

Our Health

Examining Topics from 'Our Health is in Our Hands'

Hypertension and Other Cardiovascular Events in Ingham County



February is American Heart Month!

Often referred to as the silent killer because it exhibits no symptoms, hypertension or high blood pressure is estimated to afflict one-third of adults in the United States. Hypertension is defined as having a systolic pressure (pressure during a heart beat) greater than or equal to 140 mmHg or a diastolic pressure (pressure between heart beats) greater than or equal to 90 mmHg (Table 1). Hypertension is a result of reduced elasticity of the arteries. As the arteries harden, the heart must work harder to pump blood through the body, putting the heart and the arteries at risk for injury. In this issue of 'Our Health' we document the prevalence of hypertension, and cardiovascular deaths in Ingham County, and discuss the prevention of hypertension.

Hypertension Prevalence

The national goal for the prevalence of hypertension is 26.9% of the adult population by the year 2020.¹ Current Ingham County statistics, from the 2008-2010 Capital Area Behavioral Risk Factor & Social Capital Survey (CA BRF&SC survey), shows that the overall prevalence of high blood pressure was slightly above that target: 30.0% (95%CI: 23.6% - 36.4%). Among the different racial/ethnic groups represented in the county, the percentage of those having hypertension ranged from 21.8% (95%CI: 5.8% - 37.8%) among Hispanics to 54.4% (95%CI: 6.7% - 85.3%) among Native Americans (Figure 1). Interestingly, the prevalence of hypertension among non-Hispanic Black adults is slightly lower than that of non-Hispanic White residents: 26.0% (95% CI: 20.0% - 31.9%) and 28.3% (95%CI: 24.3% - 32.4%). Additional analysis revealed that average age of non-Hispanic Black residents was lower than that of non-Hispanic White residents in the county: 38 years and 45 years, respectively. Since age is one of many risk markers associated with hypertension, the deviation of the local statistics from what is known from other studies may be a result of the relative age difference between racial/ethnic groups in Ingham County. The distribution of the condition also varies along geo-political boundaries. Residents in the out-county area (all of Ingham County not in the city of Lansing) had a prevalence of hypertension higher than city residents: 32.1% (95%CI: 19.0% - 45.2%) compared to 28.3% (95%CI: 23.8% - 32.9%) (Figure 2). Within the city of Lansing, the prevalence of hypertension was fairly consistent, ranging only from 28.0% (95%CI: 20.3% - 35.7%) in the northwest portion of the city to 28.6% (95%CI: 19.1% - 38.2%) on the east side of the city (Figure 2).

Hypertension and Mortality

The relationship between hypertension and risk of a cardiovascular event (e.g. heart attack, stroke, aneurysm) is well established and independent of other risk factors. In 2008, heart disease was the third leading cause of hospitalizations in Ingham County. Hypertension is also strongly associated with shortened life ex-

Table 1. Blood pressure thresholds.

Category	Normal blood pressure	Pre-hypertension	Hypertension
Systolic pressure	less than 120 mmHg	120-139 mmHg	140 mmHg or higher
Diastolic pressure	less than 80mmHg	80-89 mmHg	90 mmHg or higher

Figure 1. Prevalence of self-reported hypertension among Ingham County adults by race/ethnicity, 2008-2010 Capital Area BRF&SC survey

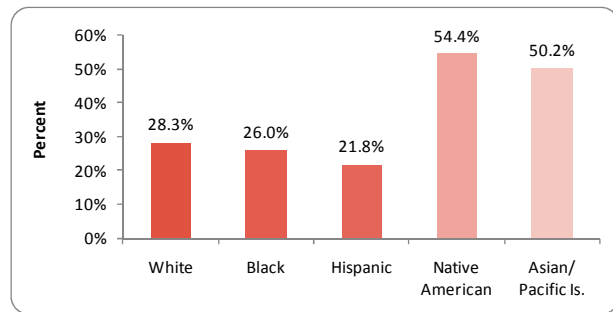
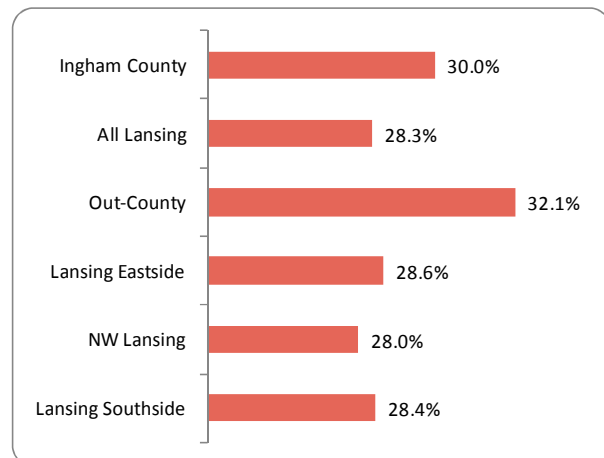


Figure 2. Prevalence of hypertension by geo-political area, 2008-2010 Capital Area BRF&SC survey



pectancy. In one analysis, based on data from the Framingham Heart Study, the life expectancy among men with normal blood pressure was approximately five years longer than men with hypertension.² The difference among hypertensive women and women with normal blood pressure was nearly ten years.²

Heart disease and stroke were the first and fourth leading cause of death in 2008, and caused the death of nearly 600 persons in Ingham County. Nevertheless, the trend in deaths related to heart disease is improving (Figure 3). In 2000, the death rate due to heart disease was 262.3 deaths per 100,000 residents. By 2008, the rate had declined to 197.9 deaths per 100,000 residents.

Preventing Hypertension

Hypertension can be controlled and, if discovered early enough and treated, is reversible. Hypertension can be managed with a variety of medications, but it also responds well to behavioral changes. Table 2 shows the estimated reduction in systolic blood pressure for a variety of behavioral changes. Weight reduction and diet modification can lead to systolic blood pressure reductions of at least 8 mmHg. Since every individual is unique, persons who suffer from hypertension are encouraged to explore treatment options with their primary care provider.

Bibliography

1. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.
2. Oscar H. Franco, Anna Peeters, Luc Bonneux, and Chris de Laet Blood Pressure in Adulthood and Life Expectancy With Cardiovascular Disease in Men and Women: Life Course Analysis Hypertension 46: 280-286.
3. Aram V. Chobanian, George L. Bakris, Henry R. Black, William C.ushman, Lee A. Green, Joseph L. Izzo, Jr, Daniel W. Jones, Barry J. Materson, Suzanne Oparil, Jackson T. Wright, Jr, Edward J. Roccella, and the National High Blood Pressure Education Program Coordinating Committee Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure Hypertension 42: 1206-1252.

Published in 2004, **Our Health is in Our Hands**, is a report of the health status of the residents of Ingham County. Not only does it document the traditional topics and behaviors related to health (i.e. physical activity, substance abuse, tobacco use, etc.), but it includes a review of the social determinants of health. Social determinants of health are factors in the social environment that contribute to or detract from the health of individuals and communities. Examples of social determinants of health, discussed in *Our Health is in Our Hands* are social connection, population shifts, and environmental quality. Copies of this document are available at <http://hd.ingham.org/publications.aspx>.

The **Capital Area Behavioral Risk Factor & Social Capital Survey** is a telephone health survey of households that collects information on health behaviors, preventive health practices, health care access, social cohesion and interactions. Modeled after the Michigan Behavioral Risk Factor Survey and the national Behavioral Risk Factor Surveillance System, information gathered from this survey is used to identify emerging health obstacles, monitor health objectives, and develop and evaluate public health policies/programs in Ingham and surrounding counties in the Capital Area.

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Figure 3. Trend in heart disease death rate among Ingham County residents, 2000-2008 Ingham County resident Death File



Table 2. The effect of behavioral modifications on systolic blood pressure.³

Modification	Recommendation	Approximate Systolic Blood Pressure Reduction
Weight reduction	Maintain normal body weight (body mass index 18.5–24.9 kg/m ²).	5–20 mmHg/ 10 kg weight loss
Adopt the 'Dietary Approaches to Stop Hypertension' (DASH) eating plan	Consume a diet rich in fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat.	8–14 mmHg
Dietary sodium reduction	Reduce dietary sodium intake to no more than 2.4 g sodium or 6 g sodium chloride.	2–8 mmHg
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 minutes per day, most days of the week).	4–9 mmHg
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks per day (e.g., 24 oz beer, 10 oz wine, or 3 oz 80-proof whiskey) in most men and to no more than 1 drink per day in women and lighter weight persons.	2–4 mmHg

Our new data is here!

This edition features statistics based on data collected from the 2008-2010 Capital Area Behavioral Risk Factor & Social Capital Survey.

COMING SOON!

The 2008-2010 Capital Area BRFS report is scheduled to be released in March. The report will feature statistics on various health and behavioral indicators for the Capital Area, Ingham County, and local areas within the county.

