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Analyzing Patient Hospital Evaluations

The Centers for Medicare and Medicaid Services recently published a dataset that has patient perception and evaluation of hospitals and hospital staff. What I aimed to do with this project was to analyze how hospital patients perceived the staff in terms of communication skills. I started with the dataset and through subsetting and concating I was able to find the relevant questions I am seeking. I then exported the clean CSV's into Tableau to visualize the data and identify how nurse and doctor communication skills compared to each other.

What I hope to do in the future with this project is analyze more of the many questions that were asked from this survey and attempt to find a correlation between the evaluation scores and the location of the top hospitals throughout the country. One question that I would like to answer is *How does the number of top hospitals that a state has compare to how hospital patients evaluate the communication skills of hospital staff in that state?*

Vizualizations:

https://public.tableau.com/profile/jose.aguirre.mori#!/vizhome/DoctorNurseCommunication/Story1?publish=yes

Code Snippets:

```
In [2]:  #read in patient data
         patients = pd.read_csv("Patient_survey__HCAHPS__-_State.csv")
         patients.columns

Out[2]:  Index(['State', 'HCAHPS Question', 'HCAHPS Measure ID',
                'HCAHPS Answer Description', 'HCAHPS Answer Percent', 'Footnote',
                'Start Date', 'End Date'],
               dtype='object')

In [3]:  #Trim to relevant categories
         patientsrelevant = patients[["State", "HCAHPS Question", "HCAHPS Answer Description", "HCAHPS Answer Percent", "HCAHPS Measure :
         patientsrelevant.head()
```

Out[3]:

	State	HCAHPS Question	HCAHPS Answer Description	HCAHPS Answer Percent	HCAHPS Measure ID
0	AK	Patients who reported that their nurses "Alway...	Nurses "always" communicated well	79	H_COMP_1_A_P
1	AK	Patients who reported that their nurses "Somet...	Nurses "sometimes" or "never" communicated well	4	H_COMP_1_SN_P
2	AK	Patients who reported that their nurses "Usual...	Nurses "usually" communicated well	17	H_COMP_1_U_P
3	AK	Patients who reported that their nurses "Alway...	Nurses "always" treated them with courtesy and...	86	H_NURSE_RESPECT_A_P
4	AK	Patients who reported that their nurses "Somet...	Nurses "sometimes" or "never" treated them wit...	2	H_NURSE_RESPECT_SN_P

```
In [4]:  #Finding percentage of patients that believe nurses always or sometimes/never communicated well
         #Always
         nursecommalways = patientsrelevant.loc[patientsrelevant["HCAHPS Measure ID"]=="H_COMP_1_A_P"]
         nursecommalways = nursecommalways.loc[nursecommalways["HCAHPS Answer Percent"]!="Not Available"]
         pd.to_numeric(nursecommalways["HCAHPS Answer Percent"])
         nursecommalways.sort_values("HCAHPS Answer Percent", ascending = False)
         nursecommalways.head()
         nursecommalways["HCAHPS Answer Percent"].mean()
```

```
In [8]:  #Finding percentage of patients that believe doctors always or sometimes/never communicated well
         #Always
         doccommalways = patientsrelevant.loc[patientsrelevant["HCAHPS Measure ID"]=="H_COMP_2_A_P"]
         doccommalways = doccommalways.loc[doccommalways["HCAHPS Answer Percent"]!="Not Available"]
         pd.to_numeric(doccommalways["HCAHPS Answer Percent"])
         doccommalways.sort_values("HCAHPS Answer Percent", ascending = False)
         doccommalways.head()
         doccommalways["HCAHPS Answer Percent"].mean()

         #Sometimes or Never
         doccommsomenever = patientsrelevant.loc[patientsrelevant["HCAHPS Measure ID"]=="H_COMP_2_SN_P"]
         doccommsomenever = doccommsomenever.loc[doccommsomenever["HCAHPS Answer Percent"]!="Not Available"]
         pd.to_numeric(doccommsomenever["HCAHPS Answer Percent"])
         doccommsomenever.sort_values("HCAHPS Answer Percent", ascending = False)
         doccommsomenever.head()
         doccommsomenever["HCAHPS Answer Percent"].mean()
```

```
In [9]:  #Concat and export
         doccommasn = pd.concat([doccommalways,doccommsomenever])
         doccommasn.to_csv('doctorcommunication.csv', index=False)
```

Out[9]:

	State	HCAHPS Question	HCAHPS Answer Description	HCAHPS Answer Percent	HCAHPS Measure ID
12	AK	Patients who reported that their doctors "Alwa...	Doctors "always" communicated well	80	H_COMP_2_A_P
84	AL	Patients who reported that their doctors "Alwa...	Doctors "always" communicated well	84	H_COMP_2_A_P
156	AR	Patients who reported that their doctors "Alwa	Doctors "always" communicated well	84	H_COMP_2_A_P