

# Hospitals in California



A Data Science Solution for  
ABC Medical Center's expansion

# Introduction

## The backstory



- California's Healthcare Facts:
  - Most populated state
  - **1.9** beds per 1000 people
  - **10%** drop in uninsured
- ABC Medical Center's plan:
  - Expand its facilities into California
  - At Least 2 medical centers in 3 years

# Problem

Why is this analysis needed?

Identify the best suited:

- Counties



- Insurance Contracts



- No. of hospital beds





# Data Science Solution

How can we help?

Building a regression model:

Predict profits given a combination of location, size, insurance contracts and expenses

# Key Elements

What was the process?

Data

- CA's Health & Human services open data portal
- Hospital data from 2010 to 2015
- Dataset contains 10901 rows and 16 columns

Cleaning

- Google sheets

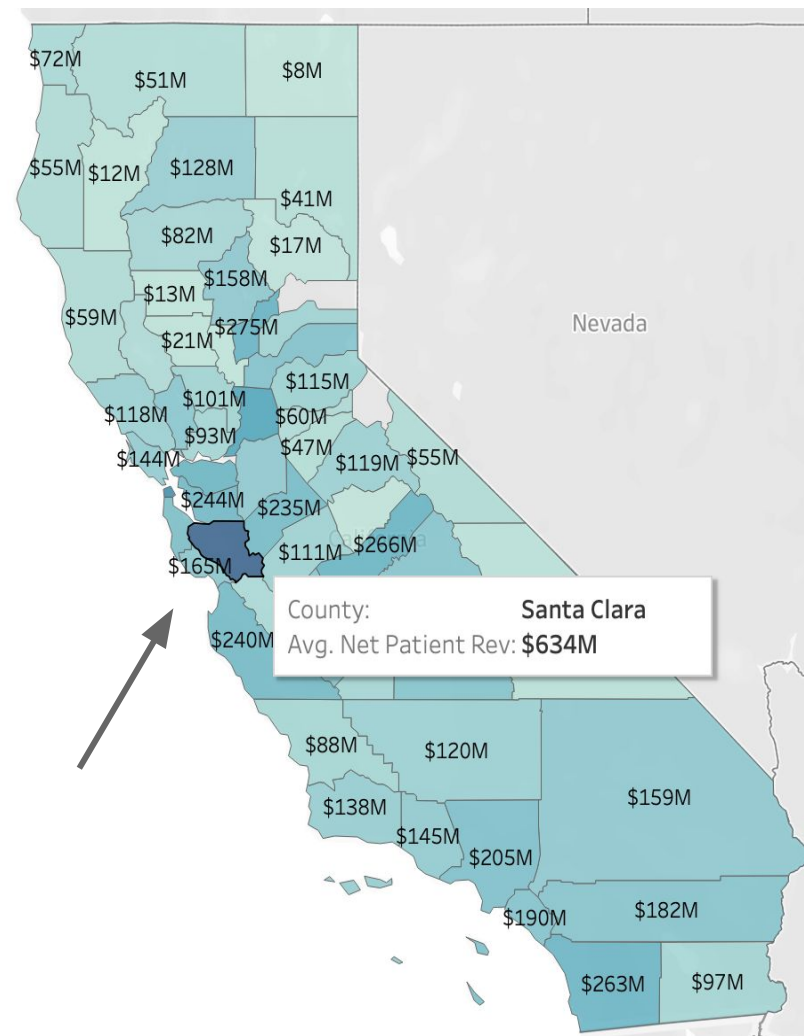
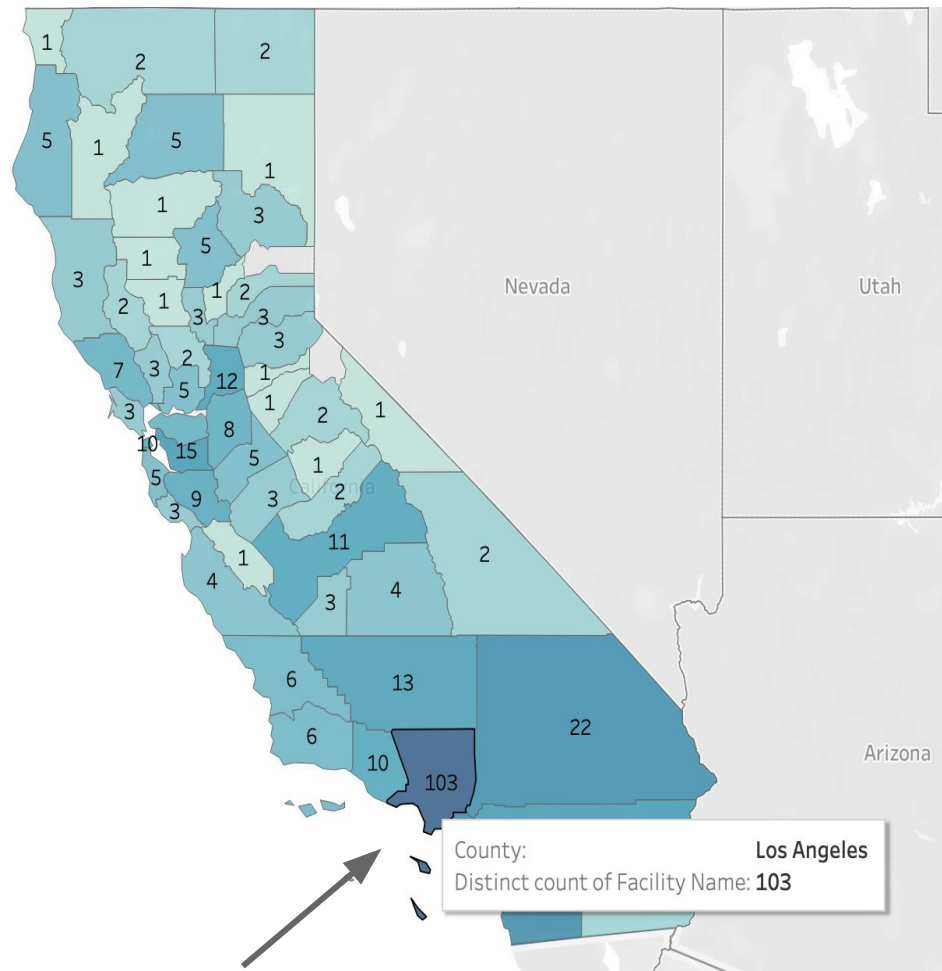
Analysis

- Tableau



# Analysis

## Comparing Hospitals and Revenue per County

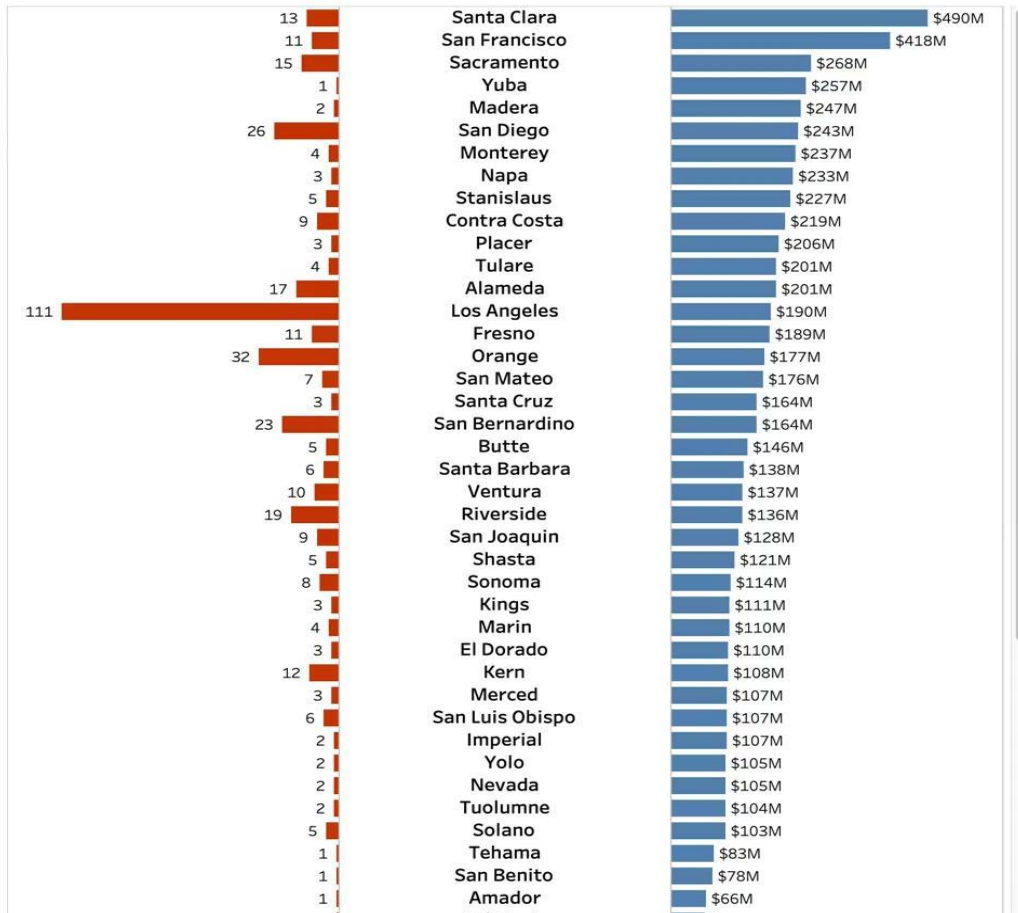


YEAR(Year)

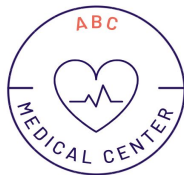
Measure Names

- Avg. Total Net Patie..
- Distinct count of Fac..
- Zero axis

## Comparing Hospitals and Revenue per county







## CALIFORNIA HOSPITALS (2010 TO 2015)

Hospitals per County



BARNES-JENSEN MEDICAL CENTER



# Risks and Assumptions

- Financial burden because of the expansion
- What is the risk if expansion is not profitable?
- Is it better to start with telemedicine?
- ABC Medical center will operate in the same way as medical centers in CA
- Are Californians healthy? So do not need an average of 3 beds per 1000

# Future Work

- Diagnosis data if any speciality hospitals are needed
- Analysis on population by age, social status and gender
- Healthcare laws pertaining to California



# Thank you

AVERAGE of Total Net Patient Rev	Year							
County	2010	2011	2012	2013	2014	2015	Trendline	Change in revenue from 2010 to 2015
Modoc	8.5M	8.5M	9.1M	8.2M	7.6M	13.5M		REVENUE GAIN
Sutter	11.8M	9.1M	11.9M	12.7M	13.6M	14.1M		REVENUE GAIN
Trinity	12.0M	12.5M	12.0M	11.7M	12.2M	15.1M		REVENUE GAIN
Glenn	12.9M	13.3M	13.7M	14.3M	10.6M	16.0M		REVENUE GAIN
Mariposa	13.3M	13.9M	15.7M	15.6M	16.0M	16.1M		REVENUE GAIN
Plumas	17.5M	17.0M	17.3M	15.9M	17.7M	18.1M		REVENUE GAIN
Colusa	20.5M	19.5M	21.0M	19.4M	16.1M	32.8M		REVENUE GAIN
Lassen	41.2M	38.7M	43.1M	37.4M	40.2M	40.7M		REVENUE LOSS
Inyo	31.1M	28.4M	33.0M	40.0M	43.3M	41.0M		REVENUE GAIN
Siskiyou	50.9M	48.7M	51.5M	54.0M	58.9M	61.0M		REVENUE GAIN
Mono	55.4M	58.2M	57.1M	57.3M	55.7M	61.3M		REVENUE GAIN
Calaveras	47.3M	38.8M	48.2M	54.9M	65.0M	61.4M		REVENUE GAIN
Del Norte	71.6M	63.9M	63.2M	63.3M	69.9M	67.5M		REVENUE LOSS
Lake	60.9M	62.4M	64.0M	64.6M	65.7M	75.1M		REVENUE GAIN
Amador	60.3M	65.6M	63.2M	61.0M	72.3M	80.4M		REVENUE GAIN
Mendocino	58.9M	60.5M	61.6M	63.9M	74.5M	82.4M		REVENUE GAIN
Humboldt	55.3M	57.7M	67.2M	66.6M	66.2M	83.7M		REVENUE GAIN
Tehama	82.3M	82.7M	78.1M	81.4M	85.9M	89.7M		REVENUE GAIN
San Benito	72.8M	78.2M	78.7M	82.9M	88.3M	94.1M		REVENUE GAIN

## Appendix 1 - Change in revenue from 2010 to 2015

# Appendix 2

