

***RFP CV Risk in RA 7-25-12 Designing an Electronic Medical Record-based  
Clinical Decision Support Tool to Improve CVD Screening in Rheumatoid  
Arthritis Patients***

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## **ABSTRACT**

**Objective:** Although cardiovascular disease (CVD) is the leading cause of death in rheumatoid arthritis (RA), CVD risks are not being assessed frequently and systematically. We implemented an electronic reminder and decision support tool, and assessed the effects on CVD risk screening by rheumatologists and primary care providers.

**Methods:** The electronic reminder was implemented in December 2013 and included the most recent values and target ranges for body mass index (BMI), blood pressure (BP) and lipid profiles. It was displayed for all patients with the ICD9 code for RA (714.0). Lipid screening rates, changes in BP and BMI were compared pre- and post-implementation. Factors associated with lipid screening post-implementations were assessed using multivariate logistic regression.

**Results:** A total of 138 and 112 RA patients were seen in the outpatient clinics pre- and post-implementation, respectively. The demographic characteristics were similar in the pre- and post-implementation groups. Post-implementation, 91% were female, 21% were Black, and 25% were Hispanic. Lipid screening rates was 50% pre-implementation and 46% post-implementation ( $p=0.58$ ). There were no significant improvements in BP or obesity rates post-implementation. Factors associated with the higher odds of lipid screening included older age and history of diabetes.

**Conclusion:** Implementing an EMR-reminder did not improve CVD screening. Physicians may be unaware that the risk of CVD events in RA is comparable to that of patients with diabetes mellitus, and to non-RA individuals who are up to 10 years older. Future research is needed to address barriers to CVD screening, and to educate patients and providers.

**Key Words:** Cardiovascular, Risk Assessment, Rheumatoid Arthritis, Decision support

Below is the Decision Support Tool that was developed to aid physicians for Cardiovascular Risk Screening that was fully implemented in December 2013.

**Cardiovascular risk screening:** V1.3

☐ Lab values reviewed.

Total Cholesterol:	<input type="text" value="134 (10/03/2013 7:51:00 AM)"/>	TC goal <=200mg/dl
LDL:	<input type="text" value="79 (10/03/2013 7:51:00 AM)"/>	LD goal <=100mg/dl
HDL:	<input type="text" value="31 (10/03/2013 7:51:00 AM)"/>	HDL goal >=40mg/dl for men, 50mg/dl for women
Triglycerides:	<input type="text" value="118 (10/03/2013 7:51:00 AM)"/>	TC goal <=150mg/dl
BP:	<input type="text" value="131"/> / <input type="text" value="82"/> <input type="text" value="138/81 03/27/2014"/>	<b>BP goal 140/80</b>
BMI:	<input type="text" value="29.39"/> <input type="text" value="30.49 (03/27/2014 9:48:14 AM)"/>	BMI <=26 and <30 is overweight, >=30 is obese
Smoking status:	<input type="text" value="Never smoked (03/05/2014 9:34:52 AM)"/>	
Framingham risk:	<input type="text" value="11 % (10/03/2013 1:53:48 PM)"/>	<b>Framingham calculator</b>

(% risk of developing heart disease within 10 years): (or to say info missing, can't calculate)

☐ Is disease duration > 10 years, or aggressive disease , or elevated ESR/CRP?

**Recalculate:**

### Poster Presentations and Manuscript Submission

- Dr. Anna Broder presented a poster presentation at the Annual European Congress of Rheumatology (EULAR) in Paris, France on June 14, 2014.
- Dr. Anna Broder presented an Abstract Presentation at the American College of Rheumatology on November 9, 2015.
- The Initial submission of the manuscript to the Journal of Arthritis Care and Research has been submitted to Pfizer. The deadline for the revised manuscript, requiring additional research and analysis, is due to the Editorial Board by May 30, 2016. Once accepted for publication, a copy of the manuscript will be submitted to Pfizer.

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