



Development and Usability Testing of ANSWER-2: A Web-Based Decision Aid for Patients with Rheumatoid Arthritis Considering Biologic Therapy

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Background

- Patient decision aids are designed to help individuals choose between treatment options by presenting information on potential benefits and harms and clarifying preferences relevant to the options.
- We developed an interactive web-based decision aid, ANSWER-2 for patients with rheumatoid arthritis (RA) who are starting or switching biologic therapy.

Objective

The current study aims to test the usability of ANSWER-2.

Methods

- Developed using the International Patient Decision Aid Standards
- Contains 1) video clips featuring a rheumatologist discussing treatment options for RA and real patients discussing their preferences to different biologics 2) a module to clarify patients' treatment preferences and 3) information of biologics presented in an order based on the patient's personal preference
- **Recruitment and Eligibility:**
 - Patients with RA were recruited from rheumatologist clinics in Vancouver B.C.
 - Eligible if currently using biologics or recommended to start
 - Recruitment and testing continued at Arthritis Research Canada (ARC) location until no new navigational issues were found
- Concurrent Think-Aloud method was used during sessions
- Conducted content analysis of the transcripts to identify major themes of the user experience
- Participants completed the System Usability Scale (SUS). The scores were used to quantify the overall usability of the decision aid (range=0-100; higher=more user friendly).

Partner Organizations

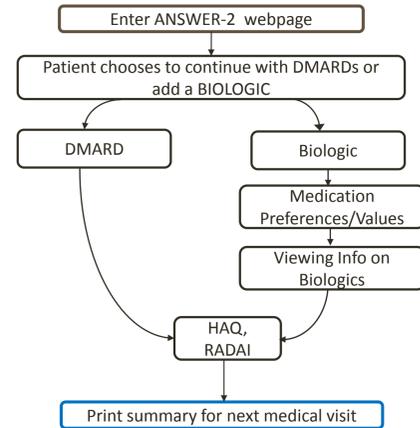


Figure 1: User Path

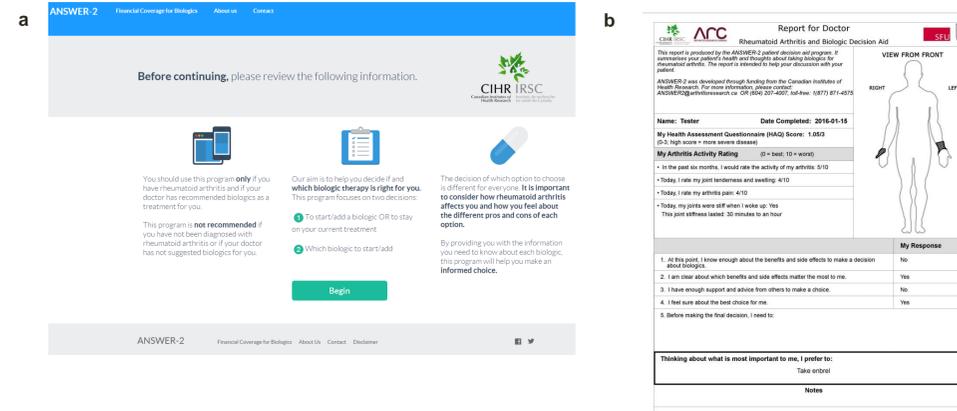


Figure 2: a) Home Page b) Report summary with selected responses about their decision as well as biologic preference they can take to their next appointment

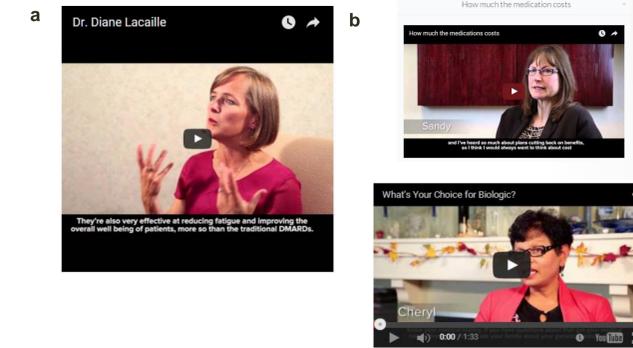


Figure 3-Video Modules a) Rheumatologist explaining differences between biologics and DMARDs; b) Patient videos about experiences with biologics

Results

Overall, participants were satisfied with the layout of ANSWER-2 and accessing the embedded videos.

Sample Characteristics (n = 7)	
Female	6
Age	
50-64	5
65 or older	1
35-49	1
Education (2 year College or Lower)	7
Disease Duration [median (IQR)]	5.3 years (IQR 2.5-4)
Internet Use; days [mean (SD)]	2.5 h/day (SD=2.1)
Time to complete ANSWER-2 [mean (SD)]	35 minutes (SD=10)
System Usability Scale score, [mean (SD)]	83.2 (SD=15.3)

An average SUS score of > 80 was observed, suggesting good overall usability (Bangor et al., 2009, *Journal of Usability Studies*, Vol 4, Issue 3., pp 114-123)

Issue 1: Navigational Control (i.e., navigating interactive biologics table, from page to page, using sliders)

".. I found the video really user-friendly." P2006 on navigating embedded videos
".. I always thought the two [scales on sliders] were slightly on the same spot." P2006 on being confused how to use sliders to rate importance of medication preferences from 1-10

Solution: Added Instructional Video for Navigating Medication Preferences Page

"..." the scroll buttons work. Nice and easy chart, definitely user-friendly." P2006 on biologics chart
".. Okay, like I don't even know how that got in there, so let's backspace, get rid of that... I'd have to go back and look at all the different ones that the doctor recommended. you know.." P2001 on scrolling through a table showing biologic options

Solution: Added additional scroll features for biologic option table

Issue 2: Information clarity: visual representations and tabulation of numerical information on the benefits and risks of biologics

".. once you know what the first one means, you can understand them all. ..." P 2001 on comparing data about different biologics
".. Yeah, once you explained what that meant, yeah, then I understood, it just, this isn't, doesn't come across very clear" P2001 on numerical information about benefits/side effects of DMARDs and biologics

"... that's actually the same for those two. They're all the same...Serious side effects, 128 per 1000 serious infections, 26 per 1000 total side effects, whoa, that's high, side effects"...P2002 on comparing and interpreting numerical information on side effects and benefits

".. what are the Xs as opposed to the crosses? These, are these the, this is what is in the video and this is what isn't discussed?" P2006 on check marks and 'X' icons representing benefits and side effects respectively

Solution: Changed visual representation of statistics for benefits and side effects by adding emoticons to clarify statistical information

Conclusion

- The ANSWER-2 prototype was user-friendly based on a SUS Score > 80
- Findings from participant interviews, however, revealed issues were addressed to improve navigational control and information clarity
- A Proof-of-Concept Randomized Control Trial is underway to test how well ANSWER-2 helps patients with RA to decide on starting or switching biologics

