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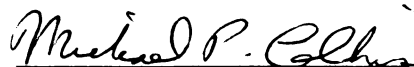
Socioeconomic Status and Health:
An Association of Two Ambiguous
Variables

presented by

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**SOCIOECONOMIC STATUS AND HEALTH: AN ASSOCIATION OF TWO
AMBIGUOUS VARIABLES**

By

Lesley Swayze Dufner

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**Submitted to
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ABSTRACT

SOCIOECONOMIC STATUS AND HEALTH: AN ASSOCIATION OF TWO AMBIGUOUS VARIABLES

By

Lesley Swayze Dufner

It has been shown, through decades of research, that those of lower socioeconomic status (SES) also experience lower levels of health. However, it has not been revealed why this association persists, what the best way to measure SES is, or what is meant by "health". Through a review of the literature, it was revealed that the most common measures of SES were education, occupation and income. Health has been measured in terms of behaviors, health conditions, status and mortality. Potential mediators of the association have been identified as psychosocial factors, access to healthcare, physician attitudes and healthcare coverage. This association was further investigated using data from a community health survey. Education, occupation and income were observed independently as indicators of SES in association with quality of life as a measure of health. It was revealed that in addition to having a high BMI, cholesterol and being diabetic, respondents of low education, occupation and income also reported being dissatisfied with numerous aspects of their regular source of healthcare.

Dedication

I dedicate this achievement to those who didn't give up on me, ever. More specifically, I want to recognize all of my friends in the Cancer Control Department at the American Cancer Society. They have supported me emotionally and financially for six years. I am indebted to their belief in me even when it wasn't definite that I would ever be able to return to work. I also want to thank the staff at PAR Rehab Services, especially Doctors Ginny Thielsen and Bob Fabiano, who understood my brain and healed it. I cannot express how grateful I am for their help in teaching me how to believe in myself, and convincing me that I could finish this beast. My life has never be the same since Kerry Cullen became part of it, she is truly the greatest friend I have ever had. I thank her for always listening to me, agreeing with me and accepting me (even though I'm the country version). You will finish this too, I know you will. I also want to thank my parents for being so wonderful and always knowing what to do and what to say. Most importantly, I want to thank my husband Greg who loves me so much and didn't leave when I couldn't love him back. You are the best thing about me, I am thankful every day that you are part of my life.

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CHAPTER 1

INTRODUCTION

Socioeconomic status, by various measures, has long been inversely associated with mortality and, to a lesser extent, other indicators of health. This observation is not new to health research, nor has it gone unnoticed. Literally centuries of observation and research have revealed that poorer people are less healthy and die sooner than do their more affluent countrymen. Antonovsky reported that in 1839 London the following observations were made: "Gentlemen, professional men and their families, died, on average, at 45 years, "tradesmen and their families" at age 26, and "mechanics, servants, labourers and their families" at age 16.¹ Similarly, current literature focuses primarily on mortality as an outcome of socioeconomic status (SES). This thesis will suggest a shift of focus away from mortality to earlier measures of health. Such a redirection increases the possibility of revealing mechanisms that may be modifiable during ones lifetime.

A review of the literature will uncover those factors that are associated with SES that contribute to lower health status and ultimately, higher rate of mortality in low SES populations. One intention of this paper is to reveal that the research to date has been more successful in documenting the existence of health inequalities than explaining the persistence of them. Additionally, the most appropriate measures of SES and outcome will be explored.

In exploration of a better understanding of the relationship between SES and health-related quality of life, a survey of individuals in Northern Michigan will be analyzed. This survey questioned 6,534 individuals in 21 counties in regards

to their demographic characteristics, health status, attitudes and behaviors. Health-related quality of life will be used as an outcome to explore its association with income, education and occupational status as indicators of socioeconomic status

It is anticipated that the combination of a review of the literature, and an analysis of a community health survey will provide a unique perspective on this ongoing issue of socioeconomic status and health.

CHAPTER 2

MEASURES OF HEALTH OUTCOME

Socioeconomic status has been studied as a predictor of aspects of health ranging from injury to, most commonly, mortality. Also, health outcome has been assessed in terms of attitudes and behavior, such as screening and preventative healthcare utilization. SES has been shown to affect all areas of health. While mortality is the final measure of health, many attempts have been made to measure outcomes that are potential predictors of early mortality.

Health Behaviors

An individual's ability or willingness to participate in healthy behaviors is not only a good marker of their concern for their general health, but also is a way to measure their accessibility to such practices. It is anticipated that those who are screened regularly will have better long-term health outcomes, based on their access to healthcare and choice to use it.

Engaging in healthy activities such as participating in screening ²² and exercising regularly ² also has been shown to be inversely associated with SES. Although physical activity and nutrition are very strongly related to health, their relationship to socioeconomic status has been explored only recently.

A survey conducted in Pittsburgh, PA in 1986 investigated the physical activity habits of high and low SES populations.² Socioeconomic status was determined by sampling an inner city and a suburban population. These particular areas were chosen based on demographic characteristics identified in the US Census data. These investigators divided physical activity into four categories: leisure time, job-related, household and walking. They found that the

average time spent engaged in physical activity was highest for high SES women (2,079 +/- 1,807 minutes/week), and lowest for low SES women (1,536 +/- 1,701 minutes/week). Men did not differ greatly by SES group in total amount of time spent engaging in physical activity.

The significant finding from this investigation was the type of physical activity engaged in by each group. Men were more likely to participate in leisure and job related physical activity than women. Lower SES men spent more time participating in walking and household activities than higher SES men. Women of lower SES were significantly less likely to participate in physical activity of any type than women in the other group. Women in both groups did, however, spend a significantly greater amount of time engaging in nearly twice as much household activity than men. Job related activity was higher for men of both high and low SES.²

These are not unexpected results; it makes sense that more affluent populations would have more time to spend on leisure activity. It is also not surprising that women are more likely to spend time engaged in household activity, 50.3% of the low SES women were either a homemaker or retired, 57.5% of high SES women were the same. A majority of men in both groups were employed, so the amount of time spent on job related activity is not unexpected.²

Risk Factors for Disease

A common way to study health in relation to SES is to observe risk factors for a particular health outcome. In an attempt to determine the best measure of SES to use to study cardiovascular risk factors, Winkleby observed these factors

using income, education and occupation as indicators of SES independently. For this investigation, data were collected from the Stanford Five-City Project. Risk factors included; cigarette smoking, systolic and diastolic blood pressure, and total and high-density lipoprotein cholesterol levels.³ It has been documented that lower SES populations have higher risk factor prevalence for many health conditions. The intent is to gain insight into how best to identify and modify risk factors in lower SES populations.

Health Conditions

A single or group of related conditions are often utilized in order to examine the effects of SES on a particular health outcome. Because cardiovascular disease has a number of SES influenced risk factors it is often used as an outcome. Controlling for major cardiovascular risk factors such as blood pressure, smoking and cholesterol levels does not completely remove the effect of SES on risk of CHD.⁴ Therefore, observing SES in relation to risk factors only would not provide the entire picture of the relationship, which is why health conditions themselves should be investigated as outcomes.

Health Status/Expectancy

An approach that identifies high-risk populations and focuses on a broad range of health-related outcomes is "health expectancy". This concept is being recognized, primarily in Europe, as a more effective way to monitor health than reliance on mortality data.⁵

This method was investigated in New Zealand to determine whether changes in health occurred during a time of social and economic disturbance.⁵ "Health expectancy" was estimated using standard population life tables and

prevalence data on disability, handicap and other health problems. Disability and health problem data were drawn from two national surveys, the Social Indicators Survey (SIS) and the Household Health Survey (HHS). Indices were constructed based on a number of questions from the surveys. The first index relied on two questions regarding self-report of health problems and use of assistance with normal daily activities. The next index was based on self-assessed general health. The third was a measure of functional ability, participants were asked regarding their capability to climb stairs. It was observed that all three indices of “health expectancy” significantly declined across each decreasing level of SES. The ultimate goal in tracking health expectancy is to shift the way of thinking from mortality reduction to health improvement.⁵

Mortality

The most common outcome used to measure SES differences in health is mortality. Mortality is investigated either as all-cause mortality or death from a specific cause, such as cancer or accidental death. The reason that death is used as an outcome in the majority of the research is because it is very easy to establish and collect. In the United States, each death that occurs is required to be documented and reported to the National Death Index. The cause of death is generally recorded, as are the underlying conditions related and unrelated to death.

Information regarding mortality is readily available to researchers in the United States. Lantz et al followed a population of men and women who had participated in the Americans’ Changing Lives survey for seven and a half years. These investigators examined the risk of death by SES, using the National Death

Index to track deaths among participants. These investigators found that when cigarette smoking, alcohol consumption, sedentary lifestyle and relative body weight were considered, low levels of income were significantly associated with risk of dying.⁶ The National Longitudinal Mortality Study followed Americans selected from the Current Population Surveys until their death or a maximum of 11 years. Higher mortality was observed in this study among unemployed persons and persons of low income. Mortality in this study was also determined from the National Death Index.⁷

CHAPTER 3

MEASURES OF SOCIOECONOMIC STATUS

In addition to the difficulty of defining the proper health outcome to relate to SES, another complication that the literature reveals is that no standard exists for measuring socioeconomic status. In an attempt to completely understand the relationship socioeconomic status has with health, it is important to investigate the individual components of SES. A more comprehensive review of the elements that contribute to SES may reveal unexplored associations.

Education

Education is often selected as an indicator for SES because of its close relationship to occupation and income. Investigators assume that highly educated populations are more likely to hold safer, better paying jobs than less educated groups. It is also assumed, consistent with previous observations, that this population is better informed about and has better access to healthcare. This very often is the case, but there are numerous populations studied in which this does not occur. This suggests that perhaps these are important modifiers of the association.

In an analysis of the 1986 to 1990 National Health Interview Surveys data, SES was defined by three categories of education for Americans in the last years of life.⁸ The rationale the authors presented for using educational attainment as the sole variable for SES was that a reduced income could result from poor health. This idea, however, leads to an interesting opposing theory that is presented by a number of authors known as *drift hypothesis*. Drift hypothesis

suggests that an SES-health association is a result of ill health on SES, not the influence of SES on health.⁹

Occupation

Another measure of socioeconomic status frequently used is occupation. Occupation is a very good indicator of income and social status in countries other than the United States. European countries define occupation very narrowly, and income and status are based primarily on occupational grade. This is not necessarily the case in the United States.

Although occupation is a commonly used indicator of SES, this also has the potential to be a problematic measure. Often, elderly people are retired, an occupational category that is not reflective of a lifetime's worth of exposure. Another potential dilemma is the tendency to change jobs numerous times throughout a working career. Since this is an indicator employed to estimate income and occupational exposure, how are individuals who do not work outside the home, such as homemakers, but whose spouses do, categorized? In terms of occupation and health, it is common for an individual to be unemployed for reasons related to poor health.

In order to circumvent these potential problems with occupation as a measure of SES, a number of techniques have been employed by investigators. The United States Census employs a scaling system for occupation, which is hierarchical in nature.¹⁰ Most countries have a similar categorization scheme for occupation. Additionally, questions are asked similar to "what were you doing most of last week?", and "what are your normal job responsibilities?" to gather as

much information about one's occupation or daily activities.⁸ Some investigators classify subjects as employed or unemployed.

Arguments have been presented against using occupation as the sole source of socioeconomic status. Duncan developed an occupational index for socioeconomic status¹¹. His explanation for doing so is in recognition of the fact that occupation is only a fraction of SES. Duncan's index was intended to provide a standard way to report occupation in research in combination with measures of income and education.

Other researchers who have observed moderate correlations between education, income and occupation have substantiated Duncan's approach. Winkleby et al, in an investigation of cardiovascular risk factors and SES, ascertained income/occupation correlation coefficients of +.41 and +.30 for men and women respectively. The education/occupation correlations were slightly higher +.67 and +.66 for men and women.³ These results suggest that occupation, income and education are measuring different aspects of socioeconomic status.

Income

Income is essentially a measure of one's access to resources. It can determine where a person lives, what they eat and to what level of medical care they have access. Interestingly enough, income is not used as a sole indicator of SES very often. Most commonly, income is used in combination with education to determine SES.

Most commonly when income is used as an indicator of SES, respondents are grouped into categories of either above or below a certain percentage of the

poverty level. A recent comparison of physician use and SES between Ontario and the United States utilized three categories of family income based on 200% of the US poverty level.¹² The lowest group fell below the 200% of poverty level (based on US dollars), the next group was between 200% and 400% of the poverty level and the highest group was above the 400% of poverty mark.

SES Index

Despite the extensive use of such a composite variable, the arguments for investigating the components independently are at least as convincing as those supporting a combination of SES indicators. Proponents of combining education, income and occupation into one indicator suggest that education prepares one for an occupation, which leads to an appropriate income.¹² This view accounts for the inter-relatedness of these three variables. The other perspective insists that a single index of SES is not appropriate for research purposes, or that it simply does not exist.¹³

Although these characteristics of SES seem to be highly correlated, the argument is that the relationship is superficial. In support of this, analysis of the 1950 census found that the variation between educational levels accounted for only one third of the variation in occupational SES (correlation coefficient = .567, variance = $.567^2 = .32$). Furthermore, occupational status accounted for less than one fifth of the variation in income (correlation coefficient = .419, variance = $.419^2 = .18$). Despite the fact that these data were collected 50 years ago, Duncan suggests that SES indicators should be evaluated individually and selected based on the focus of the study being conducted.¹² There is sufficient

evidence to support the theory that other measures of socioeconomic status, specifically income and education, are substantially independent of one another.

A detailed matched analysis of the 1960 census and death records, revealed not only differential outcomes by SES measure overall, but also by race and gender specific measures.¹⁴ Mortality ratios were obtained by years of school completed and family income for white males and white females aged 25-64 years. White females experienced age-standardized mortality ratios ranging from 1.27 in the lowest educational category (0-7 years of school completed) to 0.84 for the highest level of education attained (college, 1 year or more). Similar ratios for categories of family income ranged from 1.21 (under \$2,000 a year) to .86 (\$10,000 or more a year). Education differentials were at least as high, if not slightly higher, than income differentials. These differentials were slightly larger when the rates were standardized for age and income or education, 1.21-0.89 for education and 1.11-0.93 for income. White male mortality ratios ranged from 1.13 to 0.81 from lowest to highest in the age standardized education category and 1.05 to 0.87 in the age and income standardized category. Income related age standardized mortality ratios spanned from 1.49 to 0.84, age-, education-standardized ratios ranged from 1.40 to 0.90. These observations strongly suggest that income and education should be viewed as independent of each other. Unfortunately, these findings do not elucidate which measure of SES is more important. It is clear that both indicators are significant and actually may operate differently depending on the population under study.

Agreement between Indicators

It is interesting that the association between the various socioeconomic variables and some measure of health or mortality do not always agree with each other. A study of SES and functional status in elderly adults found that occupation did not contribute significantly to this relationship. Educational attainment was found to have a protective effect on functional status. Income also showed a strong association with functional status; this association was observed across all income and functional categories.¹⁵

In the Stanford Five-City Project, investigators examined the risk factors for cardiovascular disease in relation to education, income and occupation independently.⁴ It was determined from this analysis that education was the strongest, most consistent predictor of risk factors (cigarette smoking, systolic and diastolic blood pressure, total and HDL cholesterol) compared with income or occupation. Higher prevalence of risk factors was exhibited within the lowest level of educational attainment as compared with higher levels of education. This same graded association was not observed within categories of income or education. A univariate regression model approach revealed that correlations were strong and significant across all risk factors for education. Correlations were much lower and non-significant for income and occupation. Income and occupation correlations also operated in the opposite direction of education for total cholesterol. This examination concluded that education is the best predictor of cardiovascular risk factors.⁴

CHAPTER 4

MEDIATORS OF THE ASSOCIATION

While there is no question as to whether a relationship exists between socioeconomic indicators and health, the specific SES-related causes of these inequalities is yet to be fully explored. It will be shown that merely having a low income is not a sufficient explanation for why a particular group is less healthy or happy. Nor, as will be demonstrated, is not having healthcare coverage, or living in a poorer section of town. Educational and occupational relationships to health can be perhaps more adequately, yet not fully, understood.

Psychosocial Factors

Literally centuries of research have been done on the psychosocial aspects of health and socioeconomic status. Although perhaps not scientific by today's research standards, valid theories have emerged from "primitive" epidemiological research. In certain cases, these theories are still being explored. In the late 1800's, French sociologist Emile Durkheim studied suicide from a population perspective.¹⁶ He investigated the characteristics of European suicide populations. An interesting observation Durkheim made was that rates of suicide increased in times of societal economic disturbance. Whether the change resulted in more or less prosperity did not make a difference, rates of suicide increased either way. Although Durkheim did not specify which income groups were affected by suicide rates, it was clear that a change in the economic climate resulted in a larger discrepancy between the richest and the poorest. This indicates that economic uncertainty, or inequality, leads to a quality of life that, for some, is no longer bearable.¹⁷

More recently, epidemiological studies have been conducted relating to psychological stress and socioeconomic status. Psychological distress, including depression and anxiety, was examined in association with income, education and occupation.¹⁷ Data from eight national surveys were evaluated. These investigators found that education, occupation and income significantly predict distress in the negative direction. That is, the lower one's income, educational level or occupational status, the more "distressed" they are likely to be.

Access to Healthcare

Preventive care includes an ongoing relationship with a physician, regular medical checkups, diagnostic screening for breast, cervical, prostate cancer, heart disease and awareness of new medical information. Reduced access to these services can potentially affect one's health. Additionally, one would assume that in countries where guaranteed access to healthcare exists, socioeconomic differences in healthcare utilization behaviors would be less prominent. As will be shown, however, observations to date do not reflect this.

Physician Attitudes

Another interesting observation that has been made by some investigators is that physicians handle patients of lower education, insurance and income differently than those with more resources. A study of pregnant Hmong women in Minnesota revealed that physicians did not provide women with information that was not specifically requested by the patient. The majority of these women had expected their physician to explain procedures.¹⁸

Physician beliefs have been closely observed to determine if patients are treated differently based on their SES. It has been shown that physicians are

more likely to counsel patients about lifestyle changes if they feel they are willing and able to do it.¹⁹ These findings suggest that if a patient does not seem to understand the need to change their lifestyle, a doctor may not suggest that they do.

Health Literacy

Many aspects of health are dependent on an individual's ability to understand and adhere to healthy behaviors, take precautions and follow medical advice or regimes. In situations where these abilities are necessary to ensure good health, health literacy is of the utmost importance. In general, it is in one's best interest to be aware of their health and how to maintain it. This is especially true of populations at high risk for poorer health outcomes.

A study of HIV/AIDS infected persons was conducted in order to determine whether their disease progression was associated with their health literacy.²⁰ Recently, a tool was developed to measure functional health literacy. Functional health literacy measures illness-related knowledge, comprehension and treatment perceptions for certain chronic illnesses. It has been demonstrated within chronically ill populations that low health literacy is closely associated with poor health, higher rates of hospitalization, negative treatment outcomes, poor knowledge and understanding of their illness.²⁰ This tool was used to measure the health literacy of a population of 294 HIV infected patients. It was observed that health literacy was significantly related to participant education OR = 4.9 95% CI = 2.5 to 9.5. The health literacy test had to be read to participants who were unable to read. The lower literacy group completed a mean of 11.6 years of education, while the higher literacy group had completed a

mean of 13.3 years. To test the independent effects of education and health literacy, the authors formed four groups combining high (above 80%) and low (below 80%) health literacy scorers with high (greater than 12 years) and low (below 12 years) levels of education completed. Using non-parametric tests for linear association, it was observed that the low health literacy/low education group demonstrated the least amount of knowledge and understanding of their disease and more treatment misconceptions as compared to the other three groups.²¹

Low levels of health literacy had potentially dangerous effects on the health of this population. Specifically, there was a marked difference in the undetectable viral load between the high and low literacy groups. The low literacy group was less likely to have an undetectable viral load, suggesting non-adherence to their prescribed treatments. Additionally, those with low health literacy held more misconceptions about HIV transmissibility during treatment for HIV.²¹ The relationships found in this population suggests that less informed, less educated populations are at a potentially greater risk of experiencing poor health outcomes. In this study specifically, others are put in danger of infection because of the transmission misconceptions of the infected.

Another hurdle that must be cleared by very uneducated patients, and was an issue in this investigation, is the reliance on a medical provider to read and interpret health-related material to them. There is the potential that a provider will not take the time needed to do this, or that they are not aware that literacy is a problem for this patient.²¹

Healthcare Coverage

A study conducted in Canada, a guaranteed healthcare country, compared breast and cervical cancer screening rates in Ontario with those in the United States, where coverage is not guaranteed.²¹ No difference in screening rates was observed between the two countries for Papanicolaou tests and clinical breast exams. When all women were included in the analysis, mammography rates were higher in the United States than in Canada. However, the strength of the association between income and mammography screening rates was greater in the United States, Odds Ratio 2.7 (95%CI 2.3-3.2) than in Ontario, Odds Ratio 1.8 (95%CI 1.3-2.6). When uninsured women in the United States (13.1%) were examined separately, a linear decrease in screening rates with a decrease in income was noted. Even in Ontario, utilization of preventive healthcare increases with increased income. This suggests a strong link between income and health.²²

This study also investigated the link between educational level attained and rates of screening utilization. Compared with women with less than a high school diploma, college graduates were more likely to have a mammogram, Odds Ratio 1.5 (95%CI 1.2-1.7). In this instance, the inverse relationship between SES and screening holds true if either education or income is used as the indicator variable.²²

In Canada, the effectiveness of universal healthcare to lower SES populations has been studied extensively. An investigation of invasive cardiac procedures and mortality one year after myocardial infarction in Ontario, Canada assessed the relationship of these events and their relationship to SES. The

cohort of interest consisted of all 51,591 patients that were admitted to a hospital with a diagnosis of myocardial infarction in a three-year period. Median income of neighborhood of residence was used as the indicator of SES. Though in Ontario everyone has healthcare coverage, there was nevertheless a 5 percent increase in one-year mortality and at least a 7 percent decrease in facilities available at the hospital of treatment in the lowest income quintile compared to the highest. This trend continued throughout the five income categories. Ultimately, a highly significant association between income and mortality was found. Each \$10,000 increase in median neighborhood income resulted in a 10 percent reduction in risk of mortality within one year.²³

A comparison of two universal healthcare countries reveals that health inequalities persist in decreasing levels of social class, but vary greatly by country. In 1989, Vagero and Lundberg undertook an analysis of health differences between social classes in the United Kingdom (specifically England and Wales) and Sweden. For both countries, social class was categorized into four groups according to the British Registrar General's guidelines. The investigators focused on mortality and long-term illness by social class.²⁴

Death data were collected from the Office of Population Censuses and Surveys in England and Wales, and the Deaths Registry in Sweden. Relative risk of death increased with decreasing social class in both countries. In England, RR of death in men aged 20-64 as compared to the total study population, ranged from 0.79 in the highest social class to 1.17 in the lowest classification. The ratio of the lowest two categories to the highest two categories was 1.48. In Sweden, a similar, yet less strong association was observed. The

RR of death in Sweden ranged from 0.87 to 1.11. A ratio of 1.27 was observed between the lowest and the highest-class categories. Although levels of significance are not given, the ratio of lowest to highest class is 20% higher in England, suggesting a greater social class gradient for health.²⁴

The trends were similar, but the difference not significant, for the prevalence of long-term illness by social class. Relative prevalence by social class increased from 0.52 to 1.38 by class in England. In Sweden, a less dramatic prevalence increase from 0.79 to 1.20 was observed.²⁴

These findings suggest that healthcare coverage does not eradicate the differences between socioeconomic groups. It does appear that in Sweden, where strong attempts have been made to reduce class inequalities, the health gradient is less steep between classes. This fosters the idea that the health/SES discrepancy is something more deeply rooted than access to care, and not yet completely understood.

The well known Whitehall studies of British Civil Service employees is an example of how occupation and insurance coverage can reveal conflicting information. In England, Civil Servants fall into very distinct classifications: administrators, professional, executive, clerical and unskilled laborers. A ten-year follow up of 17,350 civil servants produced varied relative risks of mortality by employment grade despite universal insurance coverage among this group. Compared to the top administrators, the relative risk of mortality over this ten-year period was 1.6 for the professional-executive grade, 2.2 for the clerical grades and 2.7 in the lowest grades of unskilled workers. These findings point toward an occupational or perhaps even an income based link to mortality and/or

health. In the case of British Civil Servants, insurance cannot be implicated as the source of inequality.⁴

Combination of Etiologies

This review has revealed that there is more than one factor that contributes to the health/SES relationship. Many investigators have attempted to classify the socioeconomic discrepancies that directly affect health. Feinstein summarizes a structure that divides inequality explanations into four distinct categories. Figure 1 illustrates this concept. The four categories included are: materialist lifestyle effects, materialist health care effects, behavioral lifestyle effects and behavioral health care effects.²⁵

Materialist explanations of life span (lifestyle) related health outcomes are defined as both personal financial resources required to acquire non-medical goods and services that are used to produce good health, and public resources that contribute to sanitary and safe living conditions. Examples include automobiles and housing at the personal level, and public housing and transportation, environmental and occupational conditions on the public level. Behavioral explanations of life span health outcomes include those factors that contribute to a healthy state, but that do not necessarily require financial resources or cannot be purchased. Diet and exercise habits, smoking, alcohol consumption and driving habits are all behavioral characteristics.²⁵

SOURCE OF INEQUALITY	
TYPE OF EXPLANATION	Life Span
	Access to and utilization of health care system
Materialistic (access to resources)	Housing, overcrowding, sanitation, transit mode, occupational hazards, environmental hazards
Behavioral (psychologic, genetic, cultural)	Diet, smoking, exercise regime, leisure activities, risk taking, alcohol and substance abuse
	Ability to purchase health care, ability to purchase pharmaceuticals, regular physician
	Comprehensive medical information, "playing the system," following instructions, self diagnosis, awareness of recurrence

Figure 1. Conceptual decomposition of factors explaining health inequalities²⁵

Access to and utilization of health care resources can also be evaluated at the materialist and behavioral levels. The materialist perspective includes public accessible forms of health care, such as; health insurance plans, health management systems and government funded or universal health care. Since this differs dramatically from place to place, health care coverage, whether private or publicly funded, has been explored in this review. Behavioral pathways to health care utilization are more variable and modifiable. Feinstein classified behavioral utilization of care into four detailed stages; preventive care, diagnosis and entry into the health care system, treatment efficacy, follow up and readmission. As this paper will demonstrate, often low socioeconomic populations lag behind at one of these steps.²⁵

CHAPTER 5

NORTHERN LOWER MICHIGAN HEALTH SURVEY METHODS AND POPULATION

To more fully understand what other researchers have faced in exploring the socioeconomic issue, this chapter will provide a closer examination of specific data. The intent of this analysis is twofold. First, it is the intent of this investigator to observe the association between SES and health-related quality of life that is represented in the literature. The variables that have been shown, at least partially, to explain this relationship will be investigated. Although these data are cross sectional and not comprehensive enough for thorough study, it is hoped that what is uncovered may promote new ideas in socioeconomic research. The second purpose of this investigation is to examine this association utilizing three different measures of SES. Since SES is not represented uniformly across the literature, this investigation will look at the different ways of approaching this important variable, and evaluate which might be the best measure to use in future research.

The data used for the examination of SES and health-related quality of life were collected by an independent research firm via telephone interview in 1995. The survey that was administered is located in the Appendix. Six thousand, five hundred and thirty four residents of twenty-one counties in Northern Lower Michigan were surveyed. The health departments and hospitals in this area commissioned and financed the survey. Respondents were required to be over the age of 18 and were asked a number of demographic and health-related questions. The distributions of participation by county, gender, age and race are shown in Table 1.

Table 1. Distribution of Demographic Characteristics within the Northern Michigan Survey Population

Demographic Characteristic	Frequency	Percent
County		
Charlevoix	325	5.00%
Emmet	300	4.60%
Antrim	306	4.74%
Otsego	323	4.95%
Grand Traverse	304	4.74%
Leelanau	304	4.74%
Benzie	308	4.61%
Cheboygan	313	4.80%
Presque Isle	308	4.78%
Alpena	311	4.64%
Montmorency	303	4.66%
Alcona	304	4.70%
Oscoda	326	5.00%
Ogemaw	300	4.49%
Iosco	300	4.46%
Crawford	315	4.82%
Kalkaska	322	4.90%
Missaukee	318	4.98%
Wexford	309	4.64%
Manistee	315	4.80%
Roscommon	319	4.90%
Age		
Less than 25	396	6.10%
25-39	1707	26.10%
40-54	1688	25.80%
55-64	1005	15.45%
65-74	1088	16.70%
75+	590	9.85%
Gender		
Male	2787	42.70%
Female	3746	57.30%
Race		
White	6019	97.30%
African American	9	0.15%
Asian, Pacific Islander	18	0.29%
American Indian, Alaska Native	73	1.18%
Other	33	0.53%

For this investigation, three measures of socioeconomic status will be compared; level of education attained, poverty status and occupational status. Respondents were asked to provide the highest grade or year of schooling they had completed. Answers ranged from 0 - never attended school, or kindergarten only to 19 - doctorate. In order to conform to the majority of the literature, respondents were divided into two categories of education (1) high school diploma or less and (0) greater than a high school diploma.

The second measure of SES was poverty status. A 1995 Federal threshold of poverty for the United States was used as a standard. The threshold for one person in a household was \$7470 each additional person added \$2560 to that threshold.²⁶ To determine SES status the following formula was used. Each response was assigned a value of 7470. The number of people in the household over the age of 18 (including the respondent) was gathered. One was subtracted from this number and each person over 18 was assigned a value of 2560. Three questions were used to determine the number of children in the household under the age of seventeen. The total number of children in the household was multiplied by 2560 and added to the adult total. This represented the threshold that each household's income would need to be below to be considered "low income" for this analysis.

The final measure of SES that was utilized was employment status. Because this survey did not require specification of the type of job that was held, the dividing feature became employment status, employed or unemployed. Employed for wages, self employed, homemaker, student and retired were considered employed (0). Out of work for more than one year and out of work for

less than a year were considered unemployed (1). Those who answered that they were unable to work were deleted from the analysis. It was believed that the inability to work would introduce a bias into this investigation considering that those who are unable to work are presumably unable to do so for reasons related to their physical or emotional health.

Answers to ten questions in the survey were combined to form the response variable of interest which was a health-related quality of life measure. Since this variable accounts for physical and emotional characteristics, it was also considered to be a measure of health status. These ten questions were chosen and scored based on the SF (short form)-36 test.²⁷ This test was developed from the Medical Outcomes Study and has been used extensively since its development as a tool to measure health-related quality of life and health status in ill and healthy populations. Each answer to a question in the SF-36 was assigned a number score. The ten questions were combined into six categories, shown in Table 2, to form composite scores. These composite scores were transformed into percentages using the following formula; $((\text{Actual raw score} - \text{Lowest possible raw score}) / \text{Possible raw score range}) \times 100$. For each respondent, his or her six transformed composite scores were added together. In order to create an outcome variable that was continuous and normal, the score was subtracted from 100 and the log was taken of this new transformed score. The variables included and scoring system applied are presented in Table 2.

Table 2. Components of Health-related Quality of Life Variable

QUESTION (category)	SCORE	CATEGORY
<i>Does your health now limit you in this activity</i>		
Lifting or carrying groceries	1.0-yes, limited a lot 2.0-yes, limited a little 3.0-No, not limited at all	Physical Functioning
Climbing several flights of stairs	1.0-yes, limited a lot 2.0-yes, limited a little 3.0-No, not limited at all	
Walking several blocks	1.0-yes, limited a lot 2.0-yes, limited a little 3.0-No, not limited at all	
How much bodily pain have you had in the past four weeks?	6.0-None 5.4-Very mild 4.2-Mild 3.1-Moderate 2.2-Severe 1.0-Very Severe	Bodily Pain
Would you say that your general health is..	5.0-Excellent 4.4-Very good 3.4-Good 2.0-Fair 1.0-Poor	General Health
During the past four weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, neighbors or groups?	5.0-Not at all 4.0-Slightly 3.0-Moderately 2.0-Quite a bit 1.0-Extremely	Social Functioning
<i>How much of the time during the past four weeks have you..</i>		
Felt calm and peaceful?	6-All of the time 5-Most of the time 4-Good bit of the time 3-Some of the time 2-Little of the time 1-None of the time	Mental Health

Felt downhearted and blue?	1-All of the time 2-Most of the time 3-Good bit of the time 4-Some of the time 5-Little of the time 6-None of the time	
Been a happy person?	6-All of the time 5-Most of the time 4-Good bit of the time 3-Some of the time 2-Little of the time 1-None of the time	
Felt full of pep?	6-All of the time 5-Most of the time 4-Good bit of the time 3-Some of the time 2-Little of the time 1-None of the time	Vitality

Additionally, a number of variables, which were described in the previous section, will be examined. In order to determine whether or not other factors are associated with socioeconomic status in this population, previously unexplored variables also will be examined.

A multiple linear regression analysis was employed to evaluate the association between each measure of SES and health-related quality of life. Socioeconomic related explanatory variables under investigation were classified into five distinct categories; demographic characteristics, health behaviors, health-related attitudes and beliefs and access to/satisfaction with current healthcare. Each category includes variables that have been investigated in previous research, or have been implicated as possible effect variables. The specific variables included in these categories are listed in Table 3.

Table 3. Variables Included in SES/QOL Analysis

Demographics	Health Beliefs and Attitudes	Access to Healthcare
▪ Gender ▪ Age ▪ Race ▪ Marital Status	<i>What grade do you think children should be taught about</i> ▪ AIDS ▪ Family Violence ▪ Drugs and Alcohol ▪ Pregnancy and STDs ▪ Cigarettes and Smokeless Tobacco ▪ Would you encourage a sexually active teen to use a condom? ▪ Do you have a fire escape plan for your household? ▪ Have you had your house checked for radon? ▪ Do you wear a seatbelt?	▪ Insurance coverage ▪ When was your last checkup? ▪ Did you seek medical care in the past year? ▪ Do you have a usual source of medical care? ▪ How far is it to your usual source of care? ▪ Are you satisfied with your usual source of care? ▪ Why aren't you satisfied? ▪ Why don't you have a usual source of care? ▪ Where would you go if you needed care? ▪ Is the location of your doctor's office convenient? ▪ Are the hours convenient? ▪ Access to specialists? ▪ Access to hospitals? ▪ Can you make appointments by phone? ▪ Do you have to wait a long time in the office? ▪ Do you have to wait too long between when you make an appt and the appt? ▪ Do you have access to care when you need it? ▪ Can you get prescriptions filled?
Health Behaviors ▪ Smoking ▪ Alcohol ▪ Exercise		
Health Conditions ▪ Body Mass Index greater than 25 ▪ High Blood Pressure ▪ High Cholesterol ▪ Diabetes		

CHAPTER 6

RESULTS OF ANALYSIS

A multiple regression analysis was utilized in order to investigate health-related quality of life as a graded outcome. This was viewed as the most accurate way to represent QOL since it is possible to be at any level of quality of life. Four models were created each looking at a different measure of socioeconomic status. Income, educational attainment and occupational status were used individually and combined into a single model.

In preliminary univariate analyses, the regression analysis revealed that low income, unemployment and less than a high school education were each, independently and significantly associated with a reduced health-related quality of life. Low income, unemployment and less than a high school education were associated with 0.36, 0.36 and 0.21 increment increases in logQOL respectively. When each of the SES variables were controlled for each other in a single model, the associations with QOL were smaller, but still significant; low income (0.31), unemployment (0.30) and less than a high school education (0.19).

Two demographic variables age and gender, were found to be inversely associated with health-related quality of life. Each year increase in age was significantly associated ($p < .01$) with a decrease in quality of life in each of the four models. Additionally, being female was associated with a decrease in quality of life in each model. A number of health-related conditions were also found to be inversely associated with the outcome variable. Diabetes, high cholesterol and a body mass index greater than 25 were related to QOL in every model.

Each indicator of SES was investigated independently in association with health-related quality of life. The potential explanatory variables were added to the model one at a time. If the variable was significantly associated with QOL ($p < .01$) it was left in the model. The results are shown in Table 4.

When all three socioeconomic variables were included in the model; age, gender, being diabetic, having high cholesterol and having a body mass index of 25 or greater were all significantly associated with a reduced health-related quality of life. In addition, not being satisfied with the hours the doctor's office is open and access to a specialist if needed were also significantly associated with QOL.

Dissatisfaction with making arrangements for medical care by phone was significantly associated with logQOL (0.08) in the unemployed group only. Additionally, dissatisfaction with the ability to get medical information or advice by phone was associated with low income and low educational attainment (0.13, 0.15). Dissatisfaction with length of time you wait between making an appointment for routine care and the day of your visit was significantly associated with logQOL in both Model 2 (0.11) and Model 3 (0.11). Both of these Models revealed a significant association with not having had a routine check up in the past year (0.13, 0.12).

Table 4. Multivariate Linear Regression Coefficients for Variables Explaining logQOL

Variables	Model 1	Model 2	Model 3	Model 4
Low Income	0.32	--	--	0.29
Less than high school education	--	0.19	--	0.15
Unemployed	--	--	0.36	0.32
Age	0.004	0.005	0.0042	0.004
Gender	0.093	0.098	0.10	0.11
High Cholesterol	0.12	0.13	0.12	0.14
Diabetic	0.36	0.38	0.39	0.36
BMI > 25	0.12	0.15	0.13	0.12
Did you seek medical care in the past year?	0.19	0.32	0.28	NS
How satisfied are you with the....				
...arrangements for making appointments for medical care by phone?	NS	NS	0.079	NS
...availability of medical information or advice by phone?	0.13	0.15	NS	NS
...length of time you wait between making an appointment for routine care and the day of your visit?	NS	0.11	0.11	NS
...your access to medical care whenever you need it?	0.15	0.17	0.21	NS
...hours when the doctor's office is open?	NS	NS	NS	0.14
...access to the care of a specialist when you need it?	NS	NS	NS	0.21
Has it been more than a year since your last routine check up?	NS	0.13	0.12	NS

Model 1 includes low income as the only measure of socioeconomic status

Model 2 includes less than a high school education as the only measure of socioeconomic status

Model 3 includes unemployment as the only measure of socioeconomic status

Model 4 includes low income, less than a high school education and unemployment

CHAPTER 7

DISCUSSION

A comprehensive review of current literature on the topic of socioeconomic status and health has revealed that this remains a complicated relationship. The Northern Michigan data were an attempt to combine many of the elements of current literature into the analysis of data from a single case study. In most of the research a specific measure of health, such as a cardiovascular event, or mortality are used as the outcome. The current case study used a health outcome that was very broad and inclusive. It was intended that this measure of health-related quality of life would be a better predictor of health in general. The rationale for using this outcome was similar to that used by Davis, Graham and Pearce in their investigation of health expectancy in New Zealand ⁶, select a measure of health that can be modified. This raises the concern raised by the drift hypothesis that a poor health event could lead to a reduction in SES.

Northern Michigan Investigation

The Northern Michigan data revealed interesting results, some of which have been corroborated in the literature, others of which have not. From these data there are three categories that appear to impact health-related quality of life. The first of these is demographics, the second of which is access to medical care, and finally health conditions.

In terms of demographics, it was not unusual to observe that increased age was associated with a reduced health-related quality of life. A number of factors, including reduced activity, contribute to the aging process, which is

associated with a reduction in health. A more interesting, unexpected observation is a reduction in health-related quality of life in the female population. Given the fact that females contributed more than half of the survey population and half of the population in general, this is a noteworthy effect. Thinking in terms of the other factors that were found to be associated with health-related quality of life, this begins to make more sense. Although not true in every case, women, are more likely to arrange for their own or family's medical care. Therefore, their experience in regards to access to care may be greater and may have a wider range of negative experiences from which to draw. A gender specific investigation was not conducted in this analysis, but future research could further explore this issue.

Another category that was not surprisingly related to a reduction in quality of life was existent health conditions, specifically; high cholesterol, diabetes and a body mass index greater than 25. It is interesting to note that low physical activity was not found to be inversely related to health-related quality of life, suggesting that perhaps diet and genetics plays a much larger role in quality of life.

Additionally, a number of aspects of access to care were found to be significantly related to a reduced quality of life. Specifically, relationships with the physician and their office procedures seemed to be of concern. This is reflective of some of the current literature. People of lower socioeconomic status may be a lower priority to physicians, who may make their patients wait for appointments before and when they get to their office. Interestingly enough, insurance coverage was not found to be associated with a reduced quality of life,

so inaccessibility does not appear to be an issue of inability to pay. Unfortunately, it appears as though physicians do not make themselves accessible, either in person or by phone, to people who are in need of their services.

The investigation by Green revealed that physician attitudes and activities were influenced by their perception of the patient's status or understanding.²⁰ If this is indeed the case, it can be reasonably assumed that physician attitudes and behaviors towards people with lower income, educational attainment and employment status is in part responsible for the reduction in health that has been consistently observed among this population. Not only does not having access to medical care cause health to be poor directly, lower SES populations are made to feel worse because they are not valued by physician's, which contributes directly to their quality of life, and more indirectly to their health in general. If further research determines that this is a major contributory factor in the reduction in health-related quality of life, unfortunately there is little that can be done by the low SES populations themselves. Emphasis must be put on educating physicians about the influence their attitudes and behavior can have on the health of so many people.

The socioeconomic indicator that led to the greatest changes in quality of life was unemployment. Along the same lines as the access to care question, this population may be unhappy due to their inability to find a job, or having lost their job. This may contribute to their reduction in quality of life and perhaps inability to utilize medical resources. Since these are cross sectional data, this may reflect a temporary reduction in their quality of life only.

There are limitations to the conclusions that can be drawn from these data based on the fact that they are cross sectional. Time order is the greatest concern, it is not known between QOL and SES, which precedes the other. Since cross sectional data are the fastest and most convenient to obtain, it is the most efficient way for public health officials to collect information on their communities.

Socioeconomic Status

An important issue that should be addressed is the definition of socioeconomic status. Social class, government classification, educational level attained, income, asset ownership, occupation and neighborhoods of residence are all used as indicators of socioeconomic status. Although it is advantageous that there are many ways to gather socioeconomic information, unfortunately these measures individually do not always reflect each other. This investigation observed the effects of three aspects of SES independently. This was the approach taken because the majority of the literature indicated that income, occupation and education operated quite differently in association with SES.

Sometimes, education is a much stronger predictor of health than income, though in many cases, income is directly related to education. These are issues that should be addressed separately for each investigation, but they make comparing research much more difficult. If the goal is to impact the health of these low SES populations, it is important to know whom, exactly, to target.

Measures of Health

As has been shown in the literature, specific measures of health, such as: mortality, cancer or cardiovascular events are commonly utilized. This is the

most convenient way to measure health, and perhaps the most accurate, but once an individual is seriously ill, or dead, there is no longer anything that can be done to improve their health. This is highly significant from a public health perspective, preventing poor health is more practical, economical and efficient than treating poor health, especially in lower SES populations.

The health-related quality of life outcome measure that was used in this analysis covered a wide range of health-related issues. When the intention is to prevent poor health, it is unrealistic to target only those with very low quality of life, supporting the rationale for using a linear regression analysis, expressing QOL as a continuous variable. A gradient of SES in association with health has been observed, a health gradient in association with SES can also be observed. Various levels of quality of life could lead, potentially, to varying degrees of ill health in the future. The current approach to studying health and SES focuses on the very extreme end of health. A more broad approach to health, such as this quality of life measure or health expectancy, could target high-risk people before they get sick, or sicker. Focusing merely on populations who are very ill is not useful to study in terms of prevention, which should be the goal of public health. Health-related quality of life is a potential indicator of future poor health. Further study of variables like this could uncover a great deal of useful prevention interventions.

CHAPTER 8

FUTURE DIRECTIONS

Based on the information revealed in this investigation, there are many directions that can be taken for future research. There are two that have the potential to have the most impact on the lives of those of lower SES, measures of socioeconomic status and measures of health.

The intent of the investigation into the Northern Michigan population was to elucidate etiologic factors in the relationship between SES and health-related quality of life. Many etiologies were considered, most of them suggested by the literature. The type of outcome variable that was used is still very new to and unexplored in socioeconomic research. Based on the research that has previously explored the SES/health relationship, it is clear that there is still little that is known about what causes lower SES populations to be less healthy. Quality of life may have a cumulative effect on health. Investigations into psychosocial status of lower socioeconomic populations while they are still healthy may provide a better insight into why they are more likely to get sick. Quality of life instruments should be altered and improved to measure quality of life in the general population. In addition, this measure could potentially be incorporated into routine physicals or yearly exams as a vital sign, similar to blood pressure or respiration.

Additional questions that these data revealed are relative to specific etiologies. A suggestion for future research is to investigate male/female differences in quality of life. These data reveal that there may be more of a health effect of low SES on males than there is on females. Another area that is

perhaps more difficult to research is genetic disposition and/or exposure to long term poor health and low socioeconomic status. This could involve researching trends in health and SES within extended and generations of families. It should be determined if this is indeed a familial concern and if it is, whether it is a cycle of behavior that needs to be broken, or a genetic predisposition that is more difficult to escape. Clearly, further investigation must be undertaken into the attitudes of physicians towards lower SES populations and the effect this has on the patient. An observational study is likely the best way to research this issue, because it is unlikely that a physician will admit in a survey that they treat people differently based on their income or education. It is not merely an issue of pride, but more likely an unawareness of the biases they possess. Based on this investigation, physician attitudes may be a most interesting direction of research.

The definition of socioeconomic status is more difficult issue with which to deal. Each measure of SES reflects very different aspects of a person's life. Additionally, socioeconomic research is conducted worldwide, where very different indicators of SES may be appropriate. It is clear that for each study question and each population, the indicator of interest will be different. In order to maintain consistency for comparative purposes, an index of socioeconomic status could be developed. It could be a composite measure, which could be altered for the population being studied. For instance, in a less developed country, a measure of assets that are available to trade or sell, such as livestock, could be a measure of income that is equivalent to a measure of income in a more developed country. This type of index would require a great deal of expertise in the areas of health, economics and sociology, but could be highly

effective in elucidating similarities that exist among less advantaged populations worldwide. To date, little research has been done comparing populations in countries that are very different from each other. This is a weakness of socioeconomic research, as it ignores a wealth of information that may hold the key to unraveling these questions.

This investigation has been enlightening in revealing the discrepancies that exist in socioeconomic research. It is unfortunate that the health issues of such a large segment of the population worldwide are not being addressed because not enough is known about them. It is clear that a majority of the problem is that these less advantaged people cannot be identified because the methods used to measure socioeconomic status is so varied and inconsistent. Since the people who are most in need cannot be adequately identified, it is difficult to study what the true reasons are for their special problems.

In recent years, researchers have attempted to develop new ways to study the health of populations in association with social status, it is essential to continue with this type of research. Years of traditional investigation has revealed little about reduced health and increased mortality in low SES groups. It is very clear that innovative methods must be employed in order to get to the root of this longstanding problem.

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APPENDIX

(INTERVIEWER: MAKE SURE YOU ARE TALKING TO SOMEONE 18 OR OLDER)

Hello, this is _____ calling on behalf of
District Health Department Number #
which covers COUNTY NAME
county and the hospitals in your area. The health department and
hospitals are collaborating on an important survey to learn about
the health status and health practices of adults and children in
your area. This information is required so that useful services and
programs can be developed to better meet your community's needs.

Your number has been chosen randomly to be included in the study.

Have I reached (###) - ### - #### ?

1. CONTINUE

7. RETURN TO COVER SHEET (RNA, ANS MACH, REF, ETC.) --> ABORT

BUSINESS.CHECK

Is this a household or a business?

(PROBE FOR BEST ESTIMATE)

1. RESIDENCE (OR COMBINED RESIDENCE AND BUSINESS)
 2. BUSINESS -----> BUSINESS
 3. NONRESIDENTIAL NUMBER OR INELIGIBLE RESIDENCE ----> NONRES
(DO NOT READ)
- DK (OR APPT)
REF

COUNTY.CHECK

What county do you live in?

- | | |
|--------------------|-----------------|
| 01. CHARLEVOIX | 12. ALCONA |
| 02. EMMET | 13. OSCODA |
| 03. ANTRIM | 14. OGEHAW |
| 04. OTSEGO | 15. IOSCO |
| 05. GRAND TRAVERSE | 16. CRAWFORD |
| 06. LEELANAU | 17. KALKASKA |
| 07. BENZIE | 18. MISSAUKEE |
| 08. CHEBOYGAN | 19. WEXFORD |
| 09. PRESQUE ISLE | 20. MANISTEE |
| 10. ALPENA | 21. ROSCOMMON |
| 11. MONTMORENCY | 22. OTHER _____ |

(PROBE FOR *COUNTY*)

DK
REF

QZIP

What is your zip code?

(PROBE FOR BEST ESTIMATE)

DK (OR APPT)
REF

PREFACE.2

I want to assure you that your answers will be kept STRICTLY CONFIDENTIAL. Your participation is voluntary but each unanswered question lessens the accuracy of the final data.

No information which identifies you or anyone else in your household will ever be released or published. The information will be used to identify health needs in your city or county.

QN18

Our study requires that we begin by interviewing only one adult, randomly selected to represent all the adults in your household.

How many members of your household, including yourself, are 18 years of age or older?

(INTERVIEWER: WE ARE ASKING ABOUT PEOPLE WHO LIVE THERE AT THE TIME OF CONTACT. PRESS "TAB" TO SEE THE HELP SCREEN FOR THIS QUESTION)

____ # OF PEOPLE OVER 18 (ENTER 20 IF 20 OR MORE)
DK (OR APPT)
REF

QA1

How many members of your household are men?

____ (NUMBER)
DK OR APPT

QA2

How many members of your household are women?

____ (NUMBER)
DK OR APPT

QA3

Who is the oldest man who presently lives in your household?

(IWER: IN CASE INFORMANT HESITANT, LET PERSON KNOW THAT NICKNAMES ARE ACCEPTABLE, AS LONG AS WE HAVE A WAY OF IDENTIFYING THE PERSON WE WANT TO TALK TO, INCLUDING PHRASES LIKE FATHER, BROTHER, UNCLE, OR OLDEST MAN)

QA4

Who is the next oldest man who presently lives in your household?

(IWER: IN CASE INFORMANT HESITANT, LET PERSON KNOW THAT NICKNAMES ARE ACCEPTABLE, AS LONG AS WE HAVE A WAY OF IDENTIFYING THE PERSON WE WANT TO TALK TO, INCLUDING PHRASES LIKE FATHER, BROTHER, UNCLE, OR SECOND OLDEST MAN)

(REPEAT QUESTION FOR EACH OF REMAINING MEN.)

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____

OK

QA5

Who is the oldest woman who presently lives in your household?

(IWER: IN CASE INFORMANT HESITANT, LET PERSON KNOW THAT NICKNAMES ARE ACCEPTABLE, AS LONG AS WE HAVE A WAY OF IDENTIFYING THE PERSON WE WANT TO TALK TO, INCLUDING PHRASES LIKE MOTHER, SISTER, AUNT, OR OLDEST WOMAN)

QA6

Who is the next oldest woman who presently lives in your household?

(IWER: IN CASE INFORMANT HESITANT, LET PERSON KNOW THAT NICKNAMES ARE ACCEPTABLE, AS LONG AS WE HAVE A WAY OF IDENTIFYING THE PERSON WE WANT TO TALK TO, INCLUDING PHRASES LIKE MOTHER, SISTER, AUNT, OR SECOND OLDEST WOMAN)

(REPEAT QUESTION FOR EACH OF REMAINING WOMEN.)

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____

OK

THE FOLLOWING IS READ IF THERE IS ONLY ONE ADULT IN THE HOUSEHOLD

ONE.PERSON.NAME

May I have that person's first name please?

(IWER: IN CASE INFORMANT HESITANT, LET PERSON KNOW THAT NICKNAMES
ARE ACCEPTABLE, AS LONG AS WE HAVE A WAY OF IDENTIFYING
THE PERSON WE WANT TO TALK TO, INCLUDING PHRASES LIKE
FATHER, MOTHER, BROTHER, SISTER, UNCLE, AUNT OR ME)

QGET

"The person in your household that I need to speak with is..."
RESPONDENT NAME

1. RESPONDENT SELECTED IS ALREADY ON PHONE
2. RESPONDENT SELECTED COMES TO PHONE
3. RESPONDENT SELECTED IS UNAVAILABLE (MAKE AN APPT)
4. INFORMANT ON PHONE REFUSES TO COOPERATE FURTHER

INTRO1 IS READ FOR INFORMANTS WHO ARE RESPONDENTS

INTRO1

(INTERVIEWER: READ THIS ONLY IF IT IS A CALLBACK AND R IS UNFAMILIAR WITH STUDY: I want to assure you that your answers will be kept STRICTLY CONFIDENTIAL. Your participation is voluntary but each unanswered question lessens the accuracy of the final data. No information which identifies you or anyone else in your household will ever be released or published. The information will be used to identify health needs in your city or county.)

Great, you are the person I am supposed to interview.

INTRO2 IS READ FOR RESPONDENTS WHO COME TO PHONE

INTRO2

Hello, this is _____ calling on behalf of the
COUNTY NAME
County Department of Health and the hospitals in your area. The health department and hospitals are collaborating on an important survey to learn about the health status and health practices of adults and children in your area. This information is required so that useful services and programs can be developed to better meet your community's needs.

Your number has been chosen randomly to be included in the study, and you were randomly selected from all adults 18 or older living in your residence.

I want to assure you that your answers will be kept STRICTLY CONFIDENTIAL. Your participation is voluntary, but each unanswered question lessens the accuracy of the final data. No information which identifies you or anyone else in your household will ever be released or published.

INTRO.DEMO

First, I would like to ask some general background questions about you.

(PRESS SPACE BAR TO CONTINUE)

Q.AGE

What is your age?

____ YEARS (ENTER 97 IF 97 IF MORE)
OK
REF

Q.GEN

(GENDER OF RESPONDENT: DO NOT ASK UNLESS UNSURE)

(IWER: IF NECESSARY, "Just to be sure, I need to ask whether you are male or female.")

1. MALE
2. FEMALE
- DK
- REF

QOCC

Are you currently. . .

(READ LIST. ACCEPT ONE RESPONSE ONLY.)

01. Employed for wages,
02. Self-employed,
03. Out of work for more than one year,
04. Out of work for less than one year,
05. A Homemaker,
06. A Student,
07. Retired, or
08. Are you unable to work?

DK
REF

Q1

Now I'd like to ask some general questions about your health.

First, would you say that in general your health is EXCELLENT, VERY GOOD, GOOD, FAIR or POOR?

1. EXCELLENT
2. VERY GOOD
3. GOOD
4. FAIR
5. POOR

Q2

Now thinking about your physical health, which includes physical injury and illness, for how many days during the past 30 days was your physical health NOT good?

— DAYS

Q3

Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health NOT good?

__ DAYS

IF Q2 AND Q3 ARE BOTH ZERO DAYS, THEN GO TO Q5.A

Q4

During the past 30 days, for about how many days did POOR physical or mental health prevent you from doing your usual activities, such as self-care, work, or recreation?

__ DAYS

Q5.A

The following items are about activities you might do during a typical day. Does your health now limit you in these activities A LOT, A LITTLE, or NOT AT ALL?

How about...

Lifting or carrying groceries?

Does your health now limit you in this activity A LOT, A LITTLE, or NOT AT ALL?

1. A LOT
2. A LITTLE
3. NOT AT ALL

DK
REF

Q5.8

(How about...)

Climbing several flights of stairs?

(Does your health now limit you in this activity A LOT, A LITTLE, or NOT AT ALL?)

1. A LOT
2. A LITTLE
3. NOT AT ALL

DK
REF

Q5.C

(How about...)

Walking several blocks?

(Does your health now limit you in this activity A LOT, A LITTLE,
or NOT AT ALL?)

1. A LOT
2. A LITTLE
3. NOT AT ALL

DK
REF

Q8

During the past four weeks, to what extent has your physical health
or emotional problems interfered with your normal social activities
with family, neighbors, or groups? Would you say NOT AT ALL, SLIGHTLY,
MODERATELY, QUITE A BIT, or EXTREMELY?

1. NOT AT ALL
2. SLIGHTLY
3. MODERATELY
4. QUITE A BIT
5. EXTREMELY

DK
REF

Q9

How much bodily pain have you had during the past 4 weeks?
Would you say NONE, VERY MILD, MILD, MODERATE, SEVERE, or
VERY SEVERE?

1. NONE
2. VERY MILD
3. MILD
4. MODERATE
5. SEVERE
6. VERY SEVERE

DK
REF

Q10.A

These questions are about how you feel and how things have been with you. How much of the time during the past four weeks did you feel FULL OF PEP?

Would you say ALL OF THE TIME, MOST OF THE TIME, A GOOD BIT OF THE TIME, SOME OF THE TIME, or A LITTLE OF THE TIME?

1. ALL OF THE TIME
 2. MOST OF THE TIME
 3. A GOOD BIT OF THE TIME
 4. SOME OF THE TIME
 5. A LITTLE OF THE TIME
 6. NONE OF THE TIME/NEVER (DO NOT READ)
- DK
REF

Q10.B

How much of the time during the past four weeks have you felt CALM AND PEACEFUL?

Would you say ALL OF THE TIME, MOST OF THE TIME, A GOOD BIT OF THE TIME, SOME OF THE TIME, or A LITTLE OF THE TIME?

1. ALL OF THE TIME
 2. MOST OF THE TIME
 3. A GOOD BIT OF THE TIME
 4. SOME OF THE TIME
 5. A LITTLE OF THE TIME
 6. NONE OF THE TIME/NEVER (DO NOT READ)
- DK
REF

time during the past four weeks
DOWNHEARTED AND BLUE?

say ALL OF THE TIME, MOST OF THE TIME, A GOOD BIT OF THE
TIME, SOME OF THE TIME, or A LITTLE OF THE TIME?)

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME/NEVER (DO NOT READ)

DK
REF

Q10.D

How much of the time during the past four weeks
have you been a HAPPY PERSON?

(Would you say ALL OF THE TIME, MOST OF THE TIME, A GOOD BIT OF THE
TIME, SOME OF THE TIME, or A LITTLE OF THE TIME?)

1. ALL OF THE TIME
2. MOST OF THE TIME
3. A GOOD BIT OF THE TIME
4. SOME OF THE TIME
5. A LITTLE OF THE TIME
6. NONE OF THE TIME/NEVER (DO NOT READ)

DK
REF

Q11

Currently when you receive medical care what insurance or type
of prepaid plans pay at least some of the costs of this care?

(SELECT ALL THAT APPLY) (NOTE: READ LIST ONLY IF NEEDED)

1. MEDICARE,
 2. MEDICAID OR STATE WELFARE,
 3. BLUE CROSS BLUE SHIELD, or
 4. OTHER PRIVATE INSURANCE,
 5. an HMO, or HEALTH MAINTENANCE ORGANIZATION,
 6. a PPO, or PREFERRED PROVIDER ORGANIZATION,
 7. or some OTHER type of insurance? (SPECIFY) _____
 8. NONE
- DK
REF

Q12

About how long has it been since you had health care coverage?

(PROBE FOR BEST ESTIMATE)
 (ODY = NEVER)
 (IF < 1 DY ROUND UP TO 1 DY)

 * CORRECT UNITS ARE AS FOLLOWS: *

 * DAYS --> DY WEEKS --> WK *
 * MONTHS --> MO YEARS --> YR *

 _____ DAYS, WEEKS, MONTHS, YEARS
 DK
 REF

Q13

Was there a time during the last 12 months when you needed to see a doctor, but could not because of the cost?

1. YES
2. NO

DK
 REF

Q14

About how long has it been since you last visited a doctor for a routine checkup?

(PROBE FOR BEST ESTIMATE)
 (ODY = NEVER)
 (IF < 1 DY ROUND UP TO 1 DY)

 * CORRECT UNITS ARE AS FOLLOWS: *

 * DAYS --> DY WEEKS --> WK *
 * MONTHS --> MO YEARS --> YR *

 _____ DAYS, WEEKS, MONTHS, YEARS
 DK
 REF

Q15

Did you seek medical care in the past year?

1. YES
2. NO

DK
REF

Q16

Do you have somewhere you usually go to if you need medical care?

1. YES
2. NO ----> Q20

DK -----> PREQ21
REF

Q17

How many minutes or hours does it take you to travel to your usual source of medical care?

(INTERVIEWER: ENTER XX HR XX MI)

(481 MI = MORE THAN 480 MINUTES OR 8 HOURS)

* CORRECT UNITS ARE AS FOLLOWS: *

* MINUTES --> MI HOURS --> HR *

_____ HOURS OR MINUTES

DK

Q18

Overall, how satisfied are you with the service you receive from your usual source of medical care? Would you say you are VERY SATISFIED, SOMEWHAT SATISFIED, OR NOT SATISFIED?

1. VERY SATISFIED -----> PREQ21
2. SOMEWHAT SATISFIED
3. NOT SATISFIED

DK -----> PREQ21
REF

Q19

Which of the following is the MAIN reason that you are not very satisfied with the service you receive from your usual source of medical care? Would you say...

(READ LIST. SELECT ONE ONLY)

1. You wait too long,
 2. Your doctor doesn't explain things,
 3. You often do not see the same physician,
 4. It is too impersonal, or
 5. some OTHER reason? (SPECIFY) _____
- DK
REF

Q20

Which of the following is the MOST IMPORTANT reason you don't have a usual source of medical care? Would you say...

(READ LIST. SELECT ONE ONLY)

1. You seldom get ill,
 2. You are new to the area,
 3. Your usual source of care is no longer available,
 4. You go to different places for care,
 5. You have no way to pay for services, or
 6. some OTHER reason (SPECIFY) _____
- DK
REF

Q21

Which of the following would you go to if you needed medical care? Would you say....

(READ LIST. SELECT ONE ONLY)

1. A hospital emergency room,
 2. An urgent care clinic,
 3. A neighborhood clinic,
 4. A local health department,
 5. or some OTHER place (SPECIFY) _____
- DK
REF

Q22.A

The following set of questions are about arranging for and getting health care. Based upon your experience, please rate each item as POOR, FAIR, GOOD, VERY GOOD, OR EXCELLENT.

(How about...)

The convenience of the location of your doctor's office?

Would you say

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.B

(How about...)

The hours when the doctor's office is open?

(Would you say...)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.C

(How about...)

Access to the care of a specialist if you need it?

(Would you say...)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.D

(How about...)

Access to hospital care if you need it?

(Would you say....)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.E

(How about...)

Arrangements for making appointments for medical care by phone?

(Would you say)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.F

(How about...)

The length of time spent waiting at an office to see the doctor?

(Would you say)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.G

(How about...)

The length of time you wait between making an appointment for routine care and the day of your visit?

(Would you say)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.H

(How about...)

The availability of medical information or advice by phone?

(Would you say ...)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.I

(How about...)

Your access to medical care whenever you need it?

(Would you say ...)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q22.J

(How about...)

Services being available for getting prescriptions filled?

(Would you say ...)

(INTERVIEWER: NOTE THE DIFFERENT SCALE)

1. POOR
2. FAIR
3. GOOD
4. VERY GOOD
5. EXCELLENT

DK
REF

Q23

About how long has it been since you last had your blood pressure taken by a doctor, nurse or other health professional?

(PROBE FOR BEST ESTIMATE)
 (0DY = NEVER)
 (IF < 1 DY ROUND UP TO 1 DY)

 * CORRECT UNITS ARE AS FOLLOWS: *

 * DAYS --> DY WEEKS --> WK *
 * MONTHS --> MO YEARS --> YR *

 _____ DAYS, WEEKS, MONTHS, YEARS
 DK
 REF

Q24

Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?

1. YES
2. NO

DK
 REF

Q25

Blood cholesterol is a fatty substance found in the blood. Have you ever had your blood cholesterol checked?

1. YES
2. NO ----> Q28

DK -----> Q28
 REF

Q26

About how long has it been since you last had your blood cholesterol checked?

(PROBE FOR BEST ESTIMATE)
(00Y = NEVER)
(IF < 1 DY ROUND UP TO 1 DY)

* CORRECT UNITS ARE AS FOLLOWS: *

* DAYS --> DY WEEKS --> WK *
* MONTHS --> MO YEARS --> YR *

_____ DAYS, WEEKS, MONTHS, YEARS
DK
REF

Q27

Have you ever been told by a doctor, nurse or other health professional that your blood cholesterol is too high?

1. YES
2. NO

DK
REF

Q28

Have you ever been told by a doctor, nurse or other health professional that you have diabetes?

1. YES
2. ONLY WHEN PREGNANT
3. NO

DK
REF

QWGT

About how much do you weigh without shoes?

___ WEIGHT IN POUNDS ROUND FRACTIONS UP

DK
REF

QTALL

About how tall are you without shoes?

(INTERVIEWER: ENTER XX FT XX IN)

(97 IN = MORE THAN 96 INCHES OR 8 FEET)

* CORRECT UNITS ARE AS FOLLOWS: *

* INCHES --> IN FEET --> FT *

_____ FEET, INCHES

DK
REF

QLOSE

Are you now trying to lose weight?

1. YES --> PREEAT
2. NO

DK
REF

QKEEP

Are you now trying to maintain your current weight, that is
to keep from gaining weight?

1. YES
2. NO ----> PREEX

DK -----> PREEX
REF

QEAT

Are you eating either FEWER CALORIES or LESS FAT to
lose weight/keep from gaining weight (depending on R's response) ?

(PROBE FOR WHICH ONE OR BOTH: Would that be fewer calories or less
fat? OR Which would that be,...)

1. YES FEWER CALORIES
2. YES LESS FAT
3. YES FEWER CALORIES AND LESS FAT
4. NO

DK
REF

QEXLOS

Are you using physical activity or exercise to
lose weight/keep from gaining weight (depending on R's response) ?

1. YES
2. NO

DK
REF

QMOOEX

In an average week, on how many days out of seven do you get
30 MINUTES or more of AT LEAST MODERATE exercise, over the course
of the entire day? Brisk walking and moving somewhat heavy
materials are examples of moderate exercise. This exercise can take
place over one 30 minute period or even over as many as four
periods of 7 or 8 minutes each.

___ NUMBER OF DAYS PER WEEK GET AT LEAST MODERATE EXERCISE

DK
REF

Q39

Have you smoked at least 100 cigarettes in your entire life?
(IF ASKED: 100 CIGARETTES = APPROXIMATELY 5 PACKS)

1. YES
2. NO ----> PREQ44
- DK -----> PREQ44

Q40

How old were you when you FIRST started smoking fairly regularly?

___ ENTER AGE

DK
REF

Q41

Do you smoke cigarettes now?

1. YES
2. NO ----> Q43

DK -----> Q43
REF

Q42

On the average, how many cigarettes do you NOW
smoke a day?

_____ NUMBER OF CIGARETTES

DK

REF

Q43

How long has it been since you last smoked
cigarettes regularly, that is, daily?

(PROBE FOR BEST ESTIMATE)

(IF < 1 DY ROUND UP TO 1 DY)

* CORRECT UNITS ARE AS FOLLOWS: *

* DAYS --> DY WEEKS --> WK *
* MONTHS --> MO YEARS --> YR *

_____ DAYS, WEEKS, MONTHS, YEARS

DK

REF

QALC1

During the past month, have you had at least one drink of any
alcoholic beverage such as beer, wine, wine coolers, or liquor?

(IF NEEDED, PROBE "AS BEST AS YOU CAN RECALL")

1. YES
2. NO ----> QALC6
- DK -----> QALC6

QALC2

During the past month, on about how many days per week or month
did you drink any alcoholic beverages?

_____ ENTER DAYS HERE, AND UNIT OF TIME ON NEXT SCREEN
DK

QALC.UNIT

(DO NOT READ UNLESS RESPONDENT DOES NOT MENTION UNIT OF TIME)

Was that [] day(s) per week or per month?

(ENTER THE UNIT OF TIME THE RESPONDENT MENTIONED IN QALC2: WAS IT
DAYS PER WEEK OR PER MONTH?)

1. PER WEEK
2. PER MONTH

DK

REF

QALC3

A drink is one can or bottle of beer, 1 glass of wine, 1 can or bottle of wine cooler, 1 cocktail, or 1 shot of liquor.

On the day/s when you drank, about how many drinks did you drink on the average?

___ NUMBER OF DRINKS (IF OVER 97, ENTER 97)

DK
REF

QALC4

Considering all types of alcoholic beverages, how many times during the past month did you have 5 or more drinks on an occasion?

(IF NEEDED: By an occasion, we mean at the same time, or within a couple of hours of each other.)

___ NUMBER OF TIMES (IF OVER 97, ENTER 97)

DK
REF

QALC5

During the past month, how many times have you driven when you've had perhaps too much to drink?

___ NUMBER OF TIMES

96. 96 OR MORE

97. DOES NOT DRIVE

DK
REF

QALC6

During the past month, how many times have you ridden with a driver who has had perhaps too much to drink?

___ NUMBER OF TIMES (IF OVER 97, ENTER 97)

DK
REF

MAM

A mammogram is an X-ray of each breast to look for cancer. Have you ever had a mammogram?

1. YES
2. NO ----> CLINBR
- DK -----> CLINBR
- REF

MAMLONG

How long has it been since you had your last mammogram?

(PROBE FOR BEST ESTIMATE)

(IF < 1 DY ROUND UP TO 1 DY)

0 DY = NEVER HAD A MAMMOGRAM

* CORRECT UNITS ARE AS FOLLOWS: *

* DAYS --> DY WEEKS --> WK *

* MONTHS --> MO YEARS --> YR *

_____ DAYS, WEEKS, MONTHS, YEARS

- DK
- REF

MAMWHY

Was your last mammogram done as part of a routine checkup, because of a breast problem other than cancer, or because you've already had breast cancer?

1. ROUTINE CHECKUP
2. BREAST PROBLEM OTHER THAN CANCER
3. HAD BREAST CANCER

- DK
- REF

CLINBR

A clinical breast exam is when a doctor, nurse, or other health professional feels the breast for lumps. Have you ever had a clinical breast exam?

1. YES
2. NO ----> BCHIST
- DK -----> BCHIST
- REF

CLINLONG

How long has it been since you had your last clinical breast exam?

(PROBE FOR BEST ESTIMATE)

(IF < 1 DY ROUND UP TO 1 DY)

0 DY = NEVER HAD A CLINICAL BREAST EXAM

* CORRECT UNITS ARE AS FOLLOWS: *

* DAYS --> DY WEEKS --> WK *

* MONTHS --> MO YEARS --> YR *

_____ DAYS, WEEKS, MONTHS, YEARS

DK

REF

CLINWHY

Was your last breast exam done as part of a routine checkup, because of a breast problem other than cancer, or because you've already had breast cancer?

1. ROUTINE CHECKUP
2. BREAST PROBLEM OTHER THAN CANCER
3. HAD BREAST CANCER

DK

REF

SCHIST

Including living and deceased, were any of your BLOOD relatives including mother, sister, and grandmothers, ever told by a health professional that they had breast cancer?

1. YES
2. NO

DK

REF

PAP

A Pap smear is a test for cancer of the cervix. Have you ever had a Pap smear?

1. YES
2. NO ----> PREPREG
- DK -----> PREPREG
- REF

PAPLONG

How long has it been since you had your last Pap smear?

(PROBE FOR BEST ESTIMATE)

(IF < 1 DY ROUND UP TO 1 DY)

0 DY = NEVER HAD A PAP SMEAR

* CORRECT UNITS ARE AS FOLLOWS: *

* DAYS --> DY WEEKS --> WK *

* MONTHS --> MO YEARS --> YR *

_____ DAYS, WEEKS, MONTHS, YEARS

DK

REF

PAPWHY

Was your last pap smear done as part of a routine checkup, or to check a current or previous problem?

1. ROUTINE CHECKUP
2. CHECK A CURRENT PROBLEM
3. CHECK A PREVIOUS PROBLEM (PROBE IF NECESSARY)

DK

REF

PREG

To your knowledge, are you now pregnant?

1. YES
2. NO
- DK OR NOT SURE

QCHL.A

How many children live in your household who are
less than 5 years old?

___ NUMBER OF CHILDREN LESS THAN 5 YEARS OLD

DK
REF

THE FOLLOWING QUESTION IS FOR RESPONDENTS WHO ANSWERED > 0 TO
THE PREVIOUS QUESTION
QCHL.6MO

How many children live in your household who are
between 6 months and 5 years old?

___ NUMBER OF CHILDREN 6 MONTHS TO 5 YEARS OLD

DK
REF

QCHL.B

How many children live in your household who are
5 through 12 years old?

___ NUMBER OF CHILDREN 5 THROUGH 12 YEARS OLD

DK
REF

QCHL.C

How many children live in your household who are
13 through 17 years old?

___ NUMBER OF CHILDREN 13 THROUGH 17 YEARS OLD

DK
REF

QBELT

How often do you use seat belts when you drive or ride in a car?

Would you say ALWAYS, NEARLY ALWAYS, SOMETIMES, SELDOM, or NEVER?

1. ALWAYS
 2. NEARLY ALWAYS
 3. SOMETIMES
 4. SELDOM
 5. NEVER
 6. NEVER DRIVE OR RIDE IN A CAR (DON'T READ)
- DK
REF

QFIRE

Has your family practiced or discussed an escape plan in case of a fire at home?

1. YES
 2. NO
 3. RESPONDENT LIVES ALONE
- DK
REF

QRADON

Have you heard of radon, which is a radioactive gas that occurs in nature?

1. YES
 2. NO ----> PREAID
- DK -----> PREAID
REF

QRADT

Has your household air been tested for the presence of radon gas?

1. YES
 2. NO
- DK
REF

QAID1

If you had a child in school, at what grade do you think
he or she should begin AIDS education in school?

__ GRADE IN WHICH CHILD SHOULD BEGIN AIDS EDUCATION

00 = CHILD SHOULD NEVER BEGIN AIDS EDUCATION

01 FOR KINDERGARTEN AS WELL AS FIRST GRADE

DK
REF

QAID2

At what grade do you think he or she should begin education
for the prevention of pregnancy and sexually transmitted diseases?

__ GRADE IN WHICH CHILD SHOULD BEGIN PREGNANCY EDUCATION

00 = CHILD SHOULD NEVER BEGIN PREGNANCY EDUCATION

01 FOR KINDERGARTEN AS WELL AS FIRST GRADE

DK
REF

QAID3

(At what grade do you think he or she should begin education...)
What about...
education regarding the use of alcohol or drugs?

__ GRADE IN WHICH CHILD SHOULD BEGIN ALCOHOL EDUCATION

00 = CHILD SHOULD NEVER BEGIN ALCOHOL EDUCATION

01 FOR KINDERGARTEN AS WELL AS FIRST GRADE

DK
REF

QAID4

(At what grade do you think he or she should begin education...)
What about...
the use of cigarettes or smokeless tobacco?

___ GRADE IN WHICH CHILD SHOULD BEGIN TOBACCO EDUCATION

00 = CHILD SHOULD NEVER BEGIN TOBACCO EDUCATION

01 FOR KINDERGARTEN AS WELL AS FIRST GRADE

DK
REF

QAID5

(At what grade do you think he or she should begin education...)
What about...
issues of family violence?

___ GRADE IN WHICH CHILD SHOULD BEGIN FAMILY VIOLENCE
EDUCATION

00 = CHILD SHOULD NEVER BEGIN FAMILY VIOLENCE EDUCATION

01 FOR KINDERGARTEN AS WELL AS FIRST GRADE

DK
REF

QAID6

If you had a teenager who was sexually active, would you encourage
him or her to use a condom?

1. YES
2. NO

3. WOULD GIVE OTHER ADVICE
DK
REF

QENV

Which of the following eight environmental problems do you think poses the GREATEST risk to human health in Michigan? Would you say...

(READ LIST. SELECT ONE ONLY)

01. Great Lakes pollution,
02. Contaminated dump sites,
03. Home air pollution,
04. Contaminated fish,
05. Pesticides in food,
06. Radioactive waste,
07. Waste incinerators, or
08. Commercial and residential land development?

DK
REF

QRACE

What is your race? Would you say:

1. WHITE
2. BLACK or AFRICAN AMERICAN
3. ASIAN, PACIFIC ISLANDER
4. AMERICAN INDIAN, ALASKA NATIVE, or
5. are you a MEMBER OF SOME OTHER RACIAL GROUP (SPECIFY) _____

DK
REF

QHISP

Are you of Hispanic or Spanish origin?

1. YES
 2. NO
- DK
REF

QMARR

Are you:

1. MARRIED
2. DIVORCED
3. WIDOWED
4. SEPARATED
5. have you NEVER BEEN MARRIED, or are you
6. a MEMBER OF AN UNMARRIED COUPLE?

DK
REF

QEDUC

What is the highest grade or year of school that you have completed?)

(PROBE FOR YEAR OR GRADE *COMPLETED*)
(READ LIST ONLY IF NECESSARY)

00. NEVER ATTENDED SCHOOL, OR KINDERGARTEN ONLY
01-11. ENTER GRADES 1 THROUGH 11
12. HIGH SCHOOL GRADUATE OR GED
13-15. ENTER SOME COLLEGE
16. COLLEGE GRADUATE
17. SOME GRADUATE SCHOOL
18. MASTERS
19. DOCTORATE

DK
REF

QINC

What was your ANNUAL HOUSEHOLD income from all sources before taxes in 1994?

_____ ANNUAL HOUSEHOLD INCOME IN 1994
999,997=999,997 OR MORE

DK
REF

QPH.1

Do you have more than one telephone number in your household?

1. YES
2. NO ----> END.STATEMENT
DK -----> END.STATEMENT
REF

QPH.2

How many residential telephone numbers do you have?

(IF MORE THAN 1 THEN PROBE WITH: "Then you have (x) different RESIDENTIAL numbers, not extension phones or business numbers".)

_ # OF RESIDENTIAL NUMBERS (IF OVER 7, ENTER 7)
DK
REF

END.STATEMENT

That's my last question. I would like to remind you that
all information will be kept completely confidential. Thank
you very much for your time and cooperation.

(PRESS ANY KEY TO GO TO COVERSHEET)

THE FOLLOWING ARE READ DEPENDING ON THE CIRCUMSTANCES

BUSINESS

We can only interview people whom we reach at households.
Unfortunately, you do not qualify.

I do want to thank you very much for your time, however.

BAD.COMM

As I mentioned earlier, we can only interview people who fall
into certain groups. Unfortunately you do not qualify because
you live outside of the required geographic area.

I do want to thank you very much for your time, however.

NONRES

We can only interview people whom we reach at households.
Unfortunately, you do not qualify.

I do want to thank you for your time, however.

AGE.TERMINATE

As I mentioned earlier, we can only interview people who fall
into certain groups. Unfortunately your household does not
qualify because no one in your household is 18 years of age or
over.

I do want to thank you very much for your time, however.

DK.HHEL

(THANK AND MAKE APPT.)

(IF NECESSARY, ASK WHEN SOMEONE WOULD BE HOME
WHO WOULD KNOW THE INFO ABOUT THE HH)

(IF I DOESN'T KNOW HH INFO. AND IS ONLY PERSON IN HH
ASK I TO FIND OUT NECESSARY INFO. AND SCHEDULE
APPT. FOR TOMORROW)

DK.N18

(THANK AND MAKE APPT.)

(IF NECESSARY, ASK WHEN SOMEONE WOULD BE HOME
WHO WOULD KNOW THE NUMBER OF ADULTS OVER 18)

MAKE.APPOINTMENT

(THANK AND MAKE APPT.)

RESTART.DIAL

Hello, this is _____ calling on behalf of
District Health Department #
which covers COUNTY county and the hospitals in
your area. The health department and hospitals are
collaborating on an important survey to learn about the health
status and health practices of adults and children in your area.

We called earlier to interview someone in this household,
and would like to complete the interview now.

(Have I reached (###) [FIRST\$] - [LAST\$] ?)
May I please speak with
INSERT NAME ?

1. CONTINUE (R ALREADY ON PHONE)
2. R COMES TO PHONE
3. RETURN TO COVERSHEET (RNA, AM, ETC.)
(IF POSSIBLE, ARRANGE TIME FOR CALLBACK)

RESTART.INTRO IS READ IF THE RESPONDENT OR PROXY COMES TO THE PHONE ON CALLBACK

RESTART.INTRO

Hello, this is _____ calling on behalf of the
COUNTY NAME
Department of Health and the hospitals in your area.
The health department and hospitals are collaborating on an
important survey to learn about the health status and health
practices of adults and children in your area.
We called earlier to interview someone in this household,
and would like to complete the interview now.

Is this a convenient time to complete the interview?

1. CONTINUE
2. RETURN TO COVERSHEET

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