

## Abstract

**Objectives:** Rheumatoid arthritis (RA) is a chronic inflammatory disorder that affects the lining of joints, causing painful swelling that can result in bone erosion and joint deformity. Patient adherence to medications can help reduce or lessen inflammation; however, non-adherence and frequent switching are recognized problems in patients with RA. The objectives of this study are to better understand patients' reason(s) for being non-adherent and/or switching and physicians' reasons for recommending a switch.

**Methods:** We extracted 300 records for RA patients from a unique database of physician-patient interactions (RealHealthData). Using Atlas.ti, we analyzed these records to analyze trends for medication switches and/or non-adherence, i.e., when, why and how patients stopped or switched their medication. In addition, we analyzed physicians' noted reasons for switching.

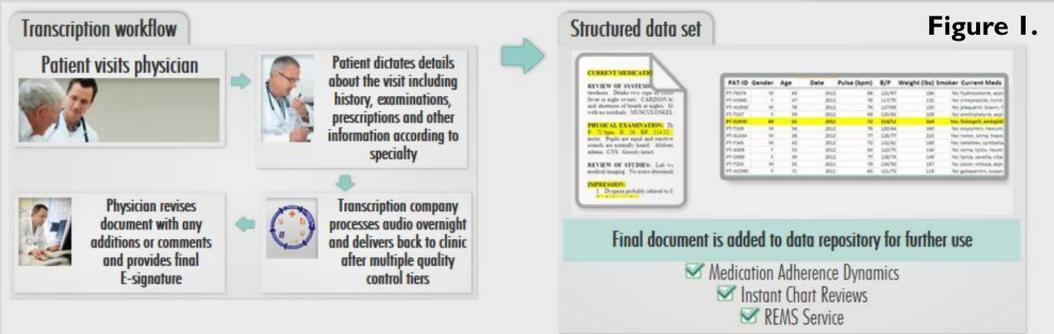
**Results:** On average, patients were 53 years old ( $\pm 10$ ). Patients' functional disability was similar to the general RA population, with a noted variability of swelling and joint pain. The medications prescribed to the patients included: methotrexate (22%), Orenicia (18%), Remicade (14%), Plaquenil (14%), Humira (13%), Enbrel (8%), Acterna (6%) and CellCept (5%). Patients' reported reasons for switching and/or non-adherence included: increased pain/swelling (34%), feeling the medication is not working and/or continual progression of symptoms (35%) and adverse reaction to medication such as itching (11%) and GI complications (11%). Of the physicians who recommended switching, reasons for switching their patients' medications included potential toxicities associated with drugs (46%) and observed disease progression (34%).

**Conclusions:** It is critical to better understand patients' and physicians' reasons for switching medication for chronic disease like RA. The more we know about reasons for behavior, the more we can actively plan and organize research, development and outreach that is patient-centric and clinically meaningful. Our results demonstrate that using physician-patient interaction data can add tremendous value to outcomes researchers and healthcare decision makers.

## Background

High rates of non-adherence or switching of medications for patients diagnosed with Rheumatoid Arthritis is not uncommon.<sup>1,2</sup> "Switching among biologic therapies is common practice in patients with rheumatoid arthritis who have an inadequate response or intolerable adverse events."<sup>2</sup> Observational studies indicate that some patients are non-adherent or switch medications due to toxicity and tolerability; however, given the changing healthcare environment, especially in the United States, it's not just the effectiveness of the drug but also the cost of the medications that may be an inhibiting factor as well.<sup>3,4</sup>

The ultimate goals in managing Rheumatoid Arthritis (RA) are preventing or controlling joint damage. A large part of controlling joint damage is finding and staying on appropriate medication; therefore, the objective of this study was to examine when, why and how patients stopped or switched their medication. In addition, we analyzed physicians' noted reasons for switching.



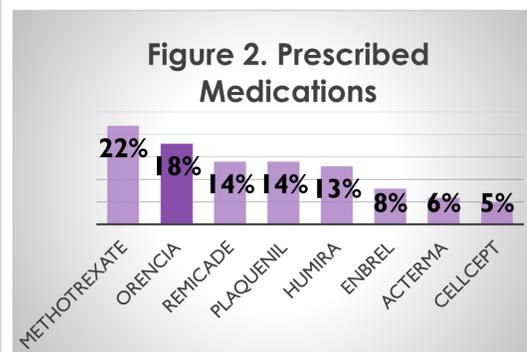
## Methods

We extracted 300 patient records that were identified for people diagnosed with RA from a unique database of physician-patient interactions: RealHealthData (<http://www.realhealthdata.com/>). RealHealthData works with medical transcription companies across the country to build a database of detailed narrative medical records, providing a unique perspective on patient conditions and physician interaction. (Figure 1). In order to be included in the database, patients needed to be at least 18 years of age, diagnosed with Rheumatoid Arthritis and had an office visit with at least one physician in the past 12 months.

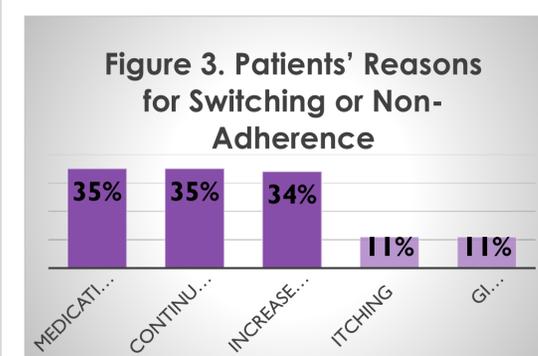
Using Atlas.ti and Excel, we analyzed these patient records to evaluate how often the recommended assessments of disease activity was documented by physicians during office visits.

## Results

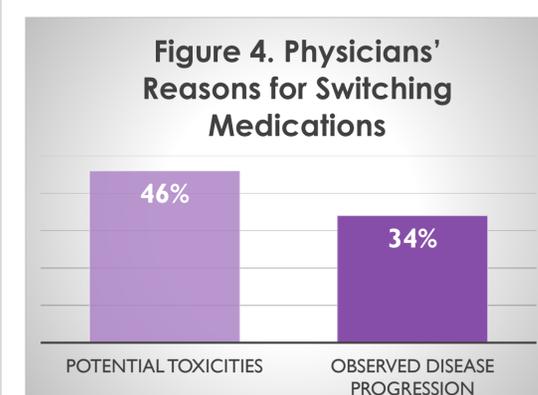
On average, patients were 59 years old and Figure 2 presents the breakdown of medications prescribed.



Patients' reported reasons for switching and/or non-adherence included: increased pain/swelling (34%), feeling the medication is not working and/or continual progression of symptoms (35%) and adverse reaction to medication such as itching (11%) and GI complications (11%) (Figure 3).



Of the physicians who recommended switching, reasons for switching their patients' medications included potential toxicities associated with drugs (46%) and observed disease progression (34%) (Figure 4).



## Direct Quotes

A unique feature of the data from RealHealthData is the ability to catch a glimpse of the physician-patient interaction the same day it happens – without having to survey the patients or physicians. Data is recorded as it happens without having to be concerned about recall or bias. In this section, we present excerpts from the notes so you have a better understanding of the narrative provided in the medical records.

*“We tried him on Humira for more than a year and did not work so switched him over to Remicade infusions and he took them for also a year with initial good response but then they were not helping anymore. We tried adding sulfasalazine and it only helped a little bit initially but he was doing poorly 4 months ago so we decided to switch him over to Orenicia infusions and he has been on that since then.”*

*“She was diagnosed with it more than a year ago and was treated with a combination of methotrexate and Plaquenil for about 10 months without much response. She improved with Remicade infusions but had a severe reaction on the fourth infusion so we have to switch her over to Orenicia about 3 months ago. She was feeling better on her last visit about a month ago as she was getting her fourth Orenicia infusion and doing well but she returns for her fifth infusion complaining of significant pain in the right ankle and left knee and left hip.”*

*“She has made the switch from Enbrel to Humira. She has had 4 doses of her Humira and has started to feel much better. Her energy level has increased. She has had no injection site reactions, rashes, fevers, or infections.”*

## Conclusions

It is critical to better understand patients' and physicians' reasons for switching medication for chronic disease like RA. The more we know about reasons for behavior, the more we can actively plan and organize research, development and outreach that is patient-centric and clinically meaningful. Our results demonstrate that using physician-patient interaction data can add tremendous value to outcomes researchers and healthcare decision makers.

## References

- Oei et al. *Clin Exp Rheumatol*. 2009 Nov-Dec;27(6):926-34.
- Reynolds et al., *Expert Rev Pharmacoeconomics Outcomes Res*. 2012;12(3):319-333.
- Kievit W, Adang EM, Fransen J et al. The effectiveness and medication costs of three anti-tumour necrosis factor alpha agents in the treatment of rheumatoid arthritis from prospective clinical practice data. *Ann. Rheum. Dis*. 67(9), 1229–1234 (2008).
- Marchesoni A, Zaccara E, Gorla R et al. TNF-alpha antagonist survival rate in a cohort of rheumatoid arthritis patients observed under conditions of standard clinical practice. *Ann. NY Acad. Sci*. 1173, 837–846 (2009).

## ACKNOWLEDGEMENTS

This was a collaborative effort between Strategic Market Insight and RealHealthData.