

1. What is the question you hope to answer?

- Question: What socio-economic and public health factors contribute to maternal mortality rates in the 194 World Health Organization (WHO) member countries?
- Description: The world health organization focuses on direct causes of maternal mortality rate such as access to clinicians and adolescent birthrates. These direct causes are important factors to understand for intervention. However, these are not the only factors that contribute to maternal death globally. In fact, the United States, which has the most expensive health care system in the world (1), has a relatively high maternal mortality rate when compared to other developed nations. Given the complexity of this problem I would like to investigate socio-economic and environmental factors that correlate to, and potentially contribute to, maternal death. I will also investigate known contributing factors as a baseline (i.e. presence of skilled professional at birth). The following is list of factors that contribute to the overall quality of life and health of women. I hypothesize that these factors will correlate with maternal mortality rate.
 - Presence of skilled healthcare professional
 - Access to contraceptives
 - Access to abortion
 - Age of marriage
 - Adolescent birth rate
 - Education of women
 - Life expectancy
 - Malnutrition
 - Obesity/diabetes
 - Gender development index
 - Human development index
 - Multi-dimensional poverty index

2. What data are you planning to use to answer that question?

- The world health organization has a number of data sets focusing on the maternal mortality rate and several factors that contribute such access to clinicians and adolescent birthrates. The data sets are presented by Country and by year collected. There is an option to download the data in json format. These data sets can be found here:
 - Maternal mortality data by country: <http://apps.who.int/gho/data/node.main.15>
 - Maternal and reproductive health WHO: http://www.who.int/gho/maternal_health/en/
 - Maternal and prenatal health links WHO: http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/en/
- The data for a number of the factors found in question 1. are found as part of the United Nations (UN) data sets. Specifically the data sets related to gender are found here:
 - UN Data: <http://data.un.org/browse.aspx?d=ComTrade>
 - API information for UN Data sets can be found here: <http://data.un.org/Host.aspx?Content=API>

3. What do you know about the data so far?

- The WHO maternal mortality rate data indicates death rates per 100,000 live births for 1990, 2000, and 2015. A quick scan indicates that the data is complete for all of the WHO member states. The data for age of marriage and adolescent birthrates is missing some data and was collected in variable years (2007 – 2012). A number of cleaning activities will be required for each factor studied.

4. Why did you choose this topic?

- In light of the current political climate in Poland (2) and severe cuts to women's health funding in a number of U.S. states (3) it is clear that women's health is not only a developing world problem. The U.S. and specifically Texas have unusually high maternal mortality rates (3). Population studies indicate that Texas' high mortality rate is complex and multifaceted (3). Quantifying the factors that contribute to this problem and developing predictions for interventions could inform the public and encourage policy makers into well-informed action.

Citations

1. Mirror, Mirror on the Wall, 2014 Update: How the U.S. Health Care System Compares Internationally:
<http://www.commonwealthfund.org/publications/fund-reports/2014/jun/mirror-mirror>
2. Polish Women Hold 'Black Monday' Strike to protest proposed abortion ban:
<http://www.npr.org/sections/thetwo-way/2016/10/04/496526099/polish-women-hold-black-monday-strike-to-protest-proposed-abortion-ban>
3. It's not just Texas, maternal death rates are high across the us:
http://www.huffingtonpost.com/entry/pregnancy-related-deaths-are-inexcusably-high-in-the-us_us_57b601d8e4b0b51733a20d56