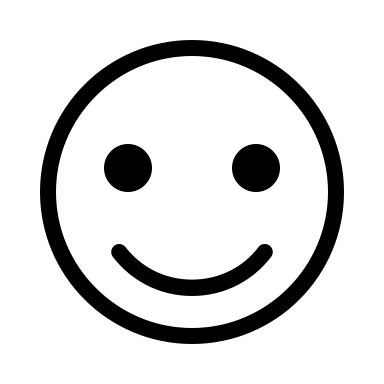
User Interface Idea - Researcher Version



Polarity Filter



Platform Filter



Demographic Filter Age Gender Region Disease

50+ M any any

Aspirin



User Interface Idea - Patient Version

A picture containing wheel

Description automatically generated

John Doe

Browse by Drug

Add to my watchlist

Aspirin

Males of age 50 and above think aspirin is…

(hover to view source sentences)

+: cheap

+: easily available

+: effective

+: safe

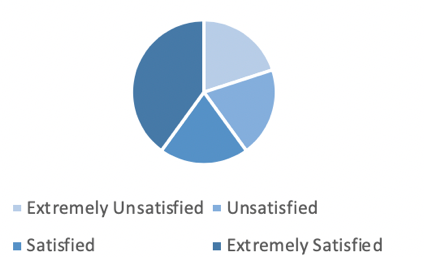
-: many side-effects

-: tastes bad

-: not reimbursed by insurance

-: ineffective

Aspirin, or acetylsalicylic acid (ASA), is commonly used as a pain reliever for minor aches and pains and to reduce fever.



Browse by Patient Groups

Explore Preference

A screenshot of a cell phone

Description automatically generated

A screenshot of a cell phone

Description automatically generated

My Watchlist

Timeline Overview

**. . . . .**

Explore Top-voted Posts

Naproxen

**Relevant Posts**

**. . . . .**

… I think aspirin is great… It is cheap …



… I am happy with aspirin’s effectiveness …

… I don’t like aspirin … It gives me headaches …



… aspirin is not reimbursed by my insurer …



# Health Economics Query Requirements

1) Sentences that contain at least two different aspects that can be linked to a specific drug, along with the aspects, associated opinions/polarities, forum ID, post ID, timestamp, and user demographics/characteristics if available. How to know if an aspect is linked to a specific drug?

2) Sentiment for DrugA associated with mentions by female patients over age 55 (presumably this would return a table with each row being an aspect-opinion dyad extracted from the text, right?), along with timestamp, forum ID, and user demographics/characteristics if available.

3) Volume of posts with at least one mention of DrugB over time in ForumX, independently of whether the drug or specific reference was extracted as an aspect by ABSApp Need alias for DrugB. Compare with other drugs?

4) RA forum users who mentioned at least one drug that was extracted as an aspect by ABSApp in at least one of their posts, along with a list of all the drugs each user mentioned and **associated sentiments** (if available). Should each sentiment for drugs be displayed? Or just user’s average overall sentiment?

I should note that the queries above are mostly from the perspective of trying to generate datasets that we could use to explore the potential of this data from a health economics perspective. The type of query would probably be different assuming a use case like that underlying Charles' UI sketch (which is very cool and I'll provide feedback on tomorrow), for which there would be more data processing (taking means, etc...) within the query itself.

All Code for generating SQL statements for populating the database: <http://bit.ly/2V4RXWV>

Parsing Reddit Flairs in r/MultipleSclerosis

A screenshot of a cell phone

Description automatically generatedA screenshot of text

Description automatically generatedA screenshot of a cell phone

Description automatically generated

Flair Example

A screenshot of a cell phone

Description automatically generated flair

parse

result

Age = 0 if unknown

Profile Example

HealthUnlocked Profile (most profiles are not as complete as this one):

A screenshot of a social media post

Description automatically generated

A picture containing screenshot

Description automatically generated

A screenshot of a cell phone

Description automatically generated

(random ideas, very-scratch work)

Brainstorming 100 features for the project:

summarizing health forum conversations using big data

Sentence-level

1. Aspect-opinion pair: color bar graph
2. Aspect-opinion pair: colored text
3. Aspect-opinion pair: underlined text
4. Aspect-opinion pair: bold text
5. Aspect-opinion pair: big text and small text
6. Highlight aspect name
7. Highlight sentiment polarity
8. Show short snippet, e.g. : “… Drug A is effective…”
9. Use “…” to replace irrelevant text
10. Use good font to display text
11. Allow user to choose hide/show all sentences.
12. **Allow user to vote up/down or flag a sentence**
13. **“explore” relevant sentences (recommendation system)**

Post-level

1. Use an icon to display forum
2. Use highlighted text to show overview
3. **Let users click the posts to view the original post or open in a new tab**
4. Use cards to replace posts and display sentiment-related info on cards
5. Use bar graphs to display overall sentiment across all posts about a certain topic
6. Use bar graphs to display all post count for various forums
7. Use pie charts to display satisfaction rate
8. Use pie charts to display demographic info
9. **Use line chart to track sentiment across time for various drugs**
10. **Use word cloud for user to explore data**
11. **Allow user to vote up/down or report a post**
12. **Add post to favorites / watch list and come back to view later**
13. Show conversation hierarchy info (tree)
14. Show timestamp of post
15. Filter all posts
16. Allow search by topic
17. Ask user feedback for correctness of classification
18. Allow user to choose hide/show all posts.
19. **“explore” relevant posts (recommendation system)**

UI-level

1. Use clean UI design
2. Use consistent font and color
3. **Ask domain experts for feedback**
4. Use boxes to group elements
5. **Use animations between pages and graphs**
6. **Use icons to replace text**
7. **Use calming background animations**
8. **Log user activities on the website**
9. **A/B testing for better performance**
10. **Conduct user interviews**
11. **Conduct user surveys**
12. **Conduct user observations**

Search-level

1. **Auto-complete for search bars**
2. Allow user to enter a disease/drug name on search bar
3. Show relevant drugs/diseases after search
4. Refine search by demographic details
5. Refine search by polarity
6. Refine search by forum
7. Refine search by time
8. Refine search by length
9. Refine search by adjective
10. **Refine search by aspect**
11. Display relevant search terms during search
12. Auto-correct misspelled words for searched term
13. Show “recent searches” for each user
14. **Allow search by topic (drug, safety, company, policy)**
15. **Filter results by topic (drug, safety, company, policy)**
16. Add “loading GIF” when user waits for result
17. After search, display top adjectives/aspects of interest

Drug-level

1. Let user see drugbank.ca data easily
2. Display a short intro for the drug
3. Display general sentiment towards the drug
4. Display top 3 pros and cons for the drug
5. Display a picture for the drug
6. **Allow to multi-select and compare drugs**
7. **Use radar graph to display various aspects of drug**

Disease-level

1. Let user see choose disease through body position
2. Let user choose disease by category
3. Let user choose disease by A-Z
4. Give each disease a different color in preview list
5. List disease-related drugs
6. List other often accompanying diseases

Software-level

1. Develop 2 user interfaces, one for healthcare workers, one for patients
2. Add terms of service
3. Add privacy statement
4. Add phone compatibility
5. Add cache and session
6. Add registration page
7. Add login page
8. Push code to a private Github repo
9. Comment the code so others can use it easily
10. Allow open-source?
11. Advertise the software to FB and Twitter, to gather a bigger user base
12. **Ask stakeholders “what task do you need to accomplish”**

User-level

1. Create user portrait
2. Let user see their search/viewing history
3. **Let user log in and save their favorite conversations**
4. Ask user for feedback and rating for the tool
5. User can “favorite” a post or sentence
6. Let user follow/subscribe certain topics/drugs of interest
7. **For the subscribing topics, use line graph to show trend over time on user dashboard (healthcare)**
8. User can suggest a new search term item
9. User can report for bugs easily
10. User can contact the team easily by email or phone

Research-level

1. Create generic patient portraits
2. Provide automatic citation support for the posts
3. **Ask forums for approval**
4. **Quick user guide/tutorial**

5 ideas

1. Ask user for Feedback

In every page, add a small conversation icon that pop into a dialog when the user clicks it. It should ask user for feedback and the user could leave their email to get a follow-up from our team.

1. Refine search by aspect/adjectives

When a user enters a search term, the results should consist of relevant aspects and sentiments in an overview manner. Then the user could select only aspects of interest by clicking/hovering over the terms that are highlighted.

1. Track trends over time

When a user selects a specific drug/aspect, the card should display the sentiment trend of this aspect over the entire timeline. The user can brush/adjust the size of the rectangle to select only the time of interest.

1. Compare different aspects (drugs/companies)

When a user sees aspects, she could select “add this aspect to my favorite and track over time”. When user goes into his dashboard homepage, she could see multiple aspects/entities that she chose before and track the sentiment over time.

1. Use radar graph to display aspect features

When a user sees aspects, there should be a spider-web-graph that marks the features. The features should be consistent for all aspects of the same time (i.e. drug, company, etc.). The spider web graph should be clearly labeled and have nice colors/animations when shown.