Peer Review Project

# Tutorial

## Stack Analysis: Above the Line

*As you learned in this course, data queries need to understand the above-the-line concerns. In this case: What do we want to learn about the flu vaccination problem and why?*

### World

*The “World” is the United States.*

**Write: What attributes of the United States are important that might be different in other areas of the world for understanding the flu/vaccination problem?** **[1−3 sentences]**

### Organization

*You are a hospital wanting to understand what burden of disease to expect in the coming year. While the past is not identical to the future (as the pandemic has taught us), it gives a sense.*

*In this scenario, the hospital will want to know, given an outbreak, what proportion will get sick (and come to the hospital), and how much they will cost the hospital, on average.*

**Write: The county you (personally) live in**

**Write: Why might a hospital want these numbers? [1−3 sentences]**

### Role

*You are the hospital administrator*

**Write: What outcomes are of most importance to this role? [1−3 sentences]**

### Functions

*We have said the administrator is looking to prepare for the coming year, so the function is Readiness Preparation*

### Workflow

*Once the administrator knows these numbers, hospital leadership will convene to decide on strategies (resource allocation) for preparing for the outbreak.*

## Question Analysis

*With this background, we tackle the two core questions: (1) How many patients will be admitted and (2) How sick will they be? We will tackle both.*

### How many patients will be admitted?

*The number of patients admitted = (a) Number at risk x (b) Risk of admission for flu*

1. *Clinically, we think about what patients at high risk and who are at low risk. However, our data sources (see below) give population-wide numbers, so we don’t have to be so detailed.*
2. *For Risk of Flu, we will consult our first data source,* [*HealthData.gov*](https://healthdata.gov/)

*Follow the* [*link*](https://healthdata.gov/)*. Type “influenza” into the Search Box and click “Apply”. The panel on the left will show you what Categories (under Authority) are available. Click on “Show All...”; click on “State”*

**Write: The name of the relevant State [County] Resource**

*Open* [*the resource*](https://healthdata.gov/State/Influenza-Surveillance/aa6f-huzp)

*Download the spreadsheet: Click on the TEXT/CSV button*

*Open the spreadsheet (e.g., in Excel)*

*Sort the 70,000+ rows by Season (descending), County (ascending), and Week (ascending),*

*In the 2018-2019 Season (i.e., pre-covid), locate your County*

**Write: The name of the relevant tag under “Diseases & Conditions”**

**Write: In what week number is flu the most widespread?**

**Write: The number of lab-confirmed cases**

**Write: How does knowing this worst week help our hospital administrator?**

*Now we want to see how lab-confirmed cases translate into hospitalizations.*

*FLUView is CDC’s interactive influenza surveillance report.*

*Go to* [*FLUView*](https://www.cdc.gov/flu/weekly/)*.*

*Scroll down to “Influenza-Associated Hospitalizations.” Click on the title.*

*Now in “4. Hospitalization Surveillance,” scroll down. Click on “*[*hospitalization rates for multiple seasons and different age groups*](https://gis.cdc.gov/GRASP/Fluview/FluHospRates.html)*”*

*Under the banner, “Rates of Influenza Hospitalization,” go the to left. Click on “Weekly rate” radio button, and, where is says, Age Group, click the down arrow to select “Season.”*

*Locate the 2018-19 season (either by color or by deselecting “All Seasons” and then selecting “2018-19”*

**Write: The Week Number that is the maximum**

**Write: How does this number compare with what you found in the spreadsheet?**

*Back at the radio buttons on the left, click on “Cumulative Rate”*

**Write: The cumulative incidence rate for all age groups, with the appropriate units (see *y*-axis)**

*We now need the population of the catchment area. Let’s assume the county. We need the population of the county.*

*Go the* [*Census Web site*](https://www.census.gov/data/tables/time-series/demo/popest/2010s-counties-detail.html)*. In the search bar, type in the Count name you used in the spreadsheet; you may have to select the state.*

*On the right-hand size is a list of information about the County.*

**Write: The county population**

**Write: The number of admissions for your hospital that this number implies.**

*I.e., multiply the cumulative hospitalization by the population, paying attention to the units*

### How sick will they be?

*For this component, we need hospital information.*

*Click on this link for* [*HCUPnet*](https://hcupnet.ahrq.gov/#setup)

*Click on the oval near the bottom, “Find out more about HCUP.”*

*Click on “Overview of HCUP”*

**Paste the sentence in the paragraph at the left that starts, “**HCUP includes the largest collection…”

*The text mentions “encounters”.*

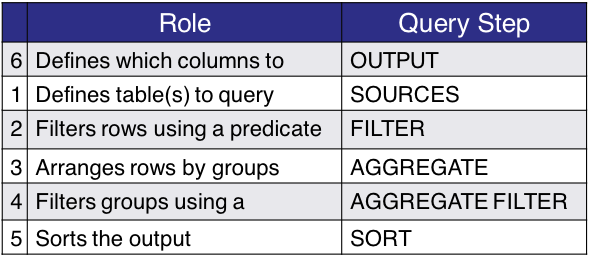
**Write: What sort of “encounter” are we interested in?**

**Write: The word “all-payer” suggests what data type is involved here?**

*Go back to HCUPNet. Click on Create a New Analysis.*

*Our goal is to estimate “how sick they are.” We will use two surrogates for “sick”: Cost and mortality.*

*But first, let’s look at the Data Query Formulation table. Fill it in the Report as we go along.*

**

**Write: Fill in the table in the Report, using the following sentence as a guide:** *We want, from HCUPnet, the total number of patients filling criteria for being admitted for the flu. (Not all rows may be needed.)*

*Separately, recall that the “Journalism” 5 questions helps a query.*

**Write: Fill in the Journalism table**

*The “PICOT” construct is not all that helpful here, because no treatment is involved.*

*Go back to HCUPnet. Click on “Create a New Analysis.” Click on “Inpatient”. Then “Descriptive Statistics”. Click on the year 2018. Click on “Yes, Statistics about specific conditions or disease…”*

*Click on “Choose a Classification”. Select “Diagnoses…(CCSR)”*

*Click on Select Codes. Type influenza into the search box. Select the term that comes up*

**Write: What do you call a list of codes that implement your intention (in this case, “viral influenza”)? [Hint: Think Course 3]**

*Click “Select,” then “Create Analysis.” “Accept” Data Use Agreement.*

*Feel free to update the “Journalism” table, if needed.*

**Write: Total number of discharges, rate of discharges**

*This is our best estimate for admissions. If the mortality were high (and therefore patients would not be discharged, the estimate for admission would = discharges + deaths.*

**Write: How many discharges expected at your hospital**

**Write: How does this estimate compare with what you got from the CDC? What might account for the differences?**

*We have not yet addressed the two concerns of cost and mortality.*

*On the left, click on Outcomes and Measures (under GET MORE DETAILS).*

*“Charges” is what gets charged, “costs” is what is costs. As the hospital administrator, you worry first about costs.*

*Click on the round circles for Costs and for Died. Scroll down and click “Submit Request”.*

**Write: Cost per patient (“mean”)**

*Think how to calculate the total cost at your hospital*

**Write: Total cost at your hospital**

**Write: In-hospital deaths %**

*This number is low, so we don’t have to “correct” our estimate of number of admissions.*

*Think how to calculate the number of deaths you expect.*

**Write: Total expected deaths in your hospital**

### Reflection [No right or wrong answer; not graded]

**Write: What did you learn from this assignment?**

### Don’t forget to do the Abstract!

# Grading Rubric

Rubric: Completeness, Correctness

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criterion | Weight | Poor (Point Value) | Fair (Point Value) | Good (Point Value) | Exceptional (Point Value) |
| Completeness | 50 | > 40% items missing | > 30% items missing | > 20% items missing | No items missing. |
| Correct | 50 | > 40% items incorrect | > 30% items incorrect | > 20% items incorrect | All items correct |