Introduction
Blood pressure generated by the heart and blood vessels is necessary to deliver oxygen and nutrients to the body and to remove carbon dioxide and waste products. A low normal arterial blood pressure helps maintain the blood vessels in good health. However, as blood pressure increases, even within the normal range, arteries from the microcirculation to the aorta are damaged. A usual blood pressure of 140/90 mmHg or higher is considered hypertension and is a level where drug treatment is often considered. Increased blood pressure causes strokes, heart attacks, heart and kidney failure as well as other blood vessel and heart diseases. An optimal blood pressure is less than 120/80 mmHg.

Currently, global populations largely eat processed foods, are inactive and increasingly obese and have over 40% of the population over age 25 with hypertension. About 1/3 of hypertension is attributed to obesity, about 1/3 to excess dietary salt, about 20% to lack of physical activity and about 20% to a lack of dietary potassium.

Increased blood pressure is now recognized by the Global Burden of Disease Study as one of the leading risks for both death and disability. In this project, the Global Burden of Disease Study was examined to assess regional and national variation in the disease burden attributed to increased blood pressure to aid awareness of the burden of disease and advocacy efforts.

Methods
This study explores the burden of hypertension at a national, regional, and global level based on the 2013 Global Burden of Disease Study data (Institute for Health Metrics and Evaluation, 2016 University of Washington, http://www.healthdata.org/gbd/data-visualizations, accessed Aug 8 2016). From the website, percentages and number of deaths and disability-adjusted life years (DALYs) were obtained as well as figures of the burden of disease. The areas explored in this study consisted of the major continental regions of the world. These are comprised of North America, South America, Africa, Europe, Asia, the Middle East and Australia. Regions with large numbers of countries, such as Asia and Europe, are divided to allow for easier visualization of the data. Each region has listed national data alphabetically. The website is missing data for certain countries, therefore they are not featured in this publication. The Project was commissioned by the World Hypertension League.

Results
At a global level, the number of DALYs in 2013 attributed to hypertension was 268,128,784 while the number of deaths was 10,363,552. The percentage of DALYs attributed to hypertension was 8.5% while the percentage of deaths was 18.9%. Georgia had the highest national percentage of deaths attributed to hypertension (40.5%). The Ukraine and Bulgaria were also associated with high percentages of deaths attributed to hypertension (40% and 37.9%, respectively). Chad had the lowest national percentage of deaths (3.8%) attributed to hypertension while both Kenya and Mali also experienced low percentages of deaths (4.0% and 4.7%, respectfully). At a global level, Chad experienced the least percentage of DALYs attributed to hypertension (1.3%) while Georgia experienced the greatest percentage of DALYs (23.8%). Kenya, Mali, and Nigeria also experienced low percentages of DALYs (1.5%, 1.7% and 1.7%, respectfully). Bulgaria and Belarus also experienced substantially higher percentages of DALYs (23.6% and 23.2%, respectfully).

In North America, Canada had the lowest percentage of deaths attributed to hypertension (13.1%) while the United States had a slightly higher percentage of deaths (15.7%). Canada experienced the lowest percentage of DALYs attributed to hypertension (6.5%) while the United States had a slightly higher percentage of DALYs (8.1%).

In South America, Peru had the lowest percentage of deaths attributed to hypertension (10.2%) while Suriname had the highest percentage of deaths (22.7%). Peru faced the lowest percentage of DALYs attributed to hypertension (4.2%) while Suriname experienced the greatest percentage of DALYs (11.0%).

In Africa, Chad suffered the lowest percentage of deaths attributed to hypertension (3.8%). Libya suffered the highest percentage of deaths (29.2%). Chad experienced the lowest percentage of DALYs attributed to hypertension (1.3%). Mauritius faced the highest percentage of DALYs (15.9%).

In Europe, the United Kingdom had the lowest percentage of deaths attributed to hypertension (13.9%). Ukraine experienced a substantially greater percentage of deaths (40.0%). Switzerland experienced the lowest percentage of DALYs attributed to hypertension (7.2%) while Bulgaria had the highest percentage of DALYs (23.6%).

In the Middle East, Qatar had the lowest percentage of deaths attributed to hypertension (12.9%). Lebanon suffered the greatest percentage of deaths (25.9%). Qatar had the lowest percentage of DALYs attributed to hypertension (3.5%) while Lebanon experienced the highest (10.9%).

In Asia, Thailand experienced the lowest percentage of deaths associated with hypertension (14.0%). Georgia suffered the greatest percentage of deaths (40.5%). Timor-Leste experienced the lowest percentage of DALYs attributed to hypertension (5.8%). Georgia experienced the highest percentage of DALYs, (23.8%).

In Australasia, Australia experienced the lowest percentage of deaths attributed to hypertension (17.3%). New Zealand suffered a slightly greater percentage of deaths (18.4%). Australia experienced the lowest percentage of DALYs attributed to hypertension (7.0%) while New Zealand was higher (8.3%).

Conclusion and Summary
This analysis is intended to aid countries improve awareness of hypertension and advocate for prevention and control. The project highlights hypertension as one of the most important attributable risks for death and disability. Although there are a few countries where the burden of hypertension is relatively low, in nearly all countries hypertension is a major risk factor and even is attributed to 40% or more deaths in several countries. Clearly, substantive improvements in prevention and control of hypertension need to occur if the disease burden is to be reduced. Improving awareness of hypertension as a health risk is an important first step to advocate for resources to prevent and control hypertension.