

MICHIGAN STATE

UNIVERSITY

Beta Presentation

Healthcare Payer Price Transparency

The Capstone Experience

Team HAP

Mansour Alblooshi

Drew Hamilton

Alvin Hoang

Joshua Thomas

Sai Upparapalle

Manan Vyas

Department of Computer Science and Engineering
Michigan State University

Fall 2024



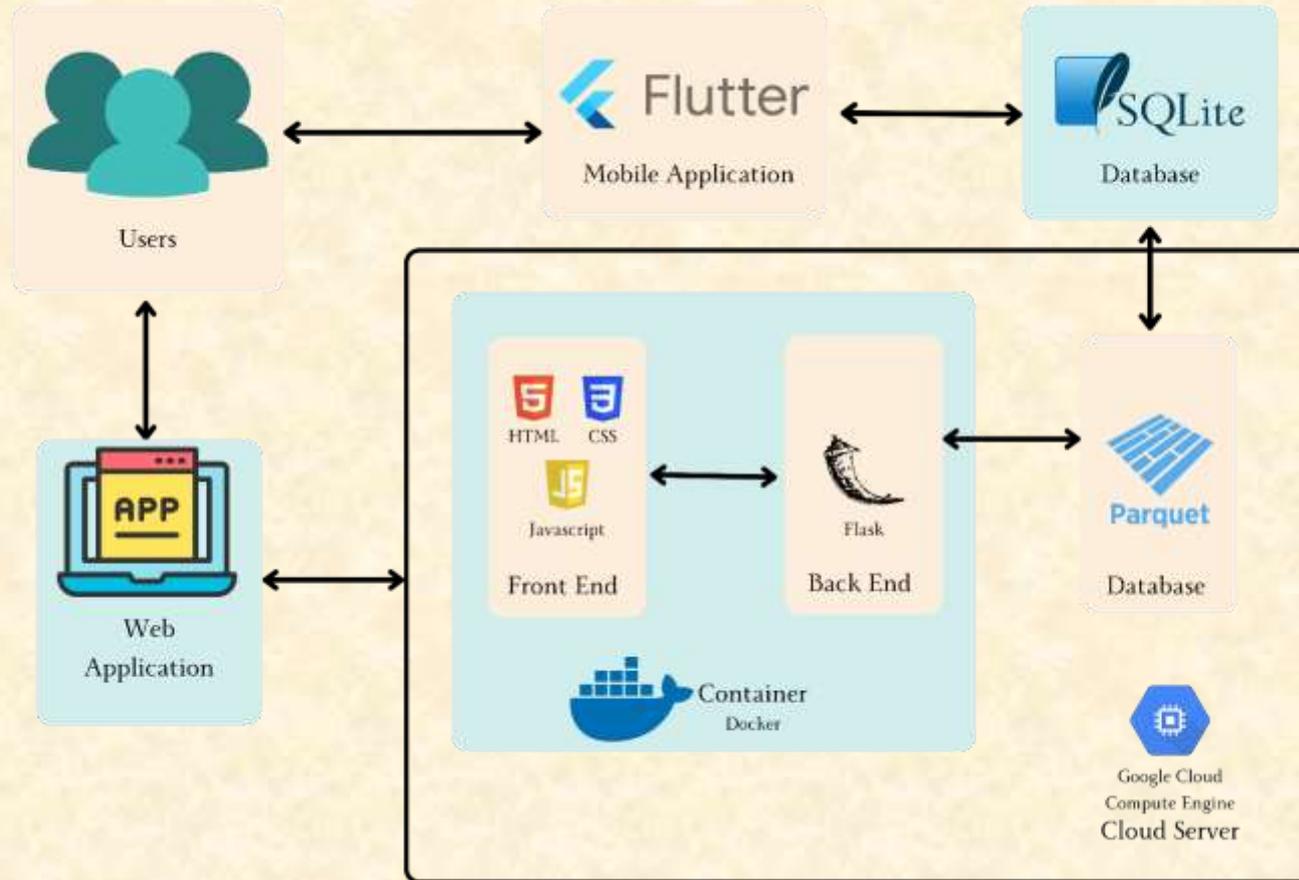
*From Students...
...to Professionals*

Project Overview

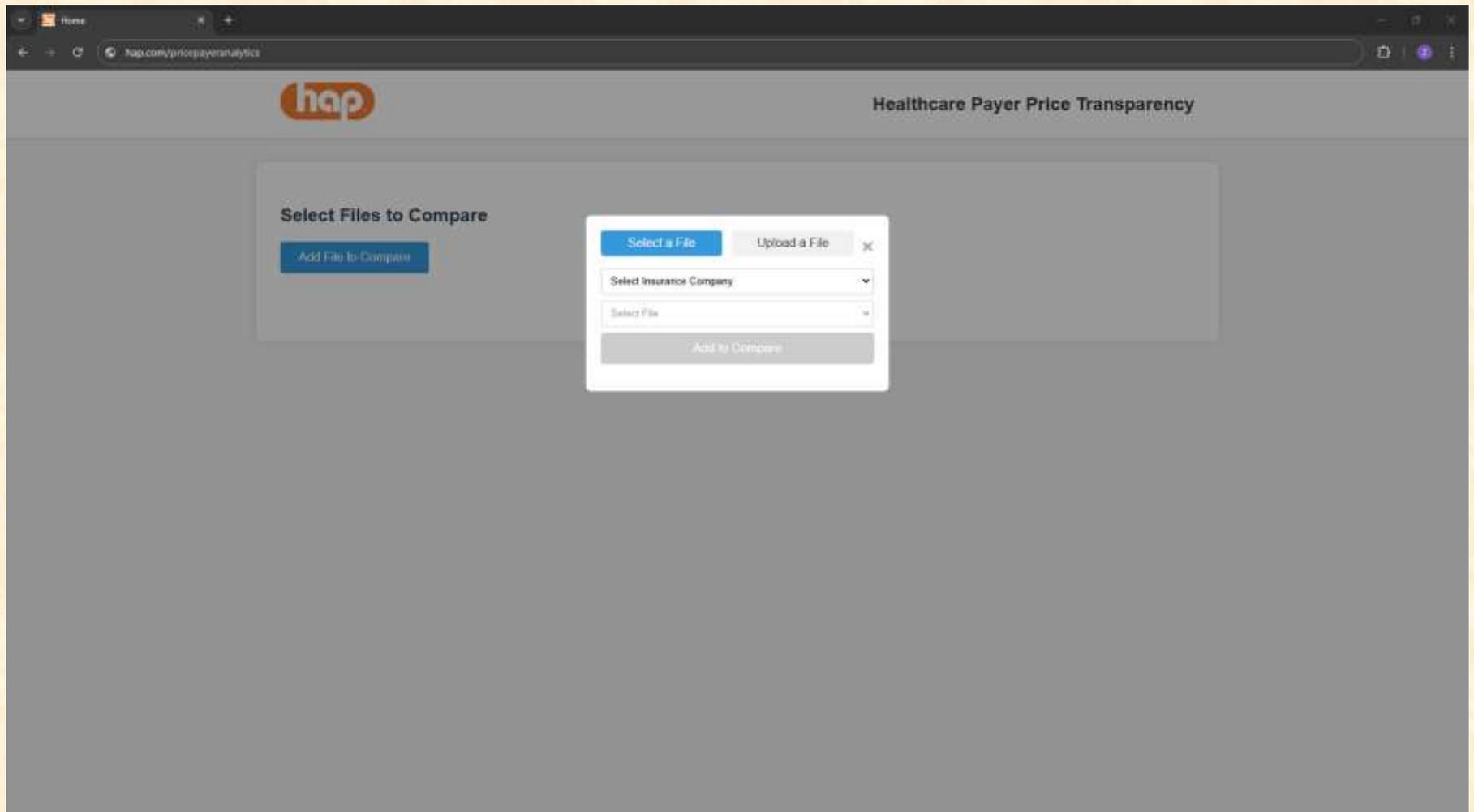
- Extract relevant data from machine-readable files provided by health insurance companies.
- Use the data to create analytical insights about negotiated rates with healthcare providers.
- Show price and coverage discrepancies between HAP and other insurance providers to show where HAP should re-negotiate.
- Use the extracted MRF files in mobile app to show providers available in an insurance plan



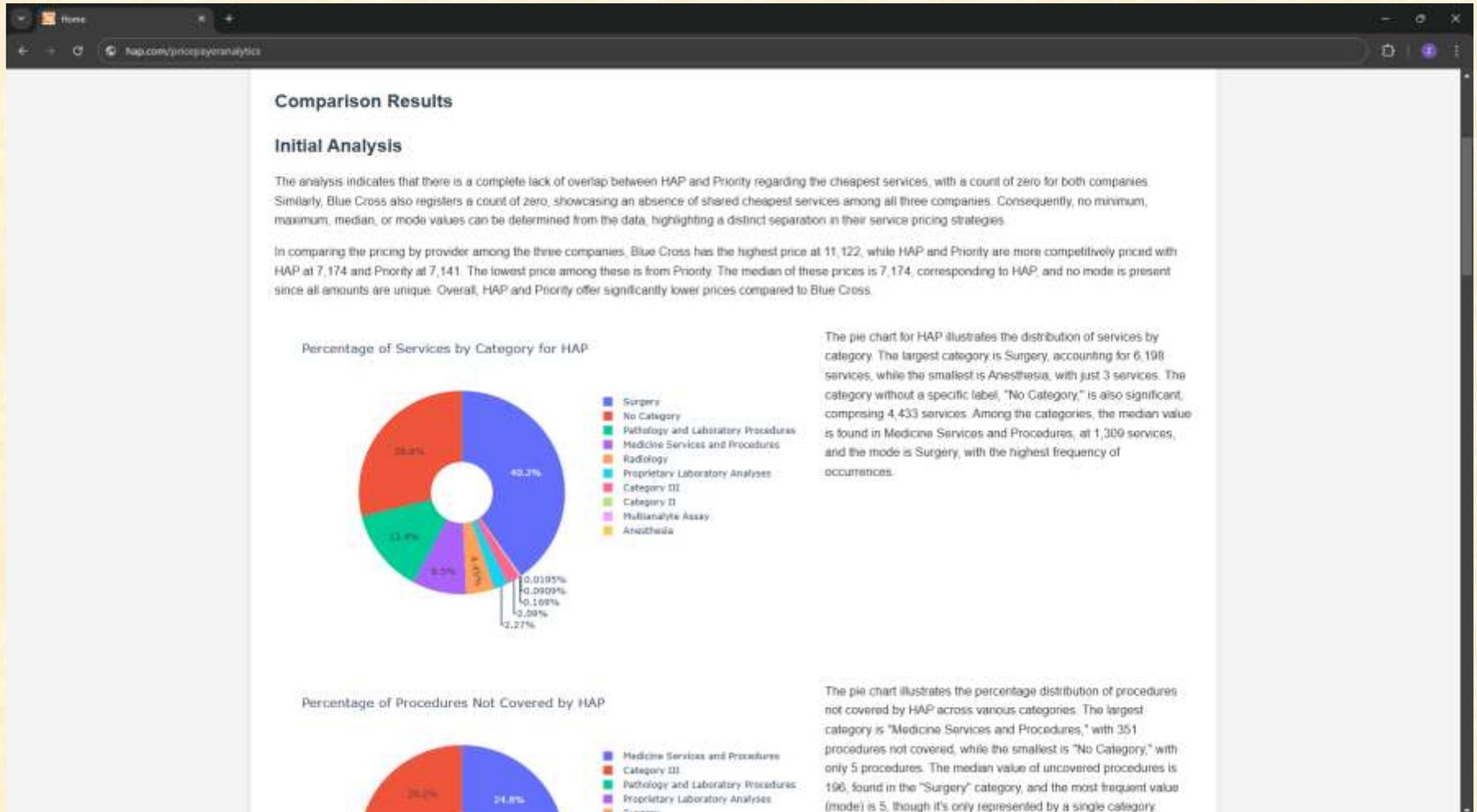
System Architecture



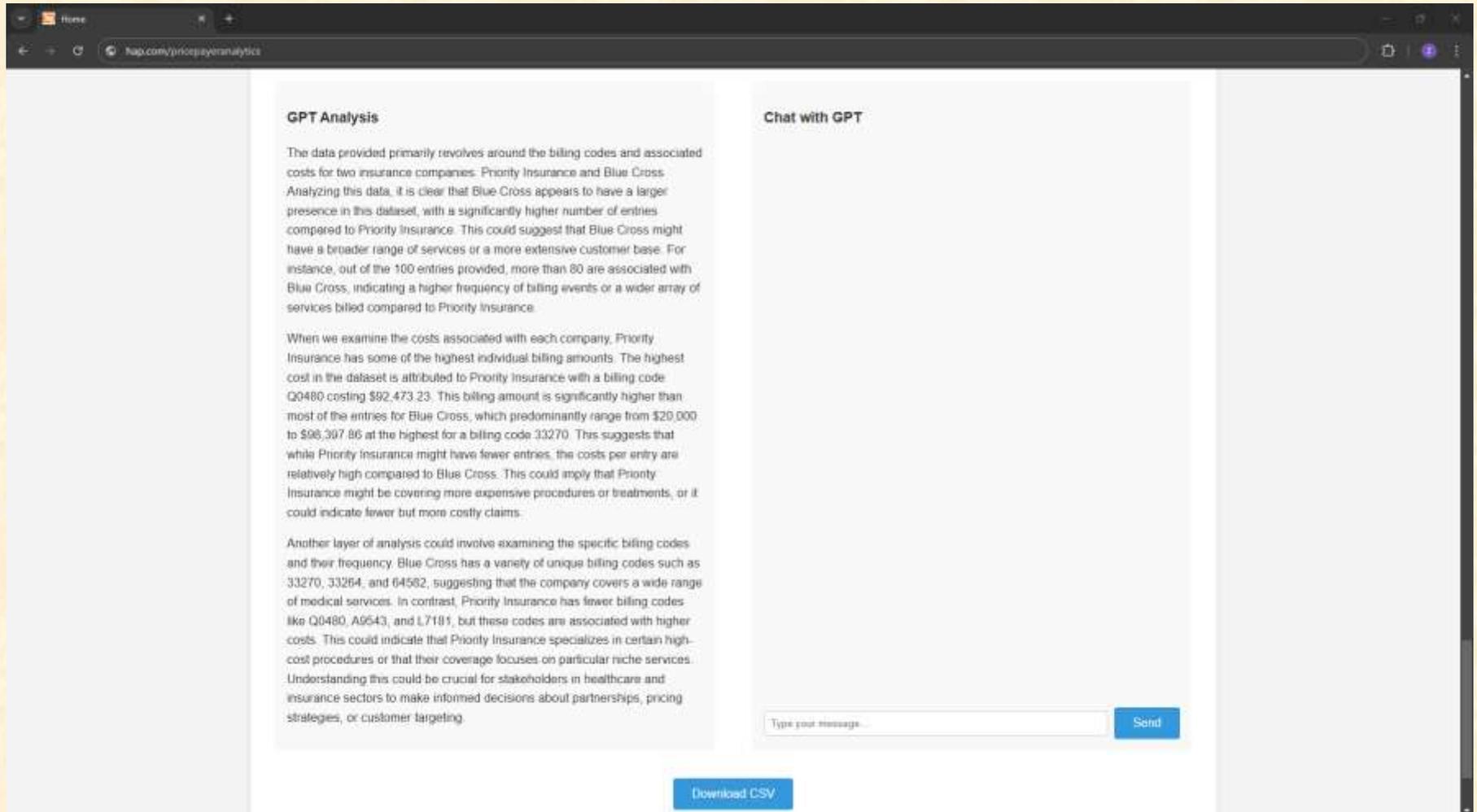
Select Files



Graphs and Analytics



GPT Analysis and Chatbot



The screenshot shows a web browser window with the URL `hap.com/pricopayeranalytics`. The page is divided into two main sections: "GPT Analysis" and "Chat with GPT".

GPT Analysis

The data provided primarily revolves around the billing codes and associated costs for two insurance companies: Priority Insurance and Blue Cross. Analyzing this data, it is clear that Blue Cross appears to have a larger presence in this dataset, with a significantly higher number of entries compared to Priority Insurance. This could suggest that Blue Cross might have a broader range of services or a more extensive customer base. For instance, out of the 100 entries provided, more than 80 are associated with Blue Cross, indicating a higher frequency of billing events or a wider array of services billed compared to Priority Insurance.

When we examine the costs associated with each company, Priority Insurance has some of the highest individual billing amounts. The highest cost in the dataset is attributed to Priority Insurance with a billing code Q0480 costing \$82,473.23. This billing amount is significantly higher than most of the entries for Blue Cross, which predominantly range from \$20,000 to \$98,397.86 at the highest for a billing code 33270. This suggests that while Priority Insurance might have fewer entries, the costs per entry are relatively high compared to Blue Cross. This could imply that Priority Insurance might be covering more expensive procedures or treatments, or it could indicate fewer but more costly claims.

Another layer of analysis could involve examining the specific billing codes and their frequency. Blue Cross has a variety of unique billing codes such as 33270, 33264, and 64582, suggesting that the company covers a wide range of medical services. In contrast, Priority Insurance has fewer billing codes like Q0480, A9543, and L7181, but these codes are associated with higher costs. This could indicate that Priority Insurance specializes in certain high-cost procedures or that their coverage focuses on particular niche services. Understanding this could be crucial for stakeholders in healthcare and insurance sectors to make informed decisions about partnerships, pricing strategies, or customer targeting.

Chat with GPT

Below the chat interface, there is a "Download CSV" button.



Billing Code Search

customer base. However, Priority insurance does cover significant costs, indicating its potential focus on specific, possibly high-priority medical needs. The distinction in the dataset could reflect different business strategies where Priority may focus on niche or critical medical services, whereas Blue Cross covers a more general and extensive range of medical expenses. This analysis outlines how both insurance providers play distinct roles in the healthcare insurance domain, each catering to different aspects of medical cost coverage.

Type your message. [Send](#)

[Download CSV](#)

Billing Code Information

Enter Billing Code:

[Get Info](#)

Provider NPI	HAP Cost	Priority Cost	Provider Name	Organization Name	Zipcode Location/Mailing	Taxonomy Description	Taxonomy Code	State	License	Primary
1398798542	49.28	23.55	RANDALL BRADY	Organization Not Found	('49546', '49503')	Physician Assistant	363A00000X	MI	5601002491	True
1295869188	64.35	48.92	TYLER MURPHY	Organization Not Found	('49424', '49424')	Internal Medicine	207R00000X	MI	4301084215	True
1184673121	67.31	49.53	RONALD HOOGMOED	Organization Not Found	('49546', '49546')	Internal Medicine	207R00000X	MI	4301058371	True
1982751887	67.31	52.63	DAVID TATTAN	Organization Not Found	('49427', '49427')	Family Medicine	207Q00000X	MI	5101007711	True
1043214414	67.31	48.92	DAVID LIEUWEN	Organization Not Found	('49546', '49546')	Family Medicine	207Q00000X	CO	40001	False
1275518581	41.86	21.17	VIJAY GOBURDHUN	Organization Not Found	('48154', '48154')	Internal Medicine	207R00000X	MI	4301031529	True



File Dashboard

The screenshot shows a web browser window with the URL `hap.com/pricetp/pricepayeranalytics/dashboard`. The page features the HAP logo and the title "Healthcare Payer Price Transparency".

File Dashboard

Storage Information

Total Space: 1.82 TB Used Space: 1.34 TB Free Space: 486.48 GB

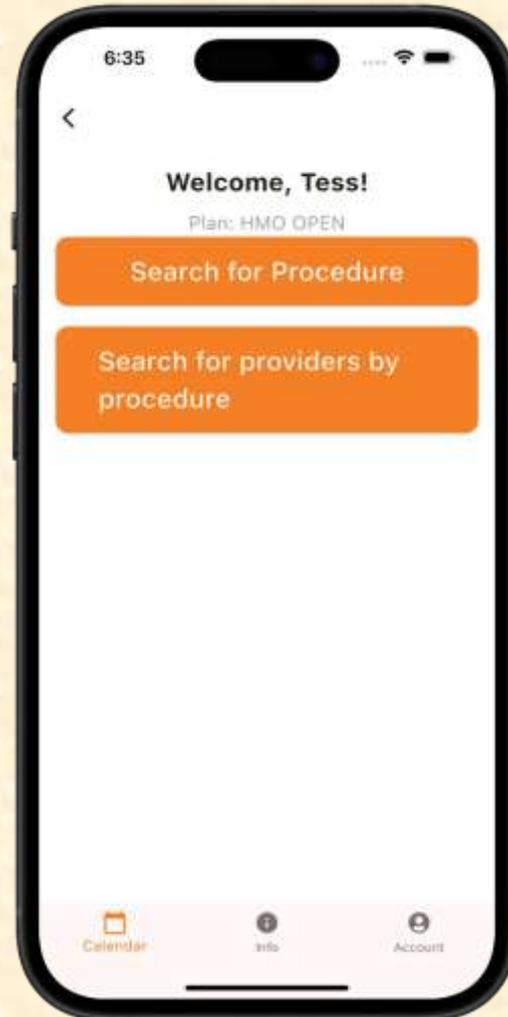
Enter file URL: Blue Cross ▼ [Upload](#)

Current Files

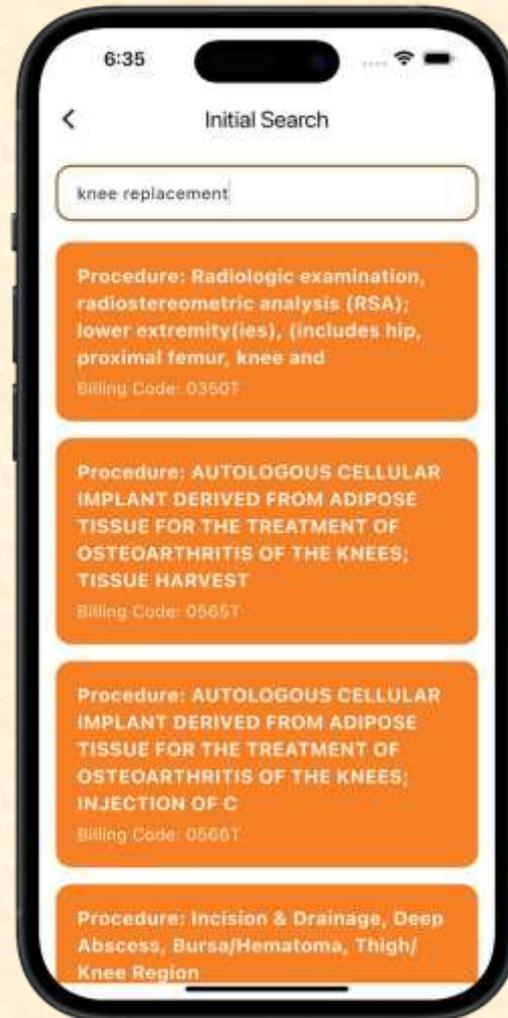
Folder	File Name	Size	Action
blue_cross	blue_cross parquet	612.11 MB	Delete
hap	2024-09-01_GNYC_Health-Alliance-Plan_compressed parquet	1016.26 MB	Delete
	hap_compressed parquet	1.01 GB	Delete
priority	priority parquet	12.06 MB	Delete



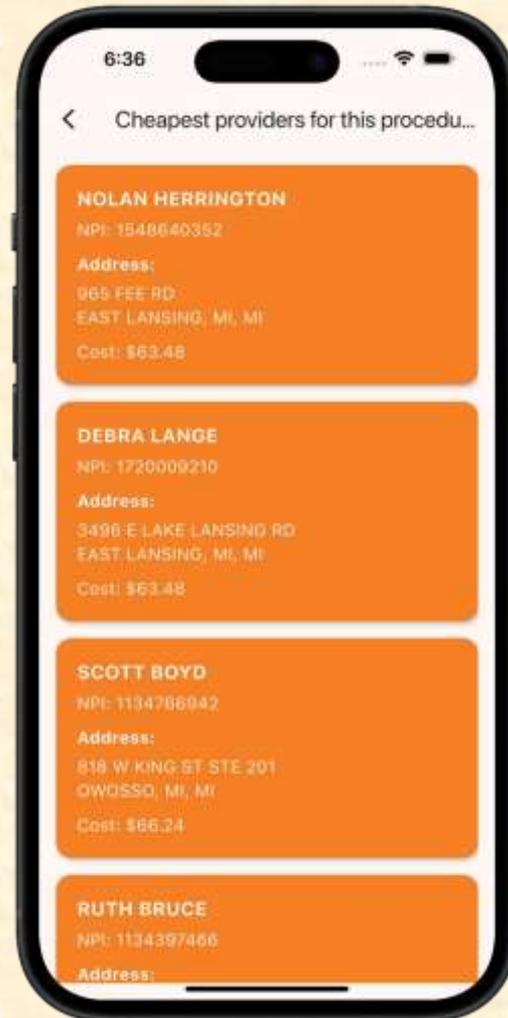
App Welcome Screen



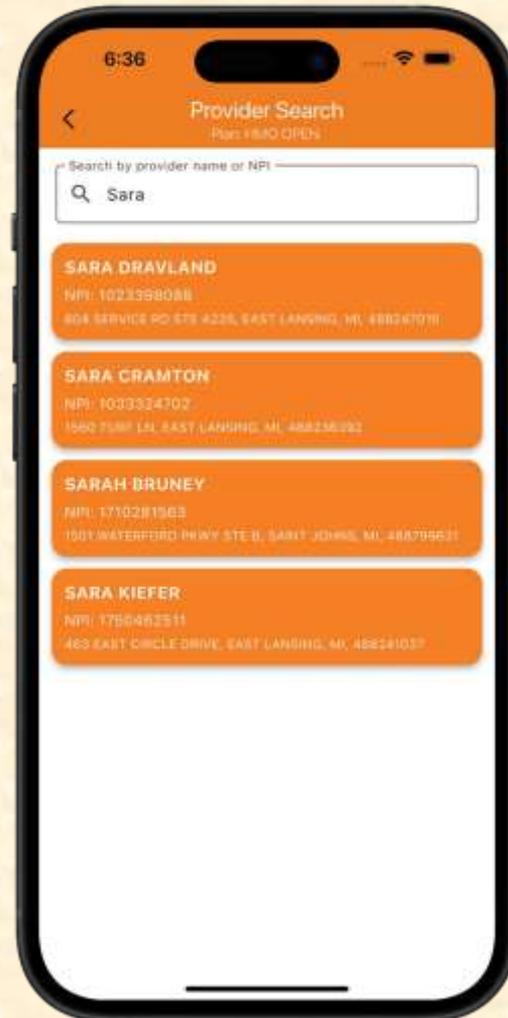
Procedure Search



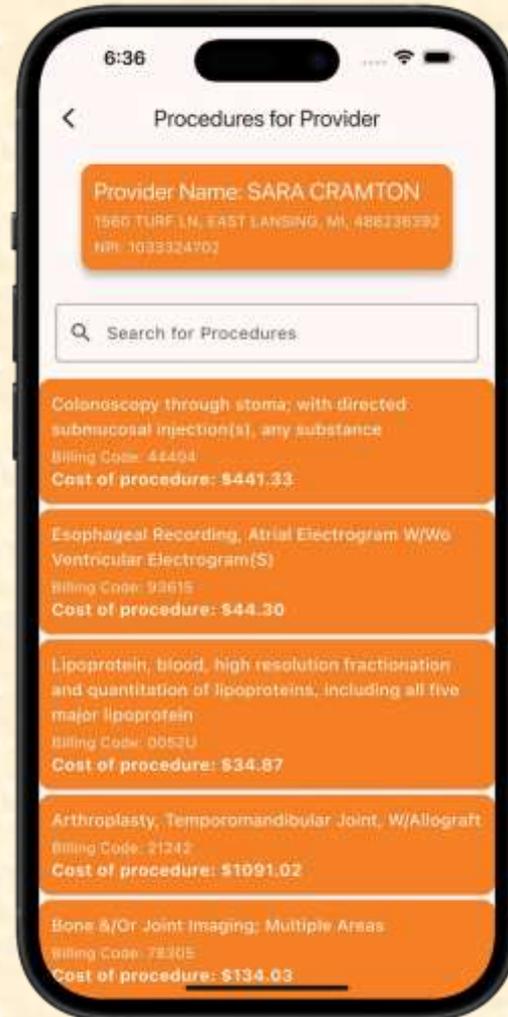
Procedure Prices



Provider Search



Procedures for Provider



What's left to do?

- Stretch Goals
 - Appointment reminders on mobile app.
- Other Tasks
 - UI improvements for consistency and readability.
 - Find and fix any remaining bugs.



Questions?

?

?

?

?

?

?

?

?

?

