**Identification of the Dataset**

National Health and Nutrition Examination Survey (NHANES): https://www.cdc.gov/nchs/nhanes/index.htm

**Summary of Variables, Data Types, and Key Statistics**

We will be using the NHANES dataset to create a pediatric blood pressure visualization tool that will help clinicians and patient families identify high blood pressure in children and adolescents. Normal pediatric blood pressure ranges vary based on age, sex, and height, so we will be using these variables in addition to systolic and diastolic blood pressure values. We will also incorporate 50th, 90th, 95th, and 99th percentiles of blood pressure by sex, age, and height to identify normal and abnormal blood pressure values per individual. Overall, this visualization will use 9 different variables (systolic blood pressure, diastolic blood pressure, age, sex, height, and the 4 different percentiles).

**What Kind of Information Can Be Derived Through Exploratory Visualization Analysis**

The visualization will help clinicians determine normal and abnormal pediatric blood pressures and the degree of clinical significance to help with medical decision making. Clinicians will be able to filter the visualization based on age, sex, and height to get a global understanding of normal/abnormal blood pressure ranges, as well as view individual patient results. The visualization of the individual results will also be geared towards patients/caregivers to help in better understanding their blood pressures to empower more ownership of their health.

**Target Audience for the Visualization**

Clinicians and patients

**List of Visualization Tasks**

* Define “normal” ranges based on age, sex, and height
* Define clinically significant abnormal values based on percentiles
* Design a visualization of an individual’s blood pressure that indicates whether it is normal/abnormal
* Design a global visualization of normal/abnormal blood pressures

**References**

1. NHANES - National Health and Nutrition Examination Survey Homepage. Published January 29, 2024. Accessed February 14, 2024. https://www.cdc.gov/nchs/nhanes/index.htm

2. National High Blood Pressure Education Program Working Group on High Blood Pressure in Children and Adolescents. The Fourth Report on the Diagnosis, Evaluation, and Treatment of High Blood Pressure in Children and Adolescents. *Pediatrics*. 2004;114(Supplement\_2):555-576. doi:10.1542/peds.114.S2.555