Figure 1: Patient view of RheumApp demonstrating patient-reported outcome (PRO) questionnaire, results graphic, and longitudinal record of PRO data

Figure 2: Clinician view of RheumApp data within the electronic health record, demonstrating PRO data over time

RheumApp: Integrating Patient-Reported Outcomes into Routine Care

Daniel Solomon, MD

Matthew H. Liang Distinguished Chair in Arthritis and Population Health, Brigham and Women's Hospital; Professor of Medicine, Harvard Medical School

dsolomon@bwh.harvard.edu

Patient-reported outcomes (PROS) recorded between outpatient visits allow outpatient care to be delivered more efficiently: delaying unnecessary visits and accelerating visits when needed. Improving visit efficiency is critical for sub-specialty care with limited capacity and accessibility. Rheumatology has a well-known demand-supply mismatch.

Over the last six years, we have developed and refined a mobile health application, RheumApp. It is simple for patients to use (Figure 1) and integrated within the EHR. In multiple pilot studies at Brigham and Women's Hospital involving over 250 patients, patient adherence is consistently 60-70%, and 83% of patients would suggest the app to other patients.

RheumApp integrates the PRO data into the clinical workflow (Figure 2). The app helps clinicians use the data by applying evidence-based rules to determine when an early visit is warranted (PROs suggesting worsening symptoms) or when a visit should be postponed (stable symptoms). In one pilot study involving 11 rheumatologists, over 75% of rheumatologists found the app useful.

Seed funding through an MGB Ignite award has enabled critical steps toward the commercialization of RheumApp. Large community rheumatology practices have reviewed RheumApp and appreciate its potential benefits for patient care, including remote therapeutic monitoring and dynamic re-scheduling to free up capacity and thus reduce wait times for new consultations. RheumApp could also help practices earn quality incentives and facilitate participation in value-based care.