Solving a Healthcare Challenge

1. Pick a US State and study the "open data portals" that provide access to data and metadata.

Answer: I have chosen to work healthcare data for the California state in the USA. I have mentioned both the 'open data portals' that has been referred.

Answer: The data source: https://data.chhs.ca.gov/dataset/influenza-surveillance, the data dictionary https://data.chhs.ca.gov/dataset/influenza-surveillance/resource/83776194-ad94-43fd-8929-b3be1fdc3a3c

2. Choose an area in healthcare that has opportunity for improvement.

Answer: I have chosen to work on the dataset for Public Health Laboratory Influenza Respiratory Virus Surveillance Data by Region and Influenza Season as this area in healthcare has a lot of opportunity to improve and create positive impact on the clinical and well the research study. (like: Slow progress moving scientific interventions into clinical practice).

3. Create a concept map to identify important concepts and their relationships to each another that helps address how information can lead to decisions which improve your problem area (recall lessons in Module 2). For example, if you want to reduce costs and improve quality by reducing hospital stays, you need to identity what concepts define this problem areas (e.g., hospital admission, hospital discharges, reason for admission, patient illness).

Answer: I have attached the concept map for identifying the relationship between testing the clinical dataset and the detection of the Influenza
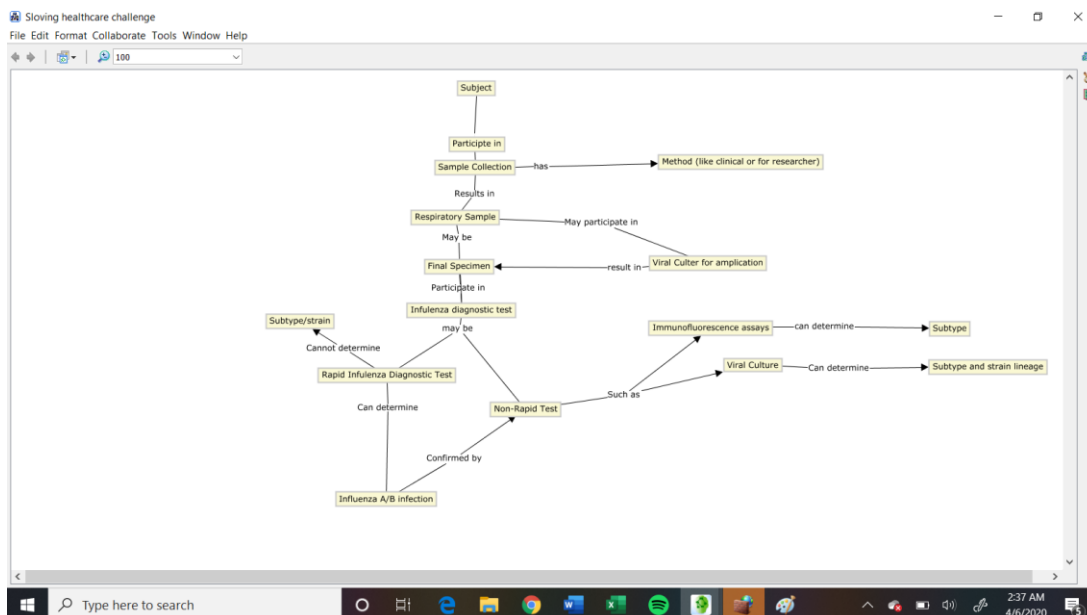
4. Consider the importance of at least two medical terminologies for your problem area.

Answer:
There are the 2 Influenza_Category that are mentioned in the dataset instead on the standard code these are 2 medical terminology that's being used for the Influenza survillence: Influenza A, Influenza B

Flu Types A and B are RNA viruses with a genome that has eight segment. Two of these portions encode the HA and NA glycoproteins which permit virus access to host cell. The flu virus might be additionally characterized by subtype. Flu virus are subtyped dependent on viral surface glycoproteins. Two glycoproteins, hemagglutinin (HA) and neuraminidase (NA) are antigens that respond with have (e.g., human) antibodies and are utilized for subtype grouping of flu Type A. In people, fewer subtypes of flu An (e.g., H1, H2, H3, N1, N2). Both flu Types An and B might be additionally subdivided by strain of virus.

5. Describe how your problem area could be better understood by combining data from at least two different data sources. Describe possible challenges with data harmonization and integration.

Answer:
Currently there is a lot of data insights that are required for the scientific interventions into clinical practice (Problem area) that requires the assistance of increasingly Electronic medical record (datasets) that has industry-wide data standards empowering the harmonization of clinical datasets and streamlining research methods for reporting, including the use of electronic health records to encourage study to conduct and the collection of high quality research data. Clinical dataset and Influenza Regional survey dataset require implementations and innovations that can improve the time/cost/quality proportion of clinical research to speed the improvement of more secure and more effective medical products and enable a better healthcare system.

6. Building on Step 4, provide some detailed description about what fields you might use to link data from various sources.

Answer: We can add more attributes, like regions, the recovery duration of the Influenza virus in a patient, age of the patient, also the season in which it occurs. This would be helpful to identify furthermore insight. These insights would be very helpful for the clinical monitoring as well and the research for the vaccine.