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Capstone 1 Project Proposal: Predicting Hypertension Based on Modifiable Risk Factors

One in three American adults have high blood pressure, which greatly increases the risk for heart disease and stroke, the first and third leading causes of death in the United States[1]. Untreated, close to 50% of people with untreated hypertension die of ischemic heart disease and nearly 30% die of stroke in the United States.[2] Globally, 1 in 4 men and 1 in 5 women world-wide have hypertension, with a disproportionate amount, two-thirds, of living in low- and middle-income countries.[3]

Given the intense demands on families, communities and healthcare systems in diagnosing and treating this epidemic, the ability to identify predictive factors, particularly preventable factors, could make a significant difference in the quality of for billions of people around the world.

This project will use data from the National Health Interview Survey to create a model for predicting hypertension by examining features that are potentially modifiable, such as education, socialization, metabolic and psychiatric factors for example.

This model could be used by governments to prioritize public health programs and other resources to target preventable predictors of hypertension. Hospitals could use this data to focus on those

features during intake interviews, identifying the opportunity for earlier diagnosis and treatment, as well as education. This data could empower people with a greater understanding of the impact of their choices in these areas, which could lead to a culture shift in attitudes towards lifestyles and behavior, increasing demand for products and services that help them live healthier for longer.

References

1. https://www.cdc.gov/bloodpressure/infographic.htm

2. https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/in-depth/high-blood-pressure/art-20045868

3. https://www.who.int/news-room/fact-sheets/detail/hypertension