# Proposal 2 Proposal - Preventable ED Visits

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# Description

We will be trying to create visualizations to reduce “preventable visits” in Emergency Departments within Los Angeles County. Previous research has suggested that nearly 30% of ED visits “…could be managed in physician offices, clinics and urgent care centers” (Weinick, Burns, & Mehro, 2010). From 2010 to now, potential savings have increased from 4 billion in annual spending to over 8 billion a year (Daly, 2019). An essential step to reducing healthcare burdens and benefiting patients includes the strategies using population segmentation and social determinants of health. Since social determinants of health (Artiga & Hinton, 2018) have a wide variety of socioeconomic factors, this project will focus on breadth over depth. We will focus on Income, access to healthy food options, and provider availability (especially as it relates to clinics and urgent care centers). As a future project, it would be interesting to find attributes that could predict at-risk populations within Los Angeles County.

# Data Collection

The main data sources include the following:

1. Los Angles County Open Data which focuses on **geographical boundaries** within LA County (<https://data.lacounty.gov/>)
2. Census data which will focus on **income** and population aggregation within LA County (<https://www.census.gov/data/tables.html>)
3. Los Angeles County Public health which will focus on aggregation of the **difficulty in accessing** **medical care** within LA County (<http://publichealth.lacounty.gov/ha/LACHSDataTopics2018.htm>)
4. 211 LA which will focus on the aggregation of **public or social assistance** within LA County (<https://www.211la.org/resources>)
5. **Hospital** **ED data** maybe LA county discharge data to show burden??
6. **Alternative facilities** (TBD)
7. **Access to quality food** (TBD)

# Visualizations

The main visualization will be a geographical map with the following overlays:

1. Health Districts
2. Income\Population aggregates
3. Hospitals (ED departments)
4. Alternative facilities (i.e. clinics, urgent cares)
5. Positive food alternatives to fast food (or fast-food options to show negative impact)

The secondary visualizations will include benchmarking charts by health district for the following:

1. Social economical and at-risk populations (i.e. difficulty accessing medical care)
2. Chronic conditions
3. Food alternatives or lack there of

Project 3:

1. Need to normalize facilities and ER visits with total population (or other factors)
2. Need to group each area with aggregated clinic and hospital data (from step 1)

Can we use data to classify good areas (with higher clinic visits and less ER visits per population for that area)?

Are their multiple area attributes that need to be looked at? Like do we need to group areas into a low income, med income, high income? Or low Hispanic, med Hispanic, high Hispanic? Or low elderly, med elderly, high elderly? Like what are the attributes that make up a “burden user”

I think according to Jaime’s research, it would be Hispanic, medical as payer, and are over 65.

If we can determine, good areas, can we identify factors that contribute to being good?

The biggest problem: If we predict “bad” areas or if we predict “bad” users, is there anything these areas can do to increase the clinic visits or lower ED visits. Have we found changeable “variables” that can lead to a positive outcome? Beside patient engagement of course!