. those who did not rate the SLE Quality Indicators favorably based on the recruitment strategy (endorsement from state societies vs. not) or other respondent or practice characteristics.

Most respondents (85%, n = 84) were willing to implement the SLE Quality Indicators into practice. When asked to rate how challenging it would be to implement the SLE Quality Indicators, on a scale of 0 being easy to 100 being impossible to implement, the mean response was 54 ± 21 . There was no significant difference in the mean score based on age of patients seen (p = 0.08). However, respondents who saw only pediatric patients reported a lower score, signifying easier implementation, compared to respondents who only saw adult patients (40 ± 14 vs. 54 ± 21 , p = 0.04). Respondents who were not rheumatology board certified had a trend toward reporting a lower response, indicating easier implementation, compared with the board-certified respondents (43 ± 16 vs. 55 ± 21 , p = 0.06). Differences in the mean response were not statistically significant based on the recruitment strategy or other respondent or practice characteristics.

Barriers to the SLE Quality Indicators

The barriers to implementation of the SLE Quality Indicators were lack of time (82%, n = 81), lack of systems support (66%, n = 65), expense (39%, n = 39), lack of interest (25%, n = 25), and lack of efficacy (20%, n = 20). Respondents who reported time as a barrier were more likely to be in academic vs. private practice (88% vs. 71%, p = 0.05) and were more likely to see more patients in a week (p = 0.01). A majority of the respondents, 79% (n = 77), thought that the electronic health record had a positive impact on implementing the SLE Quality Indicators. Almost all of the respondents, 93% (n = 92), said that required documentation of the SLE Quality Indicators for reimbursement would increase their use.

Discussion

In our web-based survey of Southeastern rheumatologists, most rheumatologists had a positive perception of quality improvement and believed it to be an important aspect of clinical practice. Similarly, most rheumatologists thought that the SLE Quality Indicators would improve quality of care; however, not all rheumatologists were aware of or using them, with only 18% reporting use in everyday practice. The most common barrier to involvement in quality improvement and implementation of the SLE Quality Indicators was time. These findings are important because low adherence rates to the SLE Quality Indicators may result in increased disease damage in SLE [5]. In addition, to the best of our knowledge, this study is the first to report rheumatologists' perception and use of the SLE Quality Indicators and to identify barriers to their implementation.

The importance of involvement in quality improvement and development of quality indicators is well recognized among the rheumatology community. Quality Indicators have been developed by the Arthritis Foundation Quality Indicator Project for gout, rheumatoid arthritis, and osteoarthritis [12–14]. Development of these measures has identified gaps in care, which is associated with negative effects on health-related quality of life [15–18]. Recognized gaps in care led to informed quality improvement projects that increased physician adherence to treat to target strategies and use of disease activity measures in rheumatoid arthritis [19].

Overall, the perception of quality improvement was favorable among 88% of rheumatologists. This is similar to a study that surveyed Canadian medical oncologists, where 97% of respondents agreed quality improvement was an important aspect of clinical practice [20]. A survey of urban and rural primary care physicians assessed attitudes toward participation in quality improvement activities, and the majority of providers (54% and 57%, respectively) agreed that it was important for physicians to participate in activities [21].

The most common reported barrier to involvement in quality improvement and implementation of the SLE Quality Indicators was time (60% and 82%, respectively). In contrast, in a survey of medical oncologists, the most common barrier was uncertainty about how to get involved at 45% with lack of time less commonly at 18% [20]. A recent systematic review in gastroenterology showed that receptive attitudes and perceptions were important factors in quality improvement implementation [22]. In our survey, participants rated both quality improvement and the SLE Quality Indicators favorably.

To address barriers, we assessed use of electronic health records and reimbursement to improve use of the SLE Quality Indicators. Most of the rheumatologists agreed that required documentation of the Quality Indicators for reimbursement would increase their use. Further, most respondents agreed that the EHR would have a positive impact on the implementation of the SLE Quality Indicators. We did not ask, however, if respondents were currently using EHRs or specific tools in the EHR that might help with implementing the SLE Quality Indicators. Future studies should assess rheumatologists' perceptions on the use of EHRs to document and track adherence to the SLE Quality Indicators. These studies could then help develop targeted EHR tools.

We recognize the limitations inherent to our study. First, we had a low response rate of 19%, which was lower than survey studies in oncology and primary care with response rates of 43% and 68%, respectively [20, 21]. Respondents that are in favor of, or have interest in quality improvement may be more likely to complete the survey resulting in an inflated positive perception of quality improvement and the SLE Quality Indicators. For example, we had a higher proportion of academic respondents compared to private practice. Academic respondents may be more familiar with the survey topic and have greater interest in research participation, which may have biased the response in a favorable way toward quality improvement and the SLE Quality Indicators. Our results, however, show similar percent favorable responses by academic and private practice respondents. In addition, younger respondents may be more likely to complete the web-based survey as they may be more comfortable with completing online surveys. Younger respondents may also have more

exposure to quality improvement initiatives in their ACGME training programs resulting in a more favorable perception to quality improvement. There was no statistically significant difference in perception of quality improvement or the SLE Quality Indicators based on the years since fellowship completion. However, only 45% of respondents who had completed fellowship more than 20 years ago rated the SLE Quality Indicators favorably. Lastly, the survey was directed toward a convenience sample of mainly Southeastern rheumatologists with a mixed recruitment strategy to increase sample size; however, demographic and practice characteristics of the respondents did not differ between these two strategies. In addition, responses to key questions on the perception of the SLE Quality Indicators were not significantly different between these two groups. Further, our results may not be generalizable to all rheumatologists in the U.S. as our sample of rheumatologists is from the Southeast.

In conclusion, rheumatologists have a positive perception of quality improvement and the SLE Quality Indicators. They agree that implementation of the SLE Quality Indicators results in improved quality of care in SLE, but they recognize several barriers to implementation. Since time was identified as a major barrier, tools that could be efficiently used in clinic practice are key to improving the implementation of the SLE Quality Indicators. Use of the EHR could be such a tool with future intervention studies needed to test if use of the EHR helps with documenting and tracking adherence to the SLE Quality Indicators.

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Fig. 1. Awareness and use of the SLE Quality Indicators among Rheumatologists
Percentage of respondents (n = 99) for each answer is shown.

Table 1

Characteristics of rheumatologist survey respondents.

Respondent Characteristics	
Mean age $\pm$ standard deviation	49 $\pm$ 14
Male (%)	55
Race/ethnicity (%)	
Caucasian	71
African American	4
Asian	12
Hispanic	2
Other	4
Prefer not to answer	7
Board Certified (%)	88
Years since fellowship completion (%)	
0–4 years ^a	33
5–9 years	12
10–19 years	14
> 20 years	41
Practice Characteristics (%)	
Academics	58
Private Practice	35
Combination	7
Industry	0
Age of Patients (%)	
Adult	71
Pediatric	8
Both	21
Number of patients seen in a week (%)	
< 10	2
10–29	28
30–49	21
> 50	49
Number of SLE patients seen in a week (%)	
< 5	14
5–9	41
10–19	35
20–29	5
> 30	5

^a0–4 years since fellowship completion includes “currently in” and “not yet completed” fellowship.