Assignment – Tidying and Transforming Vaccination Data

Age	Population % Not Vax %	Population % Fully Vax %	Severe Cases Not Vax per 100K	Severe Cases Fully Vax per 100K	Efficacy vs. severe disease
<50	**1,116,834** 23.3%	**3,501,118** 73.0%	**43**	**11**	
>50	**186,078** 7.9%	**2,133,516** 90.4%	**171**	**290**	

Definitions

Severe Cases = hospitalized

Efficacy vs. severe disease = 1 - (% fully vaxed severe cases per 100K / % not vaxed severe cases per 100K)

(1) Do you have enough information to calculate the total population? What does this total population represent?

(2) Calculate the Efficacy vs. Disease; Explain your results.

(3) From your calculation of efficacy vs. disease, are you able to compare the rate of severe cases in unvaccinated individuals to that in vaccinated individuals?

Spreadsheet is available here: https://github.com/acatlin/data/blob/master/israeli_vaccination_data_analysis_start.xlsx

The chart above describes August 2021 data for Israeli hospitalization ("Severe Cases") rates for people under 50 (assume "50 and under") and over 50, for both un-vaccinated and fully vaccinated populations. Analyze the data, and try to answer the questions posed in the spreadsheet. You'll need some high level domain knowledge around (1) Israel's total population, (2) Who is eligible to receive vaccinations, and (3) What does it mean to be fully vaccinated? Please note any apparent discrepancies that you observe in your analysis.

(1) Create a .CSV file (or optionally, a relational database!) that includes all the information above. You're encouraged to use a "wide" structure similar to how the information appears above, so that you can practice tidying and transformations as described below.

(2) Read the information from your .CSV file into R, and use `tidyr` and `dplyr` as needed to tidy and transform your data.

(3) Perform analysis as described in the spreadsheet and above.

(4) Your code should be in an R Markdown file, posted to rpubs.com, and should include narrative descriptions of your data cleanup work, analysis, and conclusions. Please include in your homework submission:

- *The URL to the .Rmd file in your GitHub repository. and*
- *The URL for your rpubs.com web page.*