Best Practices in Managing Patients with Rheumatoid Arthritis

Geisinger Health System

Automated Display of Care Gaps and Capture of Physician Decision Making at the Clinic Visit
Organizational Profile

The vision of Abigail A. Geisinger, Geisinger Health System was established in 1915 in Danville, Pennsylvania. Over the last century, it has steadily grown from a 70-bed hospital to a large, integrated healthcare system. Today, Geisinger serves over 3 million residents in 45 counties across central, south-central, and northeastern Pennsylvania. Employing approximately 1,600 physicians—30,000 people altogether—it is composed of 12 hospital campuses and two research centers. The Rheumatology Department is comprised of 15 rheumatologists (13 full-time employees) in three primary clinics with nine outreach sites. To date, Geisinger has used the Epic EHR system-wide since 1997, and in rheumatology since 2001.

Project Summary

In addition to Epic, Geisinger Rheumatology has developed PACER (PAtient-Centric Electronic Redesign), a software program for real-time chronic disease management embedded into clinical care. PACER efficiently and effectively assembles information from a number of sources—including the patient (via a touchscreen questionnaire), EHRs, nurses, and physicians—reassembling it into a series of actionable views and new functions. PACER reliably captures MDHAQ, RAPID 3, and CDAI. Additionally, Geisinger Rheumatology has developed AIM FARTHER (Attribution, Integration, Measurement, Finances, And Reporting of THERapies), a novel population care model for over 2,300 patients with rheumatoid arthritis (RA). AIM FARTHER uses the data provided by PACER to drive a new strategic approach to care management. Significant improvement was noted in quality measures spanning disease activity, safety, and co-morbidity. Also, successful biologic de-escalation and a cost savings of approximately $1 million in a single calendar year was demonstrated.

Of note, RA quality measures evaluate performance, and thus do not by themselves result in improvement. The ideal system to improve quality would provide real-time, actionable data by embedding the measures in the clinical workflow. The project’s goal has been to optimize value-based care. To achieve this, electronically embedded quality and value measures were used to close care gaps in real time at the clinic visit. The action taken by the rheumatology care team to close these care gaps was reliably captured. Specifications for the quality-and-cost decision tool were designed, the tool was programmed and then tested to validate data. A performance report was then developed, with the care team trained on how to use the tool prior to implementation. After implementation data then was collected and utilized to report on, summarize results, and create the case study.

A quality measurement system was then designed that (1) integrated with the EHR; (2) provided real-time recognition and closure of care gaps; and (3) allowed easy recording of justifiable exceptions. Quality measures included RA on DMARD, RA with MDHAQ (functional assessment), RA with CDAI (disease activity measure), RA at low disease activity, tuberculosis (TB) testing (if on biologic), flu and pneumococcal vaccination, and a biologic de-escalation candidate. Color coding the measure status allowed easy recognition of an actionable item (green = measure met, red = measure not met/opportunity, gray = not applicable) (Figure 1).
Using the PACER software integrated with the EHR, the RA quality measures were programmed to appear in a specific “tasks” tab, which was user-specific. The nurse tasks tab, for example, showed the vaccination and TB testing measures, as well as a decision tool where the nurse could select her course of action (e.g., flu shot ordered) (Figure 2).

The rheumatologist tasks tab meanwhile showed all of the quality measures, the nurse’s course of action (in real time), and a decision tool for RA on DMARD and biologic de-escalation. An opportunity was defined as an RA patient NOT on DMARD, or a biologic de-escalation candidate (low disease activity for at least a year). The rheumatologist then used a drop-down list to easily document medical decision making for any opportunities. To reduce redundant work, each decision had an automatic “turn off” interval so that the decision tool did not appear at every visit (Figure 3).
After the tasks tabs were designed and programmed the measures were validated against the EHR. Using PDSA (Plan Do Study Act) improvement methodology, the quality measurement system was implemented and included rapid cycle learning, problem solving, and care team engagement. The decision tool was used 60% of the time over a four-month period (Figure 4).

Over this four-month period, 17 rheumatologists used the decision tool for 60% of the opportunities available (52% for RA on DMARD and 67% for biologic de-escalation) (Figure 5).
The reasoning behind biologic de-escalation was captured in the drop-down choices. During that four-month period for RA patients NOT on DMARD, use of the tool resulted in 39% of the decisions to discuss DMARD or add a DMARD (Figure 6).

For biologic de-escalation candidates, use of the tool resulted in 28% of the decisions to de-escalate biologic therapy (Figure 7).

**Lessons Learned and Ongoing Activities**

Geisinger’s quality measurement system successfully integrates with the EHR, provides real-time recognition of care gaps and cost reduction opportunities across a broad array of quality measures, records provider decisions, and was designed, tested, and implemented. The system was well-adopted and early data suggests that it has facilitated improving the percent of RA patients on DMARD, as well as biologic de-escalation in well-controlled RA patients. Repeated PDSA cycles are planned to further increase tool adoption. As we gain additional data, we will explore the system’s effect on improving the quality measures, and use the decision tool data to better understand modifiable barriers to improving these measures.

**Acronym Legend**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDAI</td>
<td>Clinical Disease Activity Index</td>
</tr>
<tr>
<td>DMARD</td>
<td>Disease-Modifying Anti-Rheumatic Drug</td>
</tr>
<tr>
<td>HAQ</td>
<td>Health Assessment Questionnaire</td>
</tr>
<tr>
<td>MDHAQ</td>
<td>Multi-Dimensional Health Assessment Questionnaire</td>
</tr>
<tr>
<td>PQRS</td>
<td>Physician Quality Reporting System</td>
</tr>
<tr>
<td>RAPID 3</td>
<td>Routine Assessment of Patient Index Data 3</td>
</tr>
<tr>
<td>SDAI</td>
<td>Simple Disease Activity Index</td>
</tr>
</tbody>
</table>

**References**


RA Team

**Eric D. Newman, MD**  
Director, Department of Rheumatology  
Chief, Specialty Integration and Innovation, Population Health  
Geisinger Health System

**Alicia Meadows, DO**  
Fellow, Department of Rheumatology  
Geisinger Health System

**Tarun Sharma, MD**  
Rheumatology  
Allegheny Health Network

**Jason Brown**  
Research Analyst III  
Biostatistics Core, Henry Hood Center for Health Research  
Geisinger Health System

**Michael Rowe**  
Web Application Development  
Perelman School of Medicine  
University of Pennsylvania

**Shelly Vezendy**  
Assistant Project Manager, Population Health  
Geisinger Health System

AMGA Foundation

One Prince Street  
Alexandria, VA 22314-3318  
amga.org/foundation

AbbVie provided financial support. © 2016 AMGA and AbbVie. All rights reserved.