**INTRODUCTION PART**

**Define a problem of interest (+2)**

The opioid epidemic is still plaguing the United States. According to the CDC, 130 Americans die every day from an opioid overdose [#].

**Pick a question you would like to address relevant to this problem (+2).**

What factors in a community are associated with high opioid usage?

**BLUF: Specify what, specifically, are the constructs that you are studying**

**(+2).**

The constructs that are studied to analyze the question is opioid use, individuals who are in the younger working-age population, individuals who are male, individuals who have a bachelor’s degree or higher, the average median household of the community, and accessibility to health facilities.

**BLUF: Specify how you will measure what you are studying (+2).**

The main construct of opioid use is measured by the number of Emergency Medical Services (EMS) opioid-related calls in each census tract in Tempe, AZ and Cincinnati, OH at specific month and year. The demographic constructs are measured by the percentage of the population that falls in that construct by each census tract. The health facilities are measured by the number of facilities within 2 miles of the census tract centroid.

**BLUF: Specify the logic relating the things that you are measuring. (+2)**

The logic for relating the constructs that are being measured is that the non-demographic constructs either are ways that opioids are introduced or maintained in a community. The demographic features were selected because they showed to be heavily related to drug use based on the literature analyzed [#].

**BLUF: Specify the algorithm or technique that you will use to assess the**

**strength of relationship between these things. (+2)**

The algorithm that is used to assess the strength of the relationship between the constructs is a Pearson correlation as well as a Poisson model.

**BLUF: Tell us why it would matter if that relationship existed. (+2)**

Help public health professionals and policy makers to more efficiently divert resources and improve accessibility of treatment.

**Paragraph form:**

The opioid epidemic is still plaguing the United States. According to the CDC, 130 Americans die every day from an opioid overdose [#]. The new surge of open data helped form the question of what factors in a community are associated with high opioid usage. The constructs that are studied to analyze the question are opioid use, individuals who are in the younger working-age population, individuals who are male, individuals who have a bachelor’s degree or higher, the average median household of the community, and accessibility to health facilities.

The logic for relating the constructs that are being measured is that the non-demographic constructs either are ways that opioids are introduced or maintained in a community. The demographic features were selected because they showed to be heavily related to drug use based on the literature analyzed [#]. The algorithms that are used to assess the strength of the relationship between the constructs is a Pearson correlation as well as a Poisson model. With the results from the selected algorithms the relationship between the constructs could help public health professionals and policy makers to more efficiently divert resources and improve accessibility of treatment.

**Conclusion (needs to be worked by Drew and Maddie after full paper is written)**

- Policy paragraph (like 2-3 sentences)

- If it fails, then we’ll look at PCA for more features

-