## Title:

Influenza (flu) vaccination Data Analysis Project using PostgreSQL.

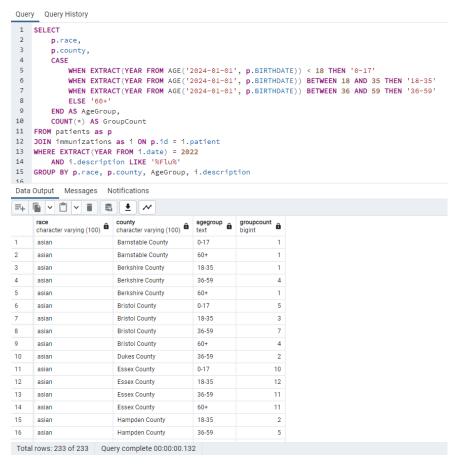
#### Requirements:

You will have a few flat files, load them into PostgreSQL and answer the following important healthcare questions.

## **Problem Statements:**

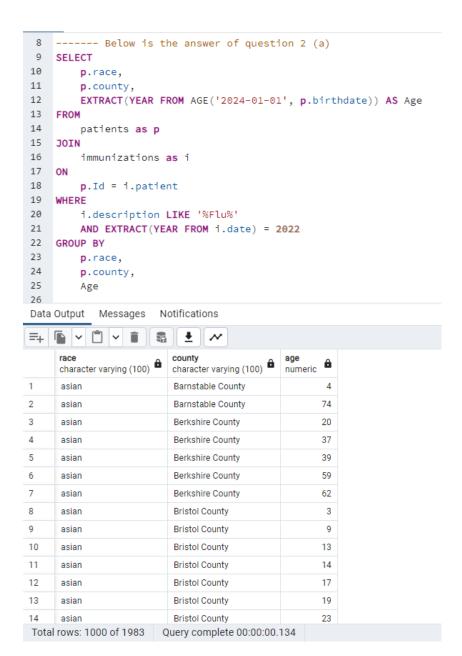
## 1. Annual Flu Shot Statistics by Demographics:

- How many patients received a flu shot in the year 2022, broken down by age, race, and county?
- Answer query:



## 2. Percentage Analysis of Flu Shots:

- What is the percentage of patients who received a flu shot in 2022 compared to the total number of patients, stratified by age, race, and county?
- Answer query:



- What is the overall percentage of patients who received a flu shot in 2022 across the entire hospital or clinic?
- Answer query:

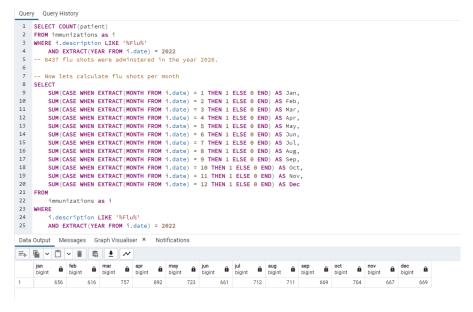
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36 ----- Below is the answer of question 2 (b)
37 SELECT
38 (SELECT COUNT(i.patient) --specific
39 FROM immunizations as i
40 WHERE i.description LIKE '%Flu%'
41 AND EXTRACT(YEAR FROM i.date) = 2022) * 100 /
42 (SELECT COUNT(i.patient) --total
43 FROM immunizations as i) AS percentage_of_vaccinated
44
45

Data Output Messages Notifications

The Procentage_of_vaccinated biggint
1 5
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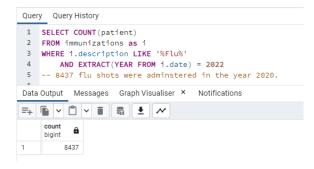
## 3. Monthly Cumulative Flu Shot Data:

- How many flu shots were administered each month during the year 2022?
- Answer query:



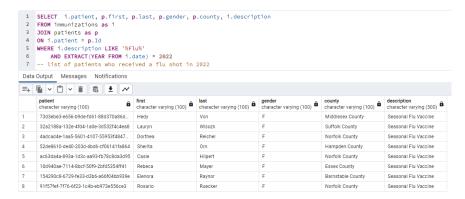
#### 4. Total Annual Flu Shots:

- What is the total number of flu shots given in the year 2022?
- Answer query:

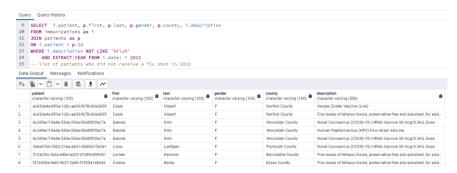


#### 5. Patient Lists for Flu Shot Analysis:

- Can you provide a list of patients who received a flu shot in 2022?
- Answer query:

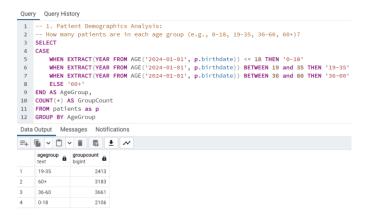


- Can you also provide a list of patients who did not receive a flu shot in 2022?
- Answer query:

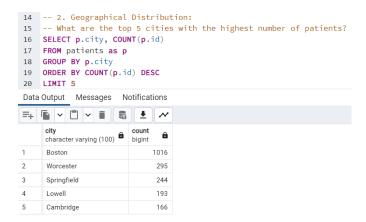


# More Questions that should be answered:

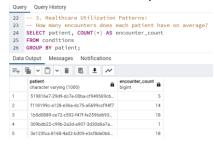
1. Patient Demographics Analysis: How many patients are in each age group (e.g., 0-18, 19-35, 36-60, 60+)?



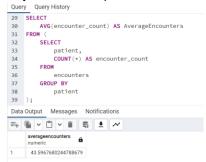
2. Geographical Distribution: What are the top 5 cities with the highest number of patients?



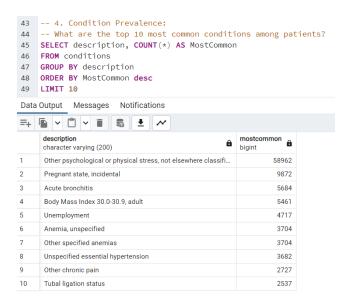
- 3. Healthcare Utilization Patterns: How many encounters does each patient have on average?
  - 1. There are 2 meanings of the question: I've solved both.
    - 1. This means that how many encounters does each patient have:



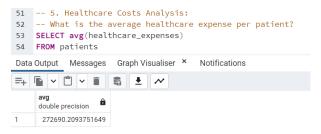
2. This shows how many encounters does each patient have on average, so the answer will be just one for all patients and not different for each patient:



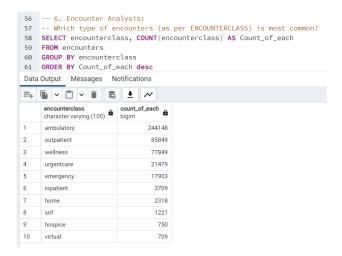
4. Condition Prevalence: What are the top 10 most common conditions among patients?



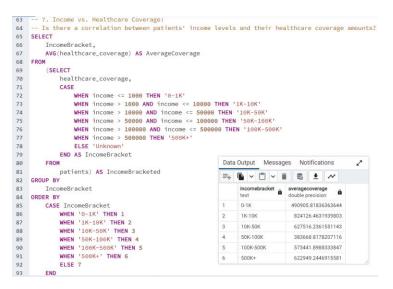
5. **Healthcare Costs Analysis:** What is the average healthcare expense per patient?



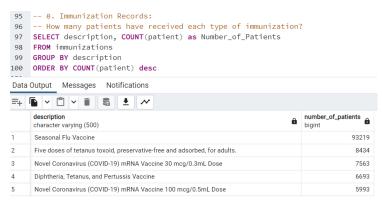
6. Encounter Analysis: Which type of encounters (as per ENCOUNTERCLASS) is most common?



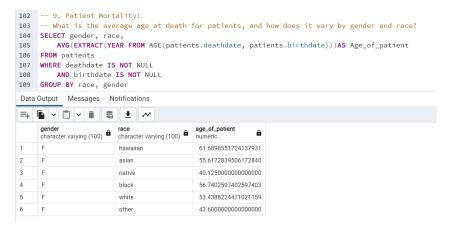
7. **Income vs. Healthcare Coverage:** Is there a correlation between patients' income levels and their healthcare coverage amounts?



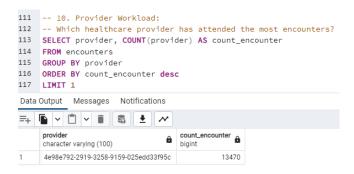
8. Immunization Records: How many patients have received each type of immunization?



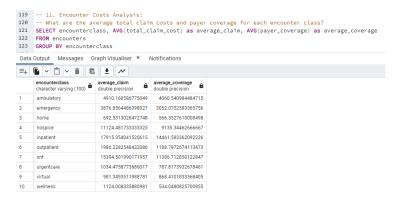
9. Patient Mortality: What is the average age at death for patients, and how does it vary by gender and race?



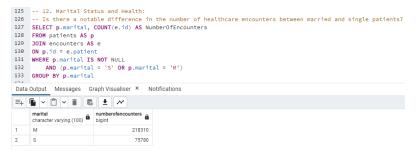
10. Provider Workload: Which healthcare provider has attended the most encounters?



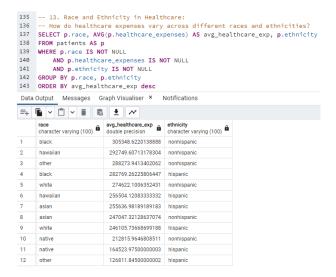
11. **Encounter Costs Analysis:** What are the average total claim costs and payer coverage for each encounter class?



12. **Marital Status and Health:** Is there a notable difference in the number of healthcare encounters between married and single patients?



13. Race and Ethnicity in Healthcare: How do healthcare expenses vary across different races and ethnicities?



14. **Chronic Condition Management:** Which patients with chronic conditions (conditions lasting more than 1 year) have the highest number of encounters?



15. Patient Coverage Gaps: Identify patients with high healthcare expenses but low healthcare coverage.

