SPS HEALTH

AI Implementation Intern
Case Study Exercise

Background

As part of SPS Health's RFP evaluation process, the company has received a year's worth of claims data from a prospective long-term care pharmacy client (Pharmacy A). You have been provided this dataset to assess the utilization pattern of claims generated from this client in 2021. An additional dataset of drug information is also provided for your reference.

Both files are provided in .csv format, delimited by ~ (tilde). The common key across the two datasets is the **NDC** (National Drug Code) field.

Your Assignment

Your task is to use AI tools to explore, merge, analyze, and visualize the provided datasets. Rather than a static slide deck, you will produce an **interactive, web-based dashboard** that tells the story of this client's claims data and demonstrates your ability to leverage AI as an analytical tool.

This exercise evaluates three core competencies:

1. **AI Proficiency:** Your ability to effectively prompt and leverage AI tools to accomplish analytical tasks, including data merging, exploration, and visualization.
2. **Data Storytelling:** Your ability to identify meaningful patterns, trends, and anomalies in the data and communicate them clearly through an interactive format.
3. **Dashboard Design & Interactivity:** The quality, usability, and thoughtfulness of your visual output — filters, drill-downs, layout, and overall user experience.

Deliverables

Your final submission should include the following components:

1. Interactive Dashboard

Build a web-based, interactive dashboard (think: pseudo-Power BI) that presents the merged claims and drug data. You may use any AI tool and any output format you choose — for example, a Claude Artifact, a ChatGPT-generated HTML file, a Replit app, a Streamlit dashboard, or any other approach. The dashboard should include:

- **Overall utilization summary:** Total claims volume, monthly trends, adjudication rates, and net claim counts over the 2021 period.
- **Drill-down capability:** The ability to filter or drill into the data by key dimensions such as formulary, group ID, pharmacy state, mail/retail channel, drug name, manufacturer, and multi-source indicator (MONY).
- **Trend identification:** Highlight noteworthy patterns, seasonality, anomalies, or concentrations you observe in the data (e.g., top drugs by volume, reversal rates by channel, geographic distribution).
- **Narrative layer:** Include commentary or annotation within the dashboard that explains what the data is showing and why it matters. The dashboard should tell a story, not just display charts.

2. Follow-Up Questions & Next Steps

Within or alongside your dashboard, include a dedicated section that addresses:

- **Questions for the client:** What follow-up questions would you ask Pharmacy A based on what you've found in the data? What gaps or ambiguities did you identify?
- **Questions for internal teams:** What would you want to understand from SPS Health's operations, pricing, or network teams to contextualize this data?
- **Additional data requests:** What other datasets would enhance your analysis (e.g., pricing data, patient demographics, formulary tier details, reimbursement rates)?

3. Dashboard Extension Mock-Up

Demonstrate forward-thinking by showing how your dashboard would evolve with additional data. This should include **both** of the following:

- **Visual mock-up:** Add placeholder sections, tabs, or panels to your dashboard that show where and how you would incorporate the additional data you've requested. These can use sample or placeholder data — the point is to show your vision for what a more complete analytical tool would look like.
- **Written explanation:** Include a brief narrative (within the dashboard or as a companion document) explaining how each additional data source would integrate into the existing dataset, what new insights it would unlock, and how it would change the story you're telling about this client.

AI Process Documentation

We want to understand how you work with AI, not just the final output. Please include a brief process summary (this can be a section in your dashboard, a separate document, or a screen recording) that covers:

- Which AI tool(s) you used and why you chose them.
- Key prompts or prompt sequences that drove your analysis and dashboard creation.
- Where the AI got it right on the first try vs. where you had to iterate, refine, or correct its output.
- Any limitations you encountered with AI tools and how you worked around them.

Guidelines

- **Tool choice is yours.** You may use any AI tool(s) — Claude, ChatGPT, Copilot, Gemini, Cursor, Replit, or any combination. You may use any visualization framework or platform. We're evaluating your judgment in selecting and using the right tools, not loyalty to a specific platform.
- **There is no strict time limit.** We are evaluating the quality and thoughtfulness of your output, not speed. That said, a strong candidate should be able to leverage AI to produce excellent work efficiently.
- **Quality over quantity.** A focused, well-designed dashboard with clear insights is better than a sprawling one with dozens of unfocused charts.
- **The dashboard should stand on its own.** Someone unfamiliar with this exercise should be able to open your dashboard and understand the story being told without additional explanation.

Data Dictionary

Claims_export.csv

Field	Description
`ADJUDICATED`	True/False for whether the claim was adjudicated at the point of sale
`FORMULARY`	Which formulary the drug claim was submitted under
`DATE_FILLED`	Date on which the claim was processed
`NDC`	National Drug Code — the FDA's unique identifier for drugs
`DAYS_SUPPLY`	Intended number of days that the dispensed drug supply should cover
`GROUP_ID`	Identifier for which group the drug claim was submitted under
`PHARMACY_STATE`	U.S. state where the pharmacy that submitted the claim is located
`MAILRETAIL`	Delivery channel for the drug order (mail-order vs. retail)
`NET_CLAIM_COUNT`	Final status of claim: +1 = incurred claim, -1 = reversed claim

Drug_Info.csv

Field	Description
`NDC`	National Drug Code — the FDA's unique identifier for drugs
`DRUG_NAME`	Short-hand name for the drug
`LABEL_NAME`	A more detailed / full name for the drug
`MONY`	Multi-source indicator from Medi-Span (M = multi-source brand, O = multi-source generic, N = single-source brand, Y = single-source generic)

MANUFACTURER_NAME	Name of the drug's manufacturer

Submission

Please submit the following:

1. A link to your interactive dashboard (hosted URL, shared artifact link, or HTML file).
2. Your AI process documentation (can be embedded in the dashboard or submitted separately).
3. Any companion files or documents referenced in your submission.

We look forward to seeing how you leverage AI to turn raw data into insight. Good luck!