

Disease-Modifying Antirheumatic Drug Initiation Among Patients Newly Diagnosed With Rheumatoid Arthritis

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Rheumatoid arthritis (RA) is a systemic autoimmune disease characterized by inflammation of the joints and surrounding tissues. This inflammation leads to destruction of cartilage and bone in affected joints, which can result in substantial pain and disability.¹ Bone erosion has been shown to occur as early as 4 months after observation of the first joint symptoms.² Patients with RA suffer significant impairments in work performance, productivity, and overall quality of life.³ Effective treatment of RA symptoms with disease-modifying antirheumatic drugs (DMARDs) has been shown to increase productivity at work and in the home and to improve health-related quality of life.^{4,5}

Early diagnosis and treatment of RA is important to limit progression of the disease and improve clinical outcomes.⁶ With treatment, patients with early disease are more likely to achieve optimal outcomes, such as remission, than patients with long-standing disease.⁷ Importantly, early treatment can reduce long-term radiographic damage, which can be irreversible.^{6,8} The National Quality Forum (NQF) endorses a quality measure that most patients diagnosed with RA have at least 1 outpatient prescription for a DMARD within 3 months of diagnosis.⁹ Additionally, the 2015 American College of Rheumatology (ACR) guidelines support early initiation of DMARD therapy for all patients newly diagnosed with RA.¹⁰

In our prior analysis covering 2004 through 2008 using the Truven Health MarketScan Research Databases, only 63% of patients with newly diagnosed RA initiated a DMARD within 12 months of diagnosis.¹¹ The objectives of this study were to evaluate DMARD initiation rates for newly diagnosed patients with RA by year (2009-2012), US state, and prescription plan; determine the mean time to DMARD initiation; and explore predictors of DMARD initiation or noninitiation.

PATIENTS AND METHODS

Data Source

This study utilized data from 2 Truven Health MarketScan Research Databases: the Commercial Claims and Encounters Database and

ABSTRACT

OBJECTIVES: To determine the rate of timely disease-modifying antirheumatic drug (DMARD) initiation in patients newly diagnosed with rheumatoid arthritis (RA), as recommended per a quality measure endorsed by the National Quality Forum.

STUDY DESIGN: Retrospective analysis of claims data from the Truven Health MarketScan commercial and Medicare claims databases.

METHODS: Patients newly diagnosed with RA were identified in the claims databases. Outcomes included rate of nonbiologic or biologic DMARD initiation within 12 months of diagnosis; initiation by year (2009-2012), US state, and prescription drug plan; and time to initiation. Multivariate modeling was performed to identify factors associated with initiation or noninitiation.

RESULTS: Of 40,040 newly diagnosed patients, 55.5% initiated RA therapy within 12 months, including 21,154 (52.8%) initiating DMARD therapy and 1051 (2.6%) initiating biologic DMARD therapy. Rates were similar for years 2009 (53.3%), 2010 (55.7%), 2011 (56.3%), and 2012 (56.8%), but they varied widely by US state (range, 33.3%-88.0%) and prescription plan (range, 42.6%-63.5% across 8 largest plans). Mean (SD) time to initiation of any RA therapy was 39 (65) days. Predictors of initiation included point-of-service (odds ratio [OR], 1.18) and consumer-driven/high-deductible (OR, 1.19) plans, comorbid psoriasis (OR, 1.30) or diabetes (OR, 1.17), rheumatoid factor test (OR, 3.02), and diagnosis by a rheumatologist (OR, 3.17). Predictors of noninitiation included female sex (OR, 0.94), preferred provider organization plan (OR, 0.87), higher comorbidity score (OR, 0.94), select comorbidities (OR range, 0.65-0.92), and number of prescriptions for any cause (OR, 0.98).

CONCLUSIONS: Only slightly more than half of patients initiated RA therapy within 12 months of diagnosis in this commercially insured population.

Am J Manag Care. 2018;24(Spec Issue No. 8):SP279-SP285

TAKEAWAY POINTS

- ▶ Early initiation of therapy for rheumatoid arthritis (RA) is important to reduce or delay disease progression.
- ▶ In contrast to the National Quality Forum–endorsed measure and the American College of Rheumatology recommendation for early treatment of RA, this study of commercially insured patients found that only 55.5% of patients initiated disease-modifying antirheumatic drug therapy within 1 year of diagnosis.
- ▶ These results suggest a significant gap in clinical care for newly diagnosed patients with RA, and barriers to therapy initiation need to be identified and addressed.

the Medicare Supplemental and Coordination of Benefits Database. These databases represent more than 35 million patients annually from approximately 200 self-insured employers or commercial health plans across the United States. The databases include fully adjudicated medical and pharmacy claims, inpatient and outpatient diagnoses, and retail and mail order prescription records.

Study Design

This was a retrospective analysis of administrative claims for commercially insured individuals with RA who initiated or did not initiate DMARD therapy after the first RA diagnosis (index date). The preindex period was the 12 months ending the day before the index date. The follow-up period was the 12 months beginning on the index date.

Patient Eligibility

To be included in the analysis, patients had to have at least 1 inpatient or outpatient nondiagnostic claim for RA (*International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] code 714.xx*) between January 1, 2009, and January 1, 2013; have a second claim for RA within 120 days of the first claim with a more specific RA diagnosis (*ICD-9-CM code 714.0 or 714.2*); be 18 years or older; have continuous enrollment and pharmacy data availability for 12 months before and after index date; have no pharmacy claim or medical claim for a DMARD or biologic DMARD during the preindex period; and have no diagnosis of RA (*ICD-9-CM code 714.xx*) during the preindex period.

Outcomes

The percentage of patients initiating DMARD or biologic DMARD therapy was assessed. DMARDs included azathioprine, chloroquine, cyclosporine, cyclophosphamide, gold salts, hydroxychloroquine, leflunomide, methotrexate, minocycline, penicillamine, and sulfasalazine. Biologic DMARDs, administered both subcutaneously and intravenously, included abatacept, adalimumab, anakinra, certolizumab, etanercept, golimumab, infliximab, rituximab, tocilizumab, and tofacitinib. (Tofacitinib is a new nonbiologic DMARD that was analyzed with the biologic DMARDs because it is a second-line therapy and its cost is similar to that of the biologic

class of drugs.) Rates of DMARD or biologic DMARD initiation were also analyzed by study year (2009, 2010, 2011, and 2012), US state, and prescription drug carrier plan. Although all prescription drug carrier plans were included in the patient-level and state-level analyses, plans were required to have at least 25 newly diagnosed patients with RA to be included in the plan-level analysis. The time from RA diagnosis to initiation of DMARD or biologic therapy was also assessed. Demographic and

clinical characteristics were evaluated as possible predictors of DMARD initiation or noninitiation.

Statistical Considerations

Descriptive analyses included frequency with percentage and interquartile range (IQR) and mean values with SDs for categorical and continuous variables, respectively. Logistic regression models were used to identify indicators of DMARD therapy initiation and noninitiation within 1 year as the outcome predicted and patient demographic (age, gender, region, health plan type) and clinical (Deyo-Charlson Comorbidity Index [CCI] score, select comorbid conditions, oral corticosteroid use, nonsteroidal anti-inflammatory drug [NSAID] use, receipt of a rheumatoid factor [RF] test, diagnosing physician, number of prescriptions for any cause) characteristics at index or preindex as the explanatory effects.

Role of the Sponsor

The study sponsor played no role in the collection of data or in the analysis or interpretation of the data, nor did it have the right to approve or disapprove the publication of the finished manuscript.

RESULTS

Patients

A total of 40,040 patients met the eligibility criteria (**eAppendix Table** [eAppendix available at ajmc.com]). Of these, 22,205 patients initiated any RA therapy (21,154 initiated a DMARD, 1051 initiated a biologic DMARD) and 17,835 did not initiate any RA therapy. The mean (SD) age at index date was 58.6 (14.8) years, and most patients were women (72.5%) (**Table 1**). More RA therapy initiators (78.1%) than noninitiators (63.3%) were enrolled in a commercial health plan ($P < .001$) instead of Medicare. Noninitiators were older (mean [SD] age, 61.0 [15.7] years) than initiators (mean [SD] age, 56.6 [13.7] years); had a higher mean CCI score (mean [SD] score, 1.0 [1.6] vs 0.6 [1.2]); and had higher rates of infectious disease (19.8% vs 14.2%) and cardiac conditions (24.0% vs 14.4%) ($P < .001$ for all comparisons).

TABLE 1. Demographic and Clinical Characteristics at Index Date

	Patients With RA (N = 40,040)	Any RA Therapy Initiators (n = 22,205)	DMARD Initiators (n = 21,154)	Biologic DMARD Initiators (n = 1051)	RA Therapy Noninitiators (n = 17,835)
Age, years, mean (SD)	58.6 (14.8)	56.6 (13.7)	56.8 (13.7)	53.2 (13.7)	61.0 (15.7)
Female, n (%)	29,014 (72.5)	16,052 (72.3)	15,339 (72.5)	713 (67.8)	12,962 (72.7)
Geographic region, n (%)					
Northeast	7286 (18.2)	3782 (17.0)	3609 (17.1)	173 (16.5)	3504 (19.6)
North Central	10,781 (26.9)	5888 (26.5)	5671 (26.8)	217 (20.6)	4893 (27.4)
South	14,233 (35.5)	8265 (37.2)	7834 (37.0)	431 (41.0)	5968 (33.5)
West	7296 (18.2)	4021 (18.1)	3804 (18.0)	217 (20.6)	3275 (18.4)
Unknown	444 (1.1)	249 (1.1)	236 (1.1)	13 (1.2)	195 (1.1)
Index year, n (%)					
2009	10,193 (25.5)	5428 (24.4)	5137 (24.3)	291 (27.7)	4765 (26.7)
2010	10,496 (26.2)	5842 (26.3)	5563 (26.3)	279 (26.5)	4654 (26.1)
2011	10,465 (26.1)	5888 (26.5)	5615 (26.5)	273 (26.0)	4577 (25.7)
2012 ^a	8886 (22.2)	5047 (22.7)	4839 (22.9)	208 (19.8)	3839 (21.5)
Payer, n (%)					
Commercial	28,627 (71.5)	17,338 (78.1)	16,440 (77.7)	898 (85.4)	11,289 (63.3)
Medicare	11,413 (28.5)	4867 (21.9)	4714 (22.3)	153 (14.6)	6546 (36.7)
Health plan type, n (%)					
Comprehensive	6554 (16.4)	2925 (13.2)	2822 (13.3)	103 (9.8)	3629 (20.3)
Consumer-driven	1104 (2.8)	737 (3.3)	704 (3.3)	33 (3.1)	367 (2.1)
Exclusive provider	463 (1.2)	277 (1.2)	257 (1.2)	20 (1.9)	186 (1.0)
HMO	5583 (13.9)	3197 (14.4)	3053 (14.4)	144 (13.7)	2386 (13.4)
High-deductible	512 (1.3)	351 (1.6)	338 (1.6)	13 (1.2)	161 (0.9)
POS	2781 (6.9)	1788 (8.1)	1709 (8.1)	79 (7.5)	993 (5.6)
POS with capitation	161 (0.4)	110 (0.5)	103 (0.5)	7 (0.7)	51 (0.3)
Preferred provider	20,641 (51.6)	11,613 (52.3)	11,018 (52.1)	595 (56.6)	9028 (50.6)
Unknown	2241 (5.6)	1207 (5.4)	1150 (5.4)	57 (5.4)	1034 (5.8)
Provider type, n (%) ^b					
Rheumatologist	12,201 (30.5)	9489 (42.7)	9053 (42.8)	436 (41.5)	2712 (15.2)
Internist	7535 (18.8)	4083 (18.4)	3933 (18.6)	150 (14.3)	3452 (19.4)
Primary care physician	6927 (17.3)	2899 (13.1)	2797 (13.2)	102 (9.7)	4028 (22.6)
Other specialist	11,345 (28.3)	4946 (22.3)	4658 (22.0)	288 (27.4)	6399 (35.9)
Unknown	2032 (5.1)	788 (3.5)	713 (3.4)	75 (7.1)	1244 (7.0)
Deyo-Charlson Comorbidity Index score, mean (SD)	0.8 (1.4)	0.6 (1.2)	0.6 (1.2)	0.6 (1.2)	1.0 (1.6)
Select comorbid conditions, n (%)					
Cardiac conditions	7474 (18.7)	3195 (14.4)	3070 (14.5)	125 (11.9)	4279 (24.0)
Cerebrovascular disease	2351 (5.9)	876 (3.9)	849 (4.0)	27 (2.6)	1475 (8.3)
Diabetes	6060 (15.1)	2997 (13.5)	2862 (13.5)	135 (12.8)	3063 (17.2)
Dyslipidemia/other lipid metabolism conditions	10,761 (26.9)	5460 (24.6)	5260 (24.9)	200 (19.0)	5301 (29.7)

(continued)

ORIGINAL RESEARCH

TABLE 1. (Continued) Demographic and Clinical Characteristics at Index Date

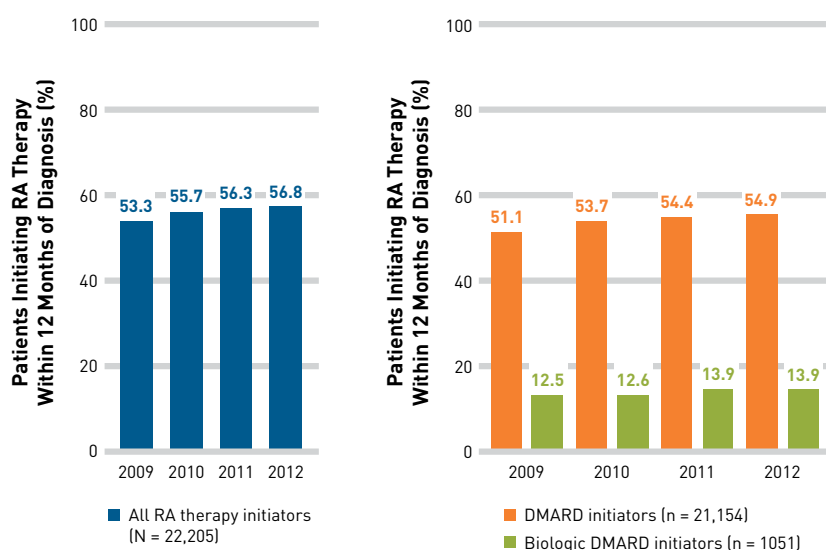
	Patients With RA (N = 40,040)	Any RA Therapy Initiators (n = 22,205)	DMARD Initiators (n = 21,154)	Biologic DMARD Initiators (n = 1051)	RA Therapy Noninitiators (n = 17,835)
Comorbid conditions with indication for DMARD, n (%)					
Ankylosing spondylitis	127 (0.3)	59 (0.3)	36 (0.2)	23 (2.2)	68 (0.4)
Crohn disease	163 (0.4)	69 (0.3)	48 (0.2)	21 (2.0)	94 (0.5)
Juvenile idiopathic arthritis	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Plaque psoriasis	484 (1.2)	292 (1.3)	242 (1.1)	50 (4.8)	192 (1.1)
Psoriatic arthritis	285 (0.7)	156 (0.7)	106 (0.5)	50 (4.8)	129 (0.7)
Comorbid conditions with contraindication for DMARD, n (%)					
Heart failure	1595 (4.0)	483 (2.2)	469 (2.2)	14 (1.3)	1112 (6.2)
Infectious disease	6675 (16.7)	3146 (14.2)	2984 (14.1)	162 (15.4)	3529 (19.8)
Liver disease	807 (2.0)	363 (1.6)	340 (1.6)	23 (2.2)	444 (2.5)
Lymphoma	168 (0.4)	88 (0.4)	69 (0.3)	19 (1.8)	80 (0.4)
Malignancy	2977 (7.4)	1403 (6.3)	1355 (6.4)	48 (4.6)	1574 (8.8)
Multiple sclerosis	173 (0.4)	72 (0.3)	69 (0.3)	3 (0.3)	101 (0.6)
Pregnancy	988 (2.5)	556 (2.5)	503 (2.4)	53 (5.0)	432 (2.4)
Renal insufficiency	1693 (4.2)	608 (2.7)	562 (2.7)	46 (4.4)	1085 (6.1)
Oral corticosteroid use, n (%)	13,832 (34.5)	9518 (42.9)	9131 (43.2)	387 (36.8)	4314 (24.2)
NSAID use, n (%)	17,962 (44.9)	11,909 (53.6)	11,518 (54.4)	391 (37.2)	6053 (33.9)

DMARD indicates disease-modifying antirheumatic drug; HMO, health maintenance organization; NSAID, nonsteroidal anti-inflammatory drug; POS, point-of-service; RA, rheumatoid arthritis.

^aPatients with an index date of January 1, 2013, were included in the 2012 calendar year.

^bProvider type was based on index claim.

FIGURE 1. Rates of RA Therapy Initiation by Year^a



DMARD indicates disease-modifying antirheumatic drug; RA, rheumatoid arthritis.

^aThe percentage of patients who initiated any RA therapy (blue bars) within 12 months of diagnosis during the years 2009, 2010, 2011, and 2012 is shown. The subset of initiators who initiated DMARD therapy (orange bars) or biologic DMARD therapy (green bars) is also shown. Patients with an index date of January 1, 2013, were included in the 2012 calendar year.

Rates of DMARD Initiation

DMARD initiation in all patients. Of the 40,040 newly diagnosed patients, only slightly more than half (55.5%) initiated RA therapy within 12 months of diagnosis; 52.8% initiated DMARD therapy and 2.6% initiated biologic DMARD therapy. Of the 22,205 patients who initiated RA therapy within 12 months, 19,249 (86.7%) initiated RA therapy within 90 days of diagnosis, including 18,526 patients (87.6%) who initiated DMARD therapy and 723 (68.8%) who initiated biologic DMARD therapy.

DMARD initiation by year of diagnosis. The percentage of newly diagnosed RA patients who initiated RA therapy within 12 months of diagnosis was similar for the years 2009 through 2012 (Figure 1).

DMARD initiation by US state. Initiation rates varied by US state (IQR, 54%-66%), with the highest rates observed in South Dakota (88.0%) and Minnesota (82.4%) and the lowest rates in Hawaii (33.3%) and Washington, DC (33.3%) (Figure 2). Initiation rates were similar across

regions, ranging from 52% in the Northeast to 58% in the South. For the 10 states with the greatest numbers of newly diagnosed patients (66% of study sample), initiation rates ranged from 44% to 61%.

DMARD initiation by drug carrier plan.

A total of 57 prescription drug carrier plans were included in the analysis. Of these, 1 plan had more than 10,000 initiators; 7 plans had at least 1000 and less than 10,000 initiators; 6 plans had at least 500 and less than 1000 initiators; 22 plans had at least 100 and less than 500 initiators; and 21 plans had at least 25 and less than 100 initiators. Initiation rates for the 8 largest plans, representing 75% of the study population, ranged from 42.6% to 63.5% (Table 2). Initiation rates for the 2 largest plans differed by 10 percentage points.

Time to DMARD Initiation

The mean (SD) time to RA therapy initiation was 39 (65) days for any RA therapy, 37 (63) days for DMARD initiation, and 78 (87) days for biologic DMARD initiation. Similar results were seen when the time to DMARD initiation was calculated from the first or second diagnosis.

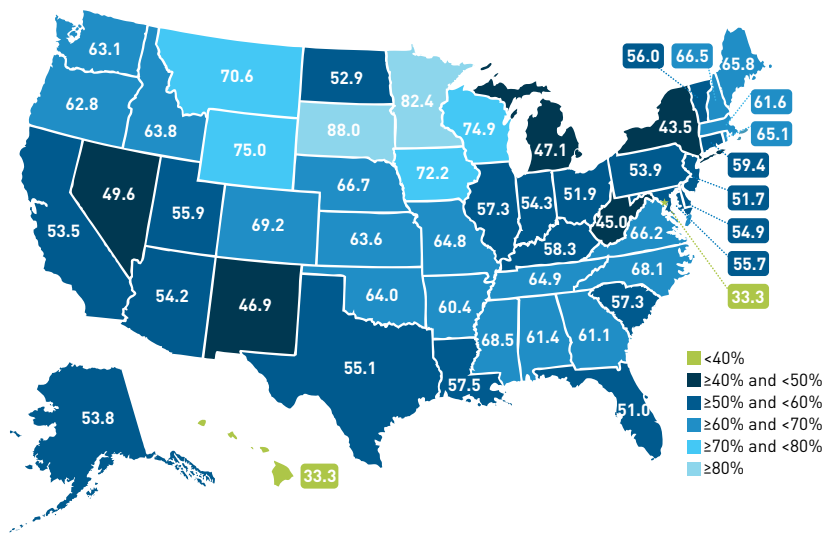
Predictors of DMARD Initiation and Noninitiation

Demographic predictors of RA therapy initiation included enrollment in a point-of-service, consumer-driven, or high-deductible health plan; and living in the Midwest or West regions (Figure 3). Clinical predictors of RA therapy initiation included comorbid psoriasis or diabetes, use of oral corticosteroids or NSAIDs at index, receipt of an RF test, and diagnosis by a rheumatologist. Demographic predictors of noninitiation included female sex and enrollment in a preferred provider organization or unknown/other health plan. Clinical predictors of noninitiation included a higher CCI score; comorbid heart failure, infectious disease, liver disease, multiple sclerosis, asthma, cardiac conditions, cerebrovascular disease, dyslipidemia, gastrointestinal disorders, hypertension, osteoarthritis, osteoporosis, or respiratory infection; pregnancy; and the number of prescription claims for any cause.

DISCUSSION

The NQF quality measure and ACR guidelines recommend that newly diagnosed patients with RA be treated with a DMARD.^{9,10} Despite

FIGURE 2. Rates of RA Therapy Initiation by US State^a



RA indicates rheumatoid arthritis.

^aThe percentage of patients who initiated any RA therapy within 12 months of diagnosis is shown for each state.

TABLE 2. Rates of RA Therapy Initiation in the 8 Largest Prescription Drug Carrier Plans

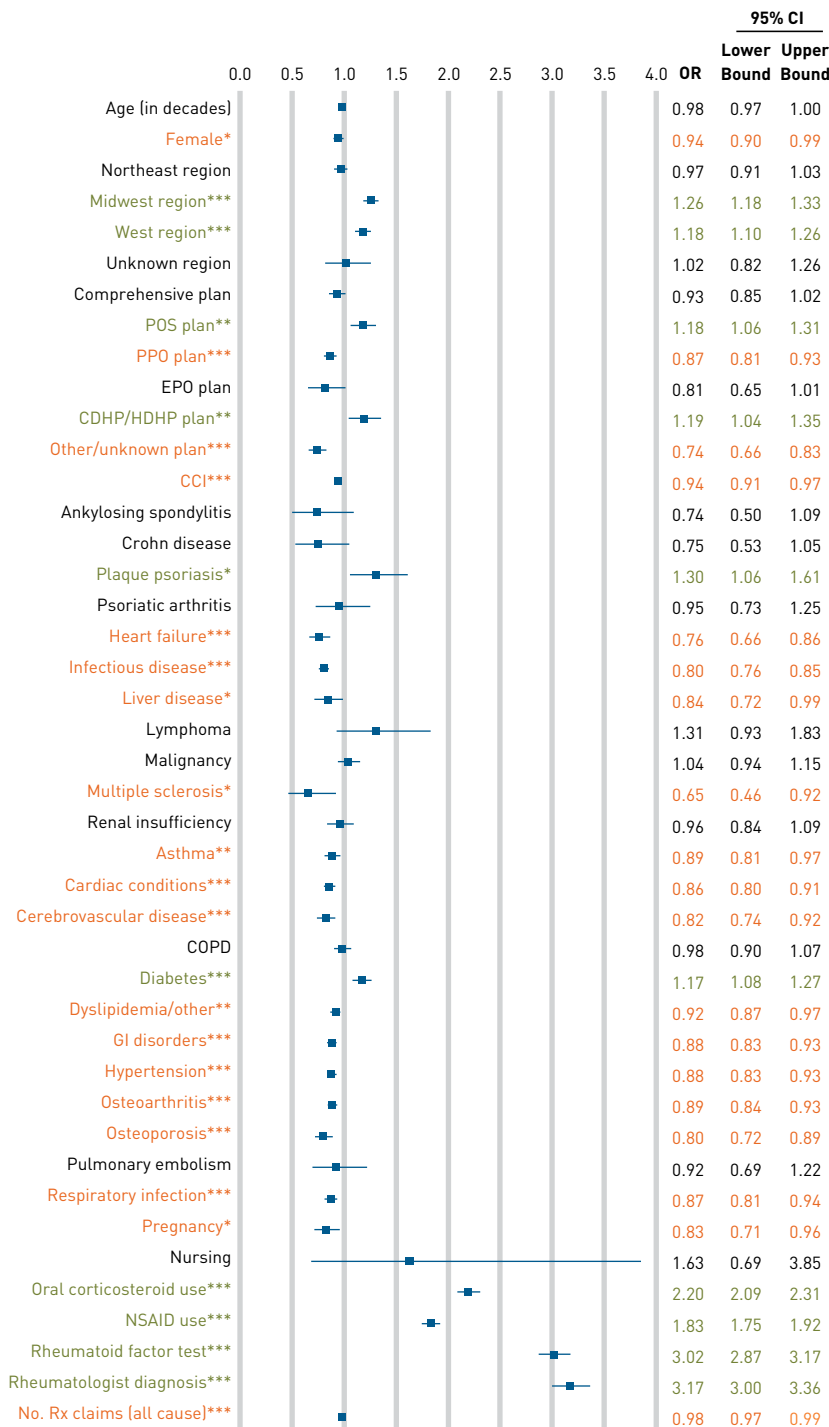
Plan	% of Total Study Population	Any RA Therapy Initiators n (%)	DMARD Initiators n (%)	Biologic DMARD Initiators n (%)
1	27.7	5943 (53.6)	5682 (95.6)	261 (4.4)
2	16.9	4290 (63.5)	4100 (95.6)	190 (4.4)
3	13.4	2774 (51.9)	2643 (95.3)	131 (4.7)
4	5.0	1142 (57.4)	1091 (95.5)	51 (4.5)
5	3.8	766 (50.8)	730 (95.3)	36 (4.7)
6	3.5	599 (42.6)	556 (92.8)	43 (7.2)
7	2.9	649 (55.6)	623 (96.0)	26 (4.0)
8	2.7	592 (54.8)	565 (95.4)	27 (4.6)

DMARD indicates disease-modifying antirheumatic drug; RA, rheumatoid arthritis.

these clinical recommendations, our study found that only 55.5% of patients initiated treatment within 1 year. Those patients who initiated any RA therapy within 1 year tended to initiate therapy within 3 months of diagnosis. Initiation rates were similar across the 4 years of the study, but they varied by US state and prescription drug carrier plan.

For providers and patients, the benefit of achieving this quality metric occurs primarily at the patient level, at which initiating a DMARD early may relieve a patient from disease progression and may reduce and/or delay many RA-related complications and impacts. In Medicare patients, this improvement in quality metrics may be associated with incentive payments for all provider types

FIGURE 3. Predictors of RA Therapy Initiation or Noninitiation*



CCI indicates Deyo-Charlson Comorbidity Index; CDHP, consumer-driven health plan; COPD, chronic obstructive pulmonary disease; EPO, exclusive provider organization; GI, gastrointestinal; HDHP, high-deductible health plan; NSAID, nonsteroidal anti-inflammatory drug; OR, odds ratio; POS, point-of-service; PPO, preferred provider organization; RA, rheumatoid arthritis; Rx, prescription.
 * $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$.
 *ORs with 95% CIs are shown for demographic and clinical variables at index date that predict RA therapy initiation (green text) or noninitiation (orange text).

as provisioned in the Affordable Care Act.^{12,13} For payers, achieving improvement in quality metrics may lead to better ratings of health plans with benefits to patients of all ages. Additionally, patients who are treated early have substantially lower total costs over time compared with patients who initiate therapy after the first year, which provides economic benefits to the US healthcare system.¹⁴ Clinical improvements with early treatment can be expected to also prevent, delay, or reduce the impact of RA on patients' social and physical functioning, which can be substantial.¹⁵

In a prior analysis with a similar study design using the same databases and data from 2004 through 2008, the rate of RA therapy initiation was higher (63%) than the rate seen in the current analysis.¹¹ Instead of trending toward full adherence to quality metrics, the percentage has decreased from 2004-2008 to 2009-2012 (ie, achievement of quality metrics has not improved over time). This could be due to lack of awareness of quality metrics and clinical guidelines or potentially a lack of trustworthiness in these metrics. Increased communication to payers and providers about the existing metrics and continued evidence development of the impact of achieving quality metrics on benefiting patient outcomes may be needed. Some predictors of initiation (diagnosis by a rheumatologist, receipt of an RF test, oral corticosteroid or NSAID use at index) and noninitiation (female sex, higher CCI score) were observed in the prior study and the current study. Some clinical predictors of noninitiation were expected (heart failure, infectious disease, liver disease, and multiple sclerosis), as these conditions are contraindicated for DMARD use.

Limitations

The use of claims databases for this type of analysis has limitations. The purpose of claims databases is to facilitate payment. The MarketScan databases used for this analysis only include data provided by large US employers; therefore, these results may not be generalizable to the whole US population. Patients covered by health plans offered by small employers were underrepresented, and uninsured patients and those covered by military health plans were not

included in the database. Race, socioeconomic status, and nonprescription medication use were unavailable and could be potential predictors of access to care or treatment initiation. Disease severity was not measured in the claims databases; therefore, the impact of disease severity on DMARD initiation rates could not be determined from this study. Diagnoses on claims may have been coded incorrectly, not coded at all (thereby potentially underestimating the size of the patient population and utilization rates), or overcoded (potentially overestimating the size of the patient population by inclusion of patients without a confirmed RA diagnosis); the scope of this limitation cannot be determined. Patients with undiagnosed RA could not be identified. Drug use was based on pharmacy claims, which only indicate the prescriptions being filled; patients may or may not have taken the medications as prescribed.

CONCLUSIONS

In these patients with commercial and Medicare supplemental claims, DMARD initiation rates varied substantially by both state and health plan, with only 55.5% of the patients with RA initiating these treatments within 12 months of diagnosis. This observation has significant implications for patient outcomes and poses a challenge to healthcare providers to meet quality-of-care guidelines for RA. Predictors of starting RA therapy can provide insights into reasons for barriers to initiating RA therapy. ■

Acknowledgments

The authors thank Julie Wang of Amgen Inc and Julia R. Gage on behalf of Amgen Inc for assistance with writing the manuscript.

Author Affiliations: Truven Health Analytics, an IBM Company (MB, BHJ), Cambridge, MA; Amgen Inc (NS, DJH, DT, BSS), Thousand Oaks, CA.

Source of Funding: This study was sponsored by Immunex, a wholly owned subsidiary of Amgen Inc, and by Wyeth.

Author Disclosures: Dr Bonafede and Ms Johnson are employees of Truven Health Analytics, a consulting firm that won a contract from Amgen to conduct this study. Dr Shah, Dr Harrison, and Dr Stolshek are employed by and own stock in Amgen, which manufactures and markets Enbrel, a product in the

RA drug class. Dr Tang is a past employee of Amgen, a current employee of Novartis, and a shareholder of Amgen and Novartis.

Authorship Information: Concept and design (MB, BHJ, NS, DJH); acquisition of data (MB, BHJ); analysis and interpretation of data (MB, BHJ, NS, DJH, DT, BSS); drafting of the manuscript (MB, NS, BSS); critical revision of the manuscript for important intellectual content (MB, BHJ, NS, DJH, DT, BSS); statistical analysis (MB, BHJ); obtaining funding (DJH); and administrative, technical, or logistic support (DT, BSS).

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eAppendix Table. Patient Attrition

	Patients n (%)
Patients with ≥ 1 claim for RA between January 1, 2009, and January 1, 2013	814,295 (100)
Patients with a second claim for RA within 120 days of first claim	327,483 (40.2)
Aged ≥ 18 years	325,531 (40.0)
Continuous enrollment and pharmacy data available for 12 months before index date	131,329 (16.1)
Continuous enrollment and pharmacy data available for 12 months after index date	99,549 (12.2)
No claim for DMARD or biologic DMARD in pre-index period	45,002 (5.5)
No diagnosis of RA during pre-index period	40,040 (4.9)

DMARD indicates disease-modifying antirheumatic drug; RA, rheumatoid arthritis.