A Preview

SHAPE 2002

Survey of the Health of Adults, the Population, and the Environment
SHAPE 2002: A Preview

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How healthy are Hennepin County’s residents? How does their health compare with others? Are they getting healthier? These questions are the focus of the Survey of the Health of Adults, the Population and the Environment (SHAPE) 2002, conducted by the Hennepin County Community Health Department in collaboration with the Minneapolis Department of Health and Family Support and the Bloomington Division of Public Health.

SHAPE 2002 was designed to report on the health of six racial and ethnic groups: American Indians, Southeast Asians, Blacks/African Americans (focusing both on U.S.-born and African-born groups), Hispanics/Latinos and Whites. In addition to English, interviews were conducted in Spanish, Somali, Hmong and Vietnamese. Adults (aged 18 and over) were interviewed between January and August 2002. Of the 9,959 survey respondents, 2,794 respondents were people of color.

This Preview is the first in a series of SHAPE 2002 publications reporting on the survey’s results. In this report, we share some early findings showcasing different ways the data can be used to support local health planning and policy development.

Preview Findings

- Between 1998 and 2002, smoking rates among 18-24 year olds dropped from 36.5% in 1998 to 23% in 2002 – a 37% decrease. In 2002, four out of five Hennepin adults (81.5%) do not smoke.
- While overall preventive screening rates for blood cholesterol, cervical cancer and prostate cancer are relatively high in Hennepin County, differences exist across racial and ethnic groups. Factors underlying these differences include health insurance coverage and household income.
- Hennepin County residents who have been uninsured at some point in the past year are two times less likely to have had a blood cholesterol screening in the past five years than those who have been insured all year.
- Women who have a regular source of care are three times more likely to have had a Pap test within the past three years than women who do not have a regular source of care.
- The U.S. Surgeon General recommends that people maintain a healthy body weight, consume five or more fruits and vegetables per day, get 30 or more minutes of moderate physical activity at least five times a week and not smoke. The average Hennepin County adult practices only two of these recommendations.
- Only 5.4% of county adults practice all four healthy lifestyle characteristics, while 6.3% practice none. County adults who are overweight, eat poorly, smoke and are physically inactive are 22 times more likely to report their health status as poor compared to residents who follow all four recommendations.
- Residents in communities with low levels of community support and high levels of economic distress and perceived discrimination are more likely to report their health as fair or poor than are residents in communities with less economic distress and discrimination and more community support.
Introduction:
SHAPE 2002

The Survey of the Health of Adults, the Population and the Environment (SHAPE) is an important health surveillance project that monitors the health of adults in Hennepin County. The project uses a holistic perspective – taking a comprehensive look at the health status, behaviors and health care practices of residents as well as other social and environmental factors that influence their health. First conducted in 1998, the survey’s findings were welcomed by community organizations and policy-makers in the planning of local health initiatives.1 The survey was conducted a second time in 2002.

SHAPE 2002

In 2002, the Hennepin County Community Health Department, in collaboration with the Minneapolis Department of Health and Family Support and Bloomington Division of Public Health, conducted the second SHAPE survey. Data were collected through interviews conducted by the Survey Research Center at the Division of Health Services Research and Policy in the School of Public Health at the University of Minnesota.

The SHAPE 2002 survey results build on the information collected in the first survey, identifying health changes where appropriate and maintaining the project’s countywide and community-level focus. The SHAPE 2002 data will enable local-level analyses of key health indicators, providing public health officials and policy-makers an opportunity to identify emerging issues. Officials can also begin to evaluate the effectiveness of recent population health initiatives. Population health indicators are tracked on a local level to:

- Determine if progress is being made toward meeting health objectives
- Identify health disparities
- Monitor the impacts of policy changes and programmatic initiatives
- Garner support for healthy public policies
- Allocate resources based on need

New Racial/Ethnic Data

Another important objective of the SHAPE 2002 survey is to broaden the definition of “community” to include racial and ethnic communities. To provide statistically reliable survey results for different populations of color, a large number of surveys needed to be completed within each community. This was accomplished by over-sampling neighborhoods
SHAPE 2002: A PREVIEW

Introduction: SHAPE 2002

The survey was designed and implemented to report on six racial and ethnic groups: American Indians, Southeast Asians, Blacks/African Americans (focusing both on U.S.-born and African-born groups), Hispanic/Latinos and Whites. The 2002 survey findings provide a detailed baseline of local racial and ethnic health disparities.

Culturally appropriate questions and interview methods were used in the 2002 survey to support the project’s expanded focus. Members from the various racial and ethnic communities were actively involved in the project’s development, implementation and analysis. In-person interviews were conducted to supplement the telephone surveys. In addition to English, interviews were conducted in four other languages – Spanish, Somali, Hmong and Vietnamese. Of the 9,959 survey respondents, 2,794 respondents were people of color.

What’s New in 2002

- The SHAPE 2002 survey includes information on overall health status, including physical and mental health, chronic illness and disability, but adds new follow-up questions for several chronic conditions, including diabetes.
- The 2002 survey asks respondents about their health habits, use of alcohol and tobacco, exercise and nutrition. Young adults are asked new questions about sexual health behaviors. A new alcohol-related community opinion question is included.
- The 2002 survey asks about people’s insurance status, health care use and barriers to care. New questions focus on culturally specific remedies and treatments and on men’s health, including screening for prostate cancer.
- The 2002 survey investigates a number of economic, social and environmental factors that adversely affect health, including poverty, discrimination and isolation as well as positive influences, such as social support.

2002 Preview

This Preview is the first in a series of SHAPE publications reporting the results of the 2002 survey. Other reports will include more detailed analyses of the topics touched on in this report, a geographic data book, a racial and ethnic data book, and in-depth reports on additional topics. For more information about this exciting project and access to related on-line documents, see www.co.hennepin.mn.us/commhlth/reports/shape.htm.

In each section of this report, we will share some early findings from the 2002 survey and showcase different ways the data can be used to support local health planning, programming and policy development. The findings in this report are preliminary; more analysis is needed to fully understand and present the survey’s results.

In the section:

- Overall Health: An Assessment, we compare the overall health of the county population to the city, suburban, state and nation. We find the health of adults in Hennepin County is relatively good, overall.
- The Tobacco Endowment: An Evaluation Case Study, we look at the sudden and significant decrease in smoking rates among young adults and speculate on the cause of this population change.
- Preventive Screening: Health Care Disparities, we look beneath local racial and ethnic screening disparities to explore underlying issues of inconsistent health insurance access and differing levels of socioeconomic status.
- Healthy Behavior: 1998 – 2002 Comparisons, we examine differences between the findings from the 1998 and 2002 SHAPE surveys and analyze the cumulative effect of lifestyle choices on health.
- Determinants of Health: A Geographic Analysis, we map the differences in self-reported health status found across the county’s geographic regions against other social factors, such as economic distress, discrimination and community support, to underscore the influence of these indirect factors on health.
- Appendix: Survey Methodology, we summarize the details of the survey’s design and implementation.
Overall Health: An Assessment

Introduction
Two questions arise when examining the health status of Hennepin County residents: How are we doing? How do we compare with others? SHAPE 2002 is uniquely positioned to answer these questions.

Conventional wisdom says that we have nothing without our health. We feel healthy when we are not suffering from illnesses or injuries and when we have the energy to do what needs to get done every day. The World Health Organization defines health as “a state of complete physical, social, and mental well-being – not merely the absence of disease or infirmity.” The Institute of Medicine defines health as “a state of well-being and the capability to function in the face of changing circumstances.” In these definitions, mental health and physical health are inextricably intertwined and together comprise an overall state of health.

These definitions of health are built on the premise that health is essential to our sense of well-being — our health-related quality of life. Quality of life reflects a general sense of happiness and satisfaction with our lives and environment. Health-related quality of life reflects our personal sense of our physical and mental health and our ability to react to factors within our physical and social environment.

The two overarching public health goals for the nation, called “Healthy People 2010 objectives,” focus attention on this concept of health-related quality of life. These two national public health goals are to:

1. Increase quality and years of healthy life
2. Eliminate health disparities

SHAPE 2002 Measures
Because SHAPE 2002 selected standard measures recommended by the Centers for Disease Control and Prevention, we can compare ourselves to others at the state and national levels. We can also determine how closely we are meeting the nation’s 2010 public health objectives. These measures of health-related quality of life are predictors of morbidity and mortality as well as indicators of service needs and intervention outcomes.
SHAPE 2002 uses an integrated set of questions about recent health status and activity limitations to measure health-related quality of life. Individuals were asked to rate themselves in four areas:

1. Self-rated health status on a scale ranging from excellent to poor
2. Number of days during the past 30 days in which physical health – including physical illness and injury – was not good
3. Number of days during the past 30 days in which mental health – including stress, depression and problems with emotions – was not good
4. Number of days during the past 30 days for which poor physical or mental health kept people from doing their usual activities such as self-care, work or recreation

The total number of “unhealthy days” is calculated by adding together a person’s responses to questions about physically and mentally unhealthy days.

Overall Health

Overall, Hennepin County adults enjoy better physical and mental health than other adults in the nation. When Hennepin County adults were asked to rate their health status, nine out of ten (90.6%) reported their health to be good, very good or excellent. Only 9.4% of county adults reported in 2002 that their health was fair or poor. This rate is significantly lower than the rate for the nation where 15.5% reported poor or fair health, and very close to the rate for the state where 9.8% reported poor or fair health (Figure 1).6,7

When overall health status was assessed by unhealthy days, county adults reported significantly fewer days of poor physical health during the previous 30 days than their peers in the nation, on average (2.5 vs. 3.5 days).6 County adults also reported significantly fewer average days of poor mental health during the previous 30 days than their national peers (2.0 vs. 3.4 days).7

The overall health status of county residents is closely linked to social factors in their environment.

- Health status varies by geographic residence. Residents of Minneapolis reported poorer health than their suburban counterparts. Thirteen percent of adults from Minneapolis reported that their health was poor or fair, a rate that is significantly higher than that for adults from suburban Hennepin County (7.3%) (Figure 1). Compared to suburban adults, Minneapolis residents also reported a significantly higher average number of days that their physical and mental health were not good (2.3 vs. 2.9 for physical health; 1.7 vs. 2.5 for mental health).
Overall health status is significantly related to household income – the higher the income, the more favorable the health status that residents report (Figure 2). This relationship is even more obvious among residents of Minneapolis than among residents from suburban Hennepin County.

Individual characteristics, such as age and gender, are also significantly related to residents' overall health status.

Female residents reported significantly poorer overall health status, on average, than male residents did (2.9 vs. 2.0 days of poor physical health, 2.4 vs. 1.6 days of poor mental health during the previous 30 days).

Older county residents tend to have better mental health, but have poorer physical health than their younger counterparts (Figure 3).

There was no statistically significant change in the report of fair or poor health among county adults between 1998 and 2002. In SHAPE 1998, 8.0% of county adults rated their health as fair or poor. Although this appears lower than the rate reported in 2002 (9.4%), the difference in rates is not statistically significant.

**Conclusion**

Any future improvements in the overall health status and health-related quality of life for Hennepin County residents will require concerted efforts from both individuals – to improve their health behaviors, and communities – to provide environmental supports that will sustain these behavioral changes. Such improvements can be achieved by promoting healthy lifestyles, reducing exposure to health risks, providing better access to health care and improving the social conditions in which people can be healthy.

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**Figure 2.** Percentage of Adults Who Self-reported Health as Poor or Fair by Household Income as a Percentage of Federal Poverty Level Minneapolis vs. Suburban Hennepin County 2002

**Figure 3.** Average Unhealthy Days-Not Good Physical Health Days and Not Good Mental Health Days by Age, Hennepin County 2002
Tobacco Endowment: An Evaluation Case Study

SHAPE data can be used to examine the effect of programs and policies at the local level. Some of these policies and programs are controversial; evaluation data lend a valuable voice to the public debate. Tobacco use is one such issue. The SHAPE 2002 survey provides important data to help evaluate the effectiveness of the tobacco endowment in Hennepin County.

Tobacco use is the leading cause of preventable death in the United States. Each year, the number of deaths in the U.S. caused by tobacco use results in more than 5 million years of potential life lost. Adult male and female smokers lost an average of 13.2 and 14.5 years of life, respectively, because they smoked. In Minnesota, an estimated 5,600 deaths each year result from smoking. This fact alone makes tobacco use a significant public health issue. However, tobacco use is also a significant social, economic, emotional and political issue. Smoking-related illnesses cost the nation $157 billion annually. On average, each Minnesota household (regardless of whether anyone in the household smokes) pays $557 per year to cover the cost of state and federal tobacco-related expenditures.

The U.S. Surgeon General recommends a number of strategies for preventing and reducing tobacco use, including:

- School-based health education programs and expanded efforts to make use of the influence of parents, the mass media and other community programs
- Programs to help people quit smoking
- Regulation including product monitoring, advertising and promotion, clean indoor air oversight, and limiting minors’ access to tobacco
- Economic interventions, such as raising tobacco excise taxes

Although researchers have established a set of best practices for tobacco prevention and cessation, there is still considerable debate in the public arena regarding the effectiveness and appropriateness of these practices.

Much of this public debate in Minnesota has centered on Minnesota’s tobacco endowment. In 1998, the State of Minnesota and Blue Cross Blue Shield of Minnesota reached a settlement with the tobacco industry.
The state’s share of the settlement was an estimated $6.1 billion to be received over 25 years.

In 2000, the state began funding statewide teen tobacco prevention activities as well as programs specific to Hennepin County and other local communities. Significant decreases in teen smoking were soon seen. In Hennepin County, the smoking rate for 12th graders dropped from 38.7% in 1998 to 29.4% in 2001. Ninth graders saw an even steeper decline from 25.8% in 1998 to 15.2% in 2001.12 These decreases clearly reflected the impact of the Minnesota tobacco endowment’s prevention programs.

By 2002, these teens had become young adults. SHAPE 2002 findings for this age group show an even more dramatic result: smoking rates among 18-24 year olds dropped from 36.5% in 1998 to 23.0% in 2002—a 37% decrease (Figure 4). No other age group showed a decrease of this magnitude. Such a dramatic decrease may be due to the sustained effect of the comprehensive array of interventions targeting young people funded by Minnesota’s tobacco endowment.

Decreases in self-reported smoking rates should be reflected in decreases in the actual number of cigarettes sold. Although cigarette sales have been dropping steadily in Minnesota since 1997, the largest drop occurred in fiscal year 2001 when 353.6 million packs of cigarettes were sold, a decrease of 3%. This finding corroborates the reports of teens and young adults that fewer of them are smoking.

Although the significantly decreased smoking rate among young adults may very well be attributed to a sustained impact of health promotion initiatives funded through Minnesota’s tobacco endowment, we cannot say definitively that the endowment alone is responsible for this outcome.

Nonetheless, these SHAPE 2002 findings raise some interesting questions for policy-makers. How direct and strong is the sustained impact of teen tobacco prevention programs into young adult years? How do we weigh the short-term financial costs of prevention programs against the long-term benefits of potential years of life gained?

Current Smoking Rates Among Adults by Age, 1998 and 2002 Hennepin County

* Difference in rates between 1998 and 2002 within the same age group is statistically significant.
1 Current smokers are defined as: Respondents who described themselves as smoking now in SHAPE 1998; and are defined as respondents who reported smoking ≥100 cigarettes and who reported smoking every day or some days now in SHAPE 2002.
Preventive service utilization remains an important quality of care indicator, an effective method for reducing the burden of many chronic diseases and related mortality, and an important tool for improving the quality of life. People who receive one form of preventive care are more likely to access and use additional preventive care services; they are also less likely to engage in risky behavior than those who do not use preventive screening services.

National studies have shown wide racial and ethnic disparities in accessing and utilizing health care services, including preventive services. Such disparities are the interaction of complex individual, structural and socio-environmental factors. Eliminating these disparities is a public health priority which requires an understanding of both the nature and extent of these disparities and of their contributing factors.

Preventive screening rates are good proxy measures for health care utilization. Findings from the SHAPE 2002 survey show that although overall screening rates are relatively high in Hennepin County, differences in screening rates exist across racial and ethnic groups. Further investigation reveals that factors underlying these differences involve health insurance coverage and socioeconomic status, including household income and education.

The SHAPE 2002 survey provides an important source of local data on preventive service utilization. It provides one of the only data sources available to:

- Monitor preventive health care utilization by Hennepin County residents
- Document preventive care disparities among racial and ethnic groups
- Examine the factors associated with these disparities

The SHAPE 2002 survey gathered data on a broad range of preventive services. In this preview report several services are highlighted: high blood cholesterol screening, Pap test for...
cervical cancer screening, and prostate cancer screening and counseling.

**High Blood Cholesterol Screening**

High blood cholesterol is a major modifiable risk factor for heart disease, a leading cause of death in the U.S. Early detection and modification of high blood cholesterol significantly reduces the risk of heart attacks and heart attack deaths. It is recommended that all adults aged 20 and older have their fasting blood lipoprotein profile checked every five years. The national Healthy People 2010 objective is to have 80% of adults having their blood cholesterol checked within the past five years.

The SHAPE 2002 data show that 75.6% of county adults aged 18 and older had their blood cholesterol checked during the previous five years, a rate that is very close to the national 2010 objective of 80%. Eight out of ten (80.4%) county adults have had their blood cholesterol checked at least once, a rate that is higher than the rate for the state (64.1%) and for the nation (73.6%) in 1999.

The time-appropriate blood cholesterol screening rate (having blood cholesterol checked during the previous 5 years) varies across racial and ethnic groups. The rate is highest for Whites (78.6%) and U.S.-born Blacks (76.1%). Only a little over a third (36.6%) of African-born Blacks have had time-appropriate blood cholesterol screening, and less than half of Hispanics/Latinos (44.7%) have done so. The rate for Southeast Asians is 58.6%. These rates are significantly lower than the rate for Whites (Figure 5).

Because many racial and ethnic health disparities result from the interaction of complex individual, structural and socio-environmental factors, it is important to understand the factors behind the racial and ethnic disparities we observed here. We conducted further statistical analysis that controlled for differences in resident characteristics across racial and ethnic groups. This analysis revealed that these racial and ethnic disparities are largely attributable to disparities in people’s access to health care and in their socioeconomic status. After considering these factors, we find that Hennepin County residents who have been uninsured at some point in the past year are two times less likely to have had time-appropriate blood cholesterol screening than those who have been insured all year.

Educational attainment is another factor that is significantly related to time-appropriate blood cholesterol screening. Compared to residents who are college graduates or higher, residents with less education are 1.5 to 2.5 times less likely to have had time-appropriate blood cholesterol screening.
Pap Test for Cervical Cancer Screening

Cervical cancer is one of the leading causes of cancer deaths among women in Hennepin County. Cervical cancer mortality in Hennepin County is disproportionately higher among women of Asian and Pacific Islander descent (8 deaths per 100,000), Black/African American women (6 per 100,000), and American Indian women (4 per 100,000); the comparable mortality rate for White women is 2 deaths per 100,000.20

Using the Pap test for cervical cancer screening results in the detection of both cancerous and pre-cancerous lesions. Nationwide, the incidence of invasive cervical cancer has decreased significantly over the last 40 years, in large part due to the screening and treatment of pre-cancerous cervical lesions.21 Women should begin getting a routine Pap test with the onset of sexual activity or at age 18, whichever is sooner.22 The national Healthy People 2010 objective is to have 90% of women having a Pap test within the past 3 years.19

The SHAPE 2002 data show that 86.6% of county women aged 18 and older have had a Pap test during the past 3 years. This rate is very close to the national 2010 objective. The rate is not significantly different than the 1998 rate for Hennepin County (85.5%), and is very close to the 2000 rates for the state (86.0%) and the nation (86.8%).19

Although Hennepin County’s Pap test rate within the past 3 years is encouraging, the good news is not shared across racial and ethnic groups. White women and Black women born in the U.S. reported the highest Pap test rates (89.6% and 90.9%, respectively). Just over half of African-born Black women (52.9%) and about two-thirds (67.9%) of Southeast Asian women have had a Pap test during the past 3 years. These rates are significantly lower than the rate for White women (Figure 6).

After adjusting for socio-demographic factors and factors related to health care access, the disparities in Pap test rates across racial and ethnic groups are no longer statistically significant. Rather, household income, having a regular source of care and age are the most significant factors associated with Pap test rates. The survey found that:

- The higher the woman’s household income, the higher the likelihood that she would have had a Pap test within the past 3 years.
- Women who have a regular source of care are about 3 times more likely to have had a Pap test during the past 3 years than women who do not have a regular source of care.
- Women aged 65 and older are 6 times less likely to have had a Pap test within the past 3 years than women who are slightly younger (aged 55-64).
Prostate Cancer Screening and Counseling

Prostate cancer is the most common type of cancer and the second most common cause of cancer-related deaths among U.S. men. Prostate cancer affects one out of six men, and is more common among men who are older, African American, or who have a father or brother with prostate cancer. In Hennepin County, the prostate cancer mortality rate among Black/African American men is 2 to 3 times higher than among White men.

Early screening tools such as prostate-specific antigen (PSA) tests and digital rectal examinations (DRE) are widely available and can detect prostate cancer early. However, prostate cancer often grows slowly; the affected individual may not feel any symptoms until late in the progression of the disease.

Medical experts have not reached consensus on the timing and necessity of routine screening for prostate cancer. Continued debate stems from the lack of evidence showing that finding and treating prostate cancer early will do less harm than good. However, medical experts agree that men need balanced information on the advantages and disadvantages of prostate cancer screening in order to help them make more informed preventive screening decisions.

The American Cancer Society recommends that men aged 50 and older (aged 45 and older if high-risk – African American or having a father or brother with prostate cancer) consider having an annual PSA blood test or DRE. They are also advised to consult their physician about the benefits of prostate cancer screening.

In SHAPE 2002, male residents aged 40 and older of Hennepin County were asked if they had ever had prostate cancer screening, either through a PSA test or a DRE, and if their doctors had ever talked to them about prostate cancer screening. The survey found that:

- In Hennepin County, about 8 out of 10 men aged 50 and older (81.8%) have had some form of prostate cancer screening (a PSA test or a DRE). The rate of prostate cancer screening among U.S.-born Black men is 75.4% for men aged 50 and older; the rate is 72.7% for those aged 45 and older.
- Almost 9 out of 10 men in Hennepin County aged 50 and older (88.4%) have had some form of prostate screening or counseling. The rate among U.S.-born Blacks is 81.4% for men aged 50 and older; the rate is 81.7% for those aged 45 and older.

We are unable to provide meaningful prostate cancer screening rates among men aged 50 and older for other racial and ethnic groups due to the small numbers of respondents.
Preventive Screening: Health Care Disparities

To compare the combined rate of prostate cancer screening or counseling across racial and ethnic groups, we included in the analysis all men aged 40 and older (Figure 7). We found that the combined screening or counseling rates are highest among U.S.-born Black and White men (79.1% and 76.3%, respectively). The screening or counseling rates are lower among African-born Blacks (58.7%), Southeast Asians (61.5%) and Hispanics/Latinos (51.6%). However, only the difference in rates between Hispanic/Latino and White men was found to be statistically significant.

Black/African American men, who are at a higher risk of prostate cancer, were found to have no higher rate of prostate cancer screening or counseling than other racial/ethnic groups. Although for African-born Black men the prostate screening/counseling rate appears to be much lower than for White men, this difference was not found to be statistically significant.

Further analysis – adjusting for demographic, social, and economic differences across the racial and ethnic groups – found that age and educational attainment are the major factors associated with prostate cancer screening and counseling. Younger men are less likely than their older peers to have ever had some form of prostate cancer screening or counseling. Men with a college degree or higher education are 3 to 4 times more likely to have had some form of prostate screening or counseling than men with less than a high school education.

Conclusion

Access to preventive health care has a great impact on many leading causes of death. The current utilization of preventive health screening services in Hennepin County, including high blood cholesterol screening, Pap tests and prostate cancer screening/counseling, is encouraging: Hennepin County is close to the federal objectives; and compared to the state and the nation, the county is doing great.

Unfortunately, high preventive screening utilization rates are not seen equally across all racial and ethnic groups. While U.S.-born Blacks have preventive screening rates that are comparable to their White counterparts, African-born Blacks, Southeast Asians and Hispanics/Latinos are less likely to use preventive screening services.

Hidden behind these racial and ethnic disparities in preventive service utilization are problems related to unequal access to health care, such as not having health insurance or a regular source of care, and unequal socioeconomic status, such as living in poverty or lack of higher education. With these disparities in preventive health care utilization, not all county residents share the same opportunity for long life or good health.
Behavior and lifestyle play an important part in determining our health status and lifespan. Every day people make lifestyle choices that profoundly affect their health. Although heredity and environment play a part, the leading causes of death in Hennepin County (heart disease, cancer and unintentional injuries) are closely related to lifestyle factors. Research and investigation reveals that health status can be affected positively or negatively by the food, physical activity and substance use choices people make each day. Many premature deaths and disabilities could be prevented by changes in lifestyle.

Until the SHAPE project, information regarding lifestyle choices specific to Hennepin County and its various communities was not available. This section will focus on the results of the SHAPE 2002 survey regarding lifestyle and tobacco use and the relationship of these factors to overall health. Four healthy lifestyle characteristics are used for this analysis; their prevalence rates from the two SHAPE surveys are presented in Figure 8.

Physical Activity

Regular, modest physical activity substantially reduces the risk of dying from coronary heart disease (the nation’s leading cause of death) and decreases the risk for colon cancer, diabetes and high blood pressure. Physical activity also helps control weight; contributes to healthy bones, muscles, and joints; helps relieve the pain of arthritis; and reduces symptoms of anxiety and depression.25

The national Healthy People 2010 objective recommends moderate physical activity for 30 minutes per day on most days of the week.26 The SHAPE 2002 data shows that the proportion of Hennepin County residents who report moderate physical activity for 5-7 days per week declined slightly from 1998 to 2002. (This difference may be due to differences in the questions used in the two surveys. A more detailed analysis of these differences will be explored in future SHAPE reports.)

Nutrition
Diet has an important influence on health due to both the nutritional content of the foods eaten and the total number of calories consumed. A healthy diet has many components, but one that is easy to identify is the regular intake of fruits and vegetables. Research suggests that diets containing five or more servings of fruits and vegetables per day are associated with a variety of health benefits, including reduced risks for cancer, heart disease and stroke. Consistent fruit and vegetable intake also assists in healthful weight maintenance through the displacement of higher-fat and -calorie foods. The 2000 Dietary Guidelines for Americans recommend five or more servings of fruit and vegetables every day for individuals over the age of two.

SHAPE 1998 found that only about one out of eight Hennepin County residents (12.6%) ate five or more servings of fruits and vegetables on an average day. The 2002 survey found a much higher percentage of adults consuming five or more fruits and vegetables on an average day – 27.8%. (This increase could be due in part to the expanded questions included in the SHAPE 2002 survey that more accurately measure fruit and vegetable consumption separately, based on the national Healthy People 2010 objectives.)

According to the SHAPE 2002 data, 53.3% of men and 63.9% of women in the county eat at least 2 servings of fruit on an average day. The SHAPE 2002 survey also shows that 29.2% of Hennepin County adults eat at least 3 servings of vegetables on an average day, with at least one of these servings being a dark green or orange vegetable. Each of these rates needs to improve significantly in order for Hennepin County to achieve the national 2010 objectives.

Body Weight
Overweight and obesity are conditions with significant health consequences. Heart disease, stroke, diabetes and certain cancers are some of the physical consequences of overweight and obesity.
According to the SHAPE 1998 survey data, only 49.2% of county adults were classified with a normal range of healthy weight according to Body Mass Index calculations. In the SHAPE 2002 survey, this percentage decreased to 45.8%.

The national Healthy People 2010 objective is to have 60% of the population aged 20 years and older at a normal or healthy body weight (which is defined as a Body Mass Index (BMI) ≥18.5 and < 25.0). The data from the SHAPE 2002 survey indicate that major improvement in this lifestyle characteristic will be necessary for Hennepin County to reach this 2010 objective.

**Smoking**

Tobacco use, particularly cigarette smoking, is the leading cause of many preventable illnesses and deaths in the United States. Never starting to smoke and quitting smoking are some of the healthiest lifestyle choices that a person can make.

SHAPE 1998 found that 78.8% of Hennepin County adults were not smokers. The 2002 survey found this percentage had increased to 81.5%. Most of this increase can be attributed to significantly lower smoking rates for young adults, 18 - 24 years of age.

The Healthy People 2010 objective is to increase the number of non-smoking adults to 88%. Although Hennepin County’s improvement over the last four years has been significant, in order to achieve the 88% objective in Hennepin County by 2010, at least 55,000 additional adults must either not start smoking or quit smoking during the next eight years.

**Healthy Lifestyle Characteristics**

Physical activity, nutrition, body weight and smoking are lifestyle characteristics associated with a person’s self-reported health status. Adopting a healthy lifestyle should focus on meeting national recommendations for all of these characteristics. The recommendations from the U.S. Surgeon General are to maintain a normal body weight,
consume five or more servings of fruits and vegetables each day, get 30 or more minutes of moderate physical activity at least five times a week, and not smoke.

The average Hennepin County adult practices only two of these recommended lifestyle characteristics. Only 5.4% of adults are practicing all four healthy lifestyle characteristics while 6.2% are practicing none of them (Figure 9).

The relationship of self-reported health status to the number of healthy lifestyle characteristics practiced is demonstrated in Figure 10. Hennepin County adults who are overweight, eat poorly, smoke and are physically inactive are more than 22 times more likely to report their health status as poor, and 5 times more likely to report their health as fair, in comparison to residents who have made the healthy lifestyle choice for each of these characteristics. In contrast, adults who practice all four healthy lifestyle characteristics report their health status as excellent 4 times more often than do those practicing none of the characteristics.

**Conclusion**

The public policy implication of these findings is straightforward; clearly, more healthy behaviors are better. Future improvement in the health of county residents will depend, in part, on efforts that encourage individuals to adopt additional healthy lifestyle characteristics and maintain these new patterns of behavior. SHAPE 2002 also asked respondents about the barriers that keep them from adopting a healthier lifestyle, such as eating a healthier diet and getting more exercise. Their answers will be presented in upcoming reports and used in the planning of local health promotion activities.
Determinants of Health: A Geographic Analysis

Introduction

Until recently, it was widely believed that people’s health is primarily influenced by their individual behaviors, their genetic makeup and whether or not they are able to access health care services. But a wealth of new research evidence indicates that people’s health is influenced by complex interactions of these and many other factors, including social policies, cultural beliefs, social norms and the physical and social environment. Because the SHAPE 2002 survey collected information on economic distress, perceived discrimination and community support, it is now possible to examine these issues at the local level.

For the most part, people’s health status can be attributed to differential exposure to factors known to affect health, and the differential impact of these factors on health. Differential exposure refers to the tendency for factors that are known to be risky for health to be more common among persons from certain groups. For example, people in lower socioeconomic groups are more likely to be exposed to factors that are harmful to health, such as stressful life events and workplace hazards, than are people in higher socioeconomic groups. Differential impact, on the other hand, means that biological vulnerability increases as the effects of exposure to various health risks accumulate, both through multiple simultaneous exposures and over many years.

SHAPE 2002 data were used to examine the effects of economic distress, perceived discrimination and community support on health. A summary scale was developed and computed on each of these factors for each of the 14 SHAPE 2002 communities. Self-reported health status is measured as the percentage of people who reported their health as either fair or poor. SHAPE 2002 allows for this and other similar analyses at small geographic units such as communities within Minneapolis and regions within suburban Hennepin County. The figures in each of the following sections show the results of these analyses.
Economic Distress

Economic distress may be viewed as hardship created by poverty, economic downturns or high rates of unemployment. In addition, meager infrastructure investments can make it difficult for people who live in poor communities to obtain the goods and services they need to achieve good health. Some examples of how economic distress manifests itself are: the inability to afford food, shelter or prescription medication. To ascertain the level of economic distress experienced by Hennepin County residents, the SHAPE 2002 survey asked people whether they:

- Were unable to afford their mortgage or rent
- Ran out of food before the end of the month
- Had difficulty purchasing prescription medications each month

The responses to these questions were used to develop a summary scale for measuring the level of economic distress.

Figure 11 shows the relationship between economic distress and the self-reported health status for Hennepin County adult residents: those with higher levels of economic distress reported poorer health. As a case in point, adults in the Near North and Phillips neighborhoods of Minneapolis have the highest levels of economic distress, and the percentage of residents in those communities reporting fair or poor health is from 2 to 5 times greater than in the rest of Hennepin County. In comparison, people living in suburban areas reported experiencing lower levels of economic distress and better health status.
Discrimination

Research supporting the relationship between discrimination and health is also mounting. Discrimination is the act of treating someone unfairly because of factors such as race and ethnicity, age, national origin, sexual orientation, income or religion. People who perceive discrimination experience high levels of stress, which results in a number of physiological changes and poor health outcomes. Racial discrimination experienced by Black/African Americans, for example, has been linked to increased heart rate, hypertension, anger and hostility.\textsuperscript{31, 32} SHAPE 2002 gathered information on whether Hennepin County adult residents experienced discrimination in the past 12 months in any of the following:

- Getting a job
- At work
- Getting medical care
- Getting housing
- Getting a mortgage or loan
- Dealing with the police

A summary scale was developed to assess the level of discrimination experienced by county residents.

Figure 12 shows the relationship between discrimination and self-reported health status. In communities where people experienced high levels of discrimination, they reported experiencing fair or poor health at higher frequencies. Similarly, in communities where people reported experiencing low levels of discrimination, they also reported experiencing lower rates of fair or poor health. For example, adult residents of Minneapolis were more likely to report that they experienced discrimination, and
they were also more likely to report that their health was only fair or poor. Notably, the same two areas with the highest levels of economic distress, Near North and Phillips, also reported the most discrimination. In contrast, adult residents of suburban Hennepin County reported experiencing low levels of discrimination and were less likely to report that their health was only fair or poor.

**Community Support**

Many of the conditions created by economic distress and discrimination can be mitigated by positive social and community support from neighbors and friends. When people are supportive of one another, they provide emotional support, exchange information and ideas, and offer practical help. Recent studies indicate that being able to depend on neighbors and the community can be beneficial to the overall health status of individuals and communities. In the SHAPE 2002 survey, people were asked to state whether they agreed or disagreed with the following statements:

- People can depend on each other in this community
- Living in this community gives me a secure feeling
- People here know they can get help from the community if they are in trouble
- This is a good community to raise children in

As with economic distress and discrimination, a summary scale was developed and used to examine the level of community support experienced by Hennepin County adult residents.

Figure 13 shows a relationship between community support and self-reported health status that is similar to the relationships between economic distress and discrimination.
previously shown between self-reported health status and economic distress and discrimination. Residents in communities with low levels of community support reported higher rates of fair or poor health. In communities where residents reported high or medium levels of community support, they reported lower rates of fair or poor health.

In summary, we found Hennepin County to be highly stratified in terms of economic distress, discrimination and community support (Figure 14). We also found that the areas with low levels of community support, and high levels of economic distress and perceived discrimination also had relatively poor self-reported health status.

### Conclusion

Prior research has identified Minneapolis as one of the most residually segregated cities in the country.35 An important preliminary finding of SHAPE 2002 indicates that higher proportions of county residents who reported their health as fair or poor appear to be concentrated in areas with high levels of economic distress and perceived discrimination and low levels of community support. These findings imply a need for public health efforts to address not only the direct causes of poor health, such as poor health behavior and lack of health care access, but the indirect causes as well, including issues of segregation and social isolation.
Sampling Design

The SHAPE 2002 data were collected primarily through telephone interviews, supplemented by in-person interviews, that were conducted by the Survey Research Center at the Division of Health Services Research and Policy located in the School of Public Health at the University of Minnesota. Of the 9,959 interviews completed, 9,781 were conducted by telephone and 178 were conducted in person.

Survey respondents were selected at random through a two-stage process. In the first stage, a sample of Hennepin County households with listed telephone numbers was obtained from Survey Sampling, Inc. (SSI). Almost all (99.2%) Hennepin County households have telephone service (according to the 2000 U.S. Census). This telephone list of 246,919 households from SSI excluded a large number of unlisted telephone numbers, cell phone numbers, and phone numbers from group quarters (e.g., college dormitories). In addition, it excluded several large apartment and condominium buildings in Minneapolis and several suburban communities. Consequently, the phone list was augmented with 200 telephone numbers from student dormitories at the University of Minnesota, and with 7,913 telephone numbers for apartment and condominium building units missing from the SSI sample. A random sample of households was then drawn from the augmented list.

In the second stage of sampling, one adult from each sampled household was selected to participate in the survey. To select the respondent, the person answering the phone was asked to identify the adult in the household who had most recently had a birthday. This person became the designated respondent for that household. The survey was translated and conducted in Spanish, Somali, Hmong and Vietnamese for respondents who spoke these languages. Of the total surveys, 1,007 were conducted in a language other than English.
To provide results for each of the five racial and ethnic communities of special interest to this study, a sufficient number of surveys needed to be completed within each community in order to conduct statistically reliable analyses. This was accomplished by over-sampling geographic areas in which a relatively large proportion of the population was from the racial and ethnic communities of interest.

Survey Content
The SHAPE 2002 survey instrument took ten months to develop. Most survey questions were drawn from existing instruments, including the SHAPE 1998 questionnaire; others were written specifically for this study. The survey's content areas include:

- General mental and physical health status
- Chronic health conditions
- Access to health insurance and care
- Receipt of preventive health screening
- Health risk behaviors including smoking, alcohol drinking, nutrition, and exercise
- Injury
- Community social support
- Neighborhood safety
- Experiences of discrimination
- Economic distress

In addition, questions were asked regarding socio-demographic characteristics including age, gender, race, ethnicity, country of origin, marital status, education, employment status and income.

Survey Response Rate
In Hennepin County, 15,237 households were contacted between January and August 2002, and 10,098 interviews were completed. This represents a response rate of 66.3% for the county as a whole. In the fielding of the study, all phone numbers (for which there was no answer) were called a minimum of 20 times; these calls were spread out across daytime and evenings on both weekdays and weekends. In many instances, 30-40 attempts were made; the single highest number of attempts for any telephone number was over 80. Incorporating the information for unanswered calls, as well as that for known not-eligible numbers (such as business phone numbers, and disconnected phone numbers), the cooperation rate for the study was 75.4% and the refusal rate was 21.6%. (This is the methodology used by the American Association for Public Opinion Research.) The cooperation rate is probably a better reflection of the actual rate of participation for the study, since it is based upon how many households were actually contacted for participation in the study, rather than the total number of telephone numbers attempted.

Weighting of Sample Data
For the data analyses, a statistical procedure calling weighting was applied to the sample data. Weighting ensures that the data represents the community and racial/ethnic groups from which it was sampled, and allows for estimates from the data to represent the entire county population. SHAPE 2002 was designed to provide data for different geographic areas and also for specific racial/ethnic communities. Greater detail on the specific weighting techniques performed and on other technical issues regarding the SHAPE 2002 data will be covered in the SHAPE 2002: Methodology report, to be released at a later date.

Potential Sources of Bias to the Survey Results
The results of the study allow conclusions to be drawn about the health of all adults currently living in Hennepin County. However, several limitations of the survey design and constraints on the data collection should be taken into consideration. One common source of bias in telephone survey data is non-telephone bias – the people who could not be surveyed because they lacked phone service may be different than those with phones who were surveyed. Another common source of bias is non-response bias – the people who refused to take the survey may be different than those who cooperated and answered the survey questions.
Another potential source of bias may arise when a selected adult is not interviewed or when a sampled household is never contacted. In a number of cases, the University interviewer was not able to speak with the appropriate adult in a sampled household, even after many calls on different days and at different times of day. In other cases, the selected adult refused to participate in the study. To the extent that non-respondents are somehow different from respondents on the health-related variables in this study, the survey results would be biased.

Special efforts were made to obtain the largest possible response among the racial and ethnic communities of special interest to this study. One of these efforts was to translate the survey instrument into Spanish, Somali, Hmong and Vietnamese and to conduct the survey in these languages for respondents who needed them. The translations were performed by Betmar, a contracted organization highly experienced in translation. Despite the skill and oversight with which the translations were performed, there remains the possibility that the meaning of some survey questions could have changed as a result of translation, which again could bias the survey results.


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This report, information on SHAPE 2002, and upcoming SHAPE 2002 reports can be accessed at our web site at: http://www.co.hennepin.mn.us/commhlth/reports/shape.htm

Hennepin County provides equal access to employment, programs, and services without regard to race, color, creed, religion, age, sex (except when sex is a Bona Fide Occupational Qualification), disability, marital status, sexual orientation, public assistance, or national origin. If you believe you have been discriminated against, contact the Human Resources Department, A-400 Government Center, Minneapolis, MN 55487, 612 348-3562.

This material can be given to you in different formats, such as large print or on tape, if you call Hennepin County Community Health Department at 612 348-3925 (voice) or 612 348-0082 (TTY).
A Preview

SHAPE 2002

Survey of the Health of Adults, the Population, and the Environment