Evaluating the Quality of Care for Rheumatoid Arthritis

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BACKGROUND

- The Arthritis Alliance of Canada (AAC)[1] recently developed six system-level performance measures for inflammatory arthritis.
- The measures capture timely access to rheumatology care and treatment.
- This project is part of a larger study to test the feasibility of reporting on the measures in different data sources (see also abstract THU0567 on JIA).

OBJECTIVES

To test the following AAC Performance Measures (PM) in Rheumatoid Arthritis (RA) using administrative health data for the province of British Columbia (BC), Canada.

- **PM 1**: The percentage of patients with new onset RA with at least one visit to a rheumatologist in the first year after diagnosis.
- **PM2**: The percentage of patients with RA under the care of a rheumatologist seen in follow-up at least once per year.
- **PM3**: The percentage of RA patients dispensed a disease-modifying anti-rheumatic drug (DMARD) during the measurement year.
- **PM4**: Time to DMARD therapy in new onset RA.

METHODS

All RA patients with visits between 01/01/1997 and 31/12/2009 in British Columbia (BC) Canada were identified using administrative health data and followed until December 2014. Incident cases first met RA criteria between these dates based on data from January 1990. **Case definition**: ≥2 physician billing claims for RA (ICD-9 code 714.X) ≥8 weeks but ≤ 5 years apart. **Exclusion criteria** applied over a 5-year period after the index date**:** ≥ 2 physician visits for another inflammatory arthritis (ICD-9 710.x, 446.x, 725.x, 696.0, 713.x, 720.x, 099.3) or if they saw a rheumatologist and RA was never confirmed. **Inclusion criteria.** For this study evaluating the quality of adult rheumatology care, we selected patients aged >18 years seen at least once by a rheumatologist over their follow-up.

Statistical methods. The following were calculated for each PM:

- **PM1**: The percentage of incident RA cases with at least one visit to a rheumatologist within one year of their first RA visit.
- **PM2**: The percentage of prevalent RA cases under rheumatology care with at least one visit per calendar year. Patients were considered under rheumatology care after having 2 rheumatologist visits and for the remainder of their follow-up.
- **PM3:** The percentage of prevalent RA patients dispensed a DMARD in the calendar year (including biologic agents and small molecule inhibitors), excluding RA patients with contraindications to DMARDs (pregnancy, HIV, malignancy).
- **PM4**: The time from RA onset (defined as first RA visit) to DMARD therapy was reported (in the calendar year of RA incidence), using median and 90th percentile wait times, as well as the proportion meeting the benchmark of 14 days[1].

RESULTS

Sample: The cohort included 18,976 incident and 29,639 prevalent cases of RA.

- **PM1**: The percentage of patients with RA seeing a rheumatologist within 1 year of RA onset increased over time from 68% in 1998 to 92% in 2009 (Table 2).
- **PM2**: The percentage of patients with RA under rheumatology care that were seen in yearly follow-up decreased overtime to 41% (Table 1). Further analysis revealed that this is due to having more people with longer follow-up in the latter years, and it is an effect of increasing loss to follow-up from rheumatologist care with increasing duration from first visit, rather than being a calendar effect (results not shown).
- **PM3**: The percentage of patients prescribed a DMARD was suboptimal over all years of follow-up (56% to 65%); however, the patients were not necessarily seen by a rheumatologist during the measurement year (Table 1).
- **PM4**: The median time to DMARD improved over time to 23 days from first RA visit and 1/3 of RA patients were prescribed a DMARD within the benchmark of 14 days (Table 2).

Table 1. Results of performance measures in prevalent RA cases

Year[1]	Number Prevalent RA cases	**PM2**: % of Patients under rheum care with yearly rheumatology visits	**PM3:** % Patients dispensed a DMARD
1998	5,727	100%	65%
1999	8,731	86%	62%
2000	10,649	71%	60%
2001	12,512	64%	59%
2002	14,145	60%	59%
2003	15,813	58%	59%
2004	17,472	57%	59%
2005	19,097	56%	60%
2006	20,612	54%	60%
2007	21,764	53%	60%
2008	22,721	50%	60%
2009	23,386	49%	61%
2010	23,122	46%	60%
2011	22,781	44%	56%
2012	22,370	42%	56%
2013	21,966	41%	57%
2014	21,412	41%	57%

[1]Measures based on a prevalent cohort reported until 2014

Table 2. Results of performance measures in incident RA cases

Year[1]	Number Incident RA cases	**PM1**: Patients seeing rheumatologist within 1 yr of first RA visit	**PM4**: Median (90th percentile) days to DMARD	**PM4**: % with DMARD within 14 days of first RA visit
1998	1,372	68%	44 (1,624)	23%
1999	1,383	72%	48 (1,638)	21%
2000	1,461	71%	49 (1,644)	21%
2001	1,508	73%	53.5 (1,521)	22%
2002	1,455	78%	41 (1,058)	26%
2003	1,445	77%	43 (1,115)	23%
2004	1,647	80%	31 (825)	27%
2005	1,614	82%	26 (579)	30%
2006	1,704	85%	23 (411)	31%
2007	1,430	83%	29 (399)	28%
2008	1,305	86%	26 (339)	29%
2009	921	92%	23 (188)	34%

[1]Measures based on an incident cohort reported until 2009 and reported in the calendar year of incidence.

REFERENCES

1. Barber CEH, et al. **Development of System-level Performance Measures for Evaluation of Models of Care for Inflammatory Arthritis in Canada**. J Rheumatol 2016;43:530-40.

CONCLUSIONS

- This is the first report of AAC PMs being operationalized and tested in an RA cohort using administrative data.
- For most measures there appeared to be an improvement over time with more patients being seen within 1 year of their first RA visit, a decline in days to DMARD therapy and a greater number reaching the 14-day benchmark for starting DMARDs.
- The percentage of patients dispensed a DMARD was suboptimal and did not change over time. Further work is necessary to understand why this gap persists. Potential explanations include non-compliance, remission, and not receiving care by a rheumatologist.
- The percentage of patients with yearly rheumatologist visits declined over time. This was a function of loss of follow-up from rheumatologist care with increasing duration, rather than a calendar year effect.

LIMITATIONS

- Identification of rheumatologists using administrative data may have been incomplete due to some rheumatologists billing under an internist fee code, leading to underreporting of PM1 & PM2.
- The measures were only reported in RA patients who were seen at some point in follow-up by a rheumatologist, to be consistent with the study objective of evaluating the quality of rheumatology care. Therefore the results may not be generalizable to all RA patients in the province, such as RA patients followed by family physicians, never seen by a rheumatologist.
- The use of exclusion criteria applied over a 5 year period to define RA reduced the ability to report on some of the measures in more recent years (e.g., PM1 & PM4, which require an incident cohort).

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