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The Graduate School
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THE INFLUENCE OF COMMUNITY CONTEXT
ON HEALTH PLAN DECISIONS:
A MULTI-METHOD ASSESSMENT OF COMMUNITY EFFECTS

A Thesis in
Health Policy and Administration

by

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ABSTRACT

The expansion of quality report cards and other information in the marketplace has increased the need for consumers to gather, interpret and synthesize complex information in advance of choosing a health plan. A growing body of research on consumer choice in healthcare has identified factors that influence plan choice including the impact of ever-increasing amounts of quality information. The literature has also raised serious questions about consumers' capacity to manage the amount and complexity of plan information available to them in the marketplace. Many of these questions have yet to be explored fully. There is a gap in the literature on how consumers move through the process of gathering, assimilating and using information to choose a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches.

This dissertation is comprised of three studies each employing a different methodological approach to elucidate the consumer decision making process. The first study used a case-study approach to explore community level factors that support information gathering and decision making. Key informants in three rural communities were interviewed about information resources, dissemination approaches, and consumers' information awareness. The second study evaluated the scholarly literature from several research perspectives to suggest factors that might be used to measure the influence of community variables on health plan decisions. The third study modeled these factors to determine their influence on health plan choice. This is the first study to empirically test the relationship between community context variables and health plan choice.

In the community case studies key informants in three rural communities were interviewed about information resources, dissemination approaches, and consumers' information awareness. The result of these studies was a general consensus that consumers lack the knowledge necessary to make a fully informed choice. While a variety of approaches to meeting information needs have

been adopted in the three communities, none of the interviewees felt that consumers' information needs were consistently and adequately met. The case studies helped identify community level factors that support information gathering and comprehension for consumers. The conclusion from the first study was that community context does play a role in helping consumers gather, interpret and understand complex information in order to make a health plan choice. Policy implications include the need to undertake broad public information efforts if the expectation that consumers can make truly informed health decisions is to be met.

The second study examined the research on decision-making, information-seeking and social networks to synthesize the research and suggest a research agenda for examining the effect of community context on health plan choice. PubMed, Medline and PsychINFO databases were searched for articles on decision-making, information seeking and social network effects. The literature makes clear that there is a fundamental tension between the amount and type of information consumers say they want and what they can effectively comprehend. Several of the factors that consumers say would be helpful to them are complicated and difficult to present and interpret. Effectively communicating the information mandated by the Balanced Budget Act (BBA) and the Medicare Improvement and Modernization Act (MMA) to Medicare beneficiaries without overwhelming them continues to be a significant challenge. In addition, the development of national, regional and disease-specific benchmarks has added complexity without improving comprehension.

The literature also makes clear that some consumers have more difficulty than others in managing the complexity of information in the decision making process. They may prefer to count on the assistance of their doctor or may rely on family members, friends, employers or others to make the plan choice for them. It is also important to note that many of these information agents face the same challenges as the consumers they are trying to assist. Policy implications from the second study include the need to further refine public reporting of health plan information to enable

consumers at a variety of literacy levels to access and understand the information. Further, technology enables disease-specific reporting across providers and plans; however, consensus is necessary to develop consistent measures to foster consumer comparisons. Finally, public programs should evaluate the distribution channels currently used to disseminate health plan information and consider approaches that target both the consumer and those who serve as information resources for the consumer.

The third study examined the effect of adding community context variables to an established model of health plan choice. Data from a survey of 1,200 rural Pennsylvania residents were used to develop models of plan choice and the probability of changing plan type. Estimates were derived using binary logistic regression. Separate models were estimated for plan change using rare event logit techniques. Adding community context variables significantly improves the predictive power of both choice models and plan change. Individuals in poorer health have a strong preference for Fee For Service (FFS) models. Those who have a household member who requires frequent care have a strong preference for FFS plans. Consumers are sensitive to restrictions on provider choice, specifically restrictions on physicians and hospitals. These results suggest that adding community context variables to models of plan choice would improve our understanding of consumers' plan choices.

The increasing health care related burden on public budgets is unsustainable. States are experimenting with a number of models to lessen the financial impact of health care expenditures on their budgets while increasing access to basic health care. If public plans and employers are going to use managed care models to contain costs and improve the care of individuals with chronic health needs then a broad information campaign to educate consumers about the prevention and chronic care management benefits of managed care models will need to be undertaken.

This dissertation contributes to the literature by increasing our understanding of the decision making process used by consumers in increasingly complex healthcare environments. As policy and market changes increase demands on consumers to effectively negotiate the health plan decision making process, the supply of effective information sources and dissemination efforts must keep pace. Because the implications of failure for personal and community health and individual and collective wealth are so great, the onus of creating a truly informed consumer is shared by consumers, providers and policy makers. The challenge for health plans, consumer advocates and policy-makers is to develop and implement effective communication efforts and disseminate them through the distribution channels that consumers use as information resources for health care related decisions.

TABLE OF CONTENTS

LIST OF TABLES	viii
LIST OF FIGURES	ix
ACKNOWLEDGEMENTS	x
CHAPTER ONE Introduction	1
CHAPTER TWO The Influence of Community Context on Health Plan Decisions: A Case Study of Three Rural Communities	14
CHAPTER THREE The Influence of Community Context on Health Plan Decisions: Establishing the connection between health plan choice and individually constructed information networks	41
CHAPTER FOUR The Influence of Community Context on Health Plan Decisions: An empirical test of community context on health plan choice	72
CHAPTER FIVE Conclusions and Policy Recommendations	110
APPENDICES Appendix A: Case Study Key Informant Interview Protocol	132
Appendix B: CRP99-9 Statewide Survey of Rural Consumers.....	135

LIST OF TABLES

Chapter 2 Tables

Table 1: Key Informant Interviews by Organization Type and Community	24
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Chapter 4 Tables

Table 1: Variable Labels, Definitions and Sources	108
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Table 2: Descriptive Statistics for Survey Respondents	112
--	-----

Table 3: Plan Choice Model Parameter estimates, SE, Odds Ratios and CI	115
--	-----

Table 4: Change Model Odds Ratios, SE, P-values and CI	117
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LIST OF FIGURES

Chapter 1 Figures

Figure 1: The Consumer Decision-Making Process	4
Figure 2: Conceptual Model of the Influence of Community Context on Health Plan Choice.....	8

Chapter 2 Figures

Figure 1: Conceptual Model of the Influence of Community Context on Health Plan Choice	19
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Chapter 3 Figures

Figure 1: The Consumer Decision-Making Process	49
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I extend my sincere thanks to the fellow members of the research team who participated in the Center for Rural Pennsylvania studies from which the idea for this dissertation originated. Lisa Davis, Myron Schwartz, Caroline Lembeck, Chris Foca and Janine Beaver each contributed to the exchange of ideas that became the statewide survey. I am proud to count them all as friends and their faith in my ability supported me throughout.

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CHAPTER ONE

Introduction

Over the last decade there has been considerable change in health insurance markets. Consumer-driven plans have emerged as employers shift costs to employees or eliminate health coverage altogether. States are experimenting with a variety of models to provide health insurance coverage for children or for all of their citizens, and entitlement program enrollment is rising. Adults who can enroll early seek the relative stability of Medicare, and Medicaid rolls expand as the insurer of last resort as employer sponsored coverage for lower-income workers continues to decline. All of this is in advance of the dramatic growth in entitlement programs that will occur as the baby-boom generation becomes eligible for enrollment in Medicare. Concurrent with these demographic and policy changes, health care inflation has consistently outpaced general inflation, and health care spending per capita has grown at more than twice the rate of growth in GDP per capita for nearly four decades (1, 2).

As these forces have unfolded there also has been an accelerating shift in the relationship between providers and patients. A generation ago health care providers expected to serve as agents and advocates for their patients. Today the expectation is that patients must serve as their own agents in managing their personal health, navigating the health care system and educating themselves to be informed consumers of health care products and services. This new paradigm creates a considerable set of challenges for consumers. Consumers must obtain, comprehend, and synthesize information to fully

participate in complex health care decisions, from choosing the health plan that best meets their needs to accessing primary and specialty care; from deciding what constitutes an emergency to selecting from multiple options for treating an acute illness or managing a chronic illness over time.

For many consumers the expectation that they become fully-informed participants in their own care may be too much to manage. Indeed, a growing body of literature provides evidence that consumers struggle to understand health care information. Kessels (3) found that as much as 80% of the medical information patients receive is forgotten immediately, while others have documented that almost half of the information that is remembered is incorrect (4). The capacity to understand medical information presupposes that consumers have successfully navigated the health care system to gain access to a provider of care. Increasingly access is determined by insurance coverage, and in this decision consumers also face a number of challenges.

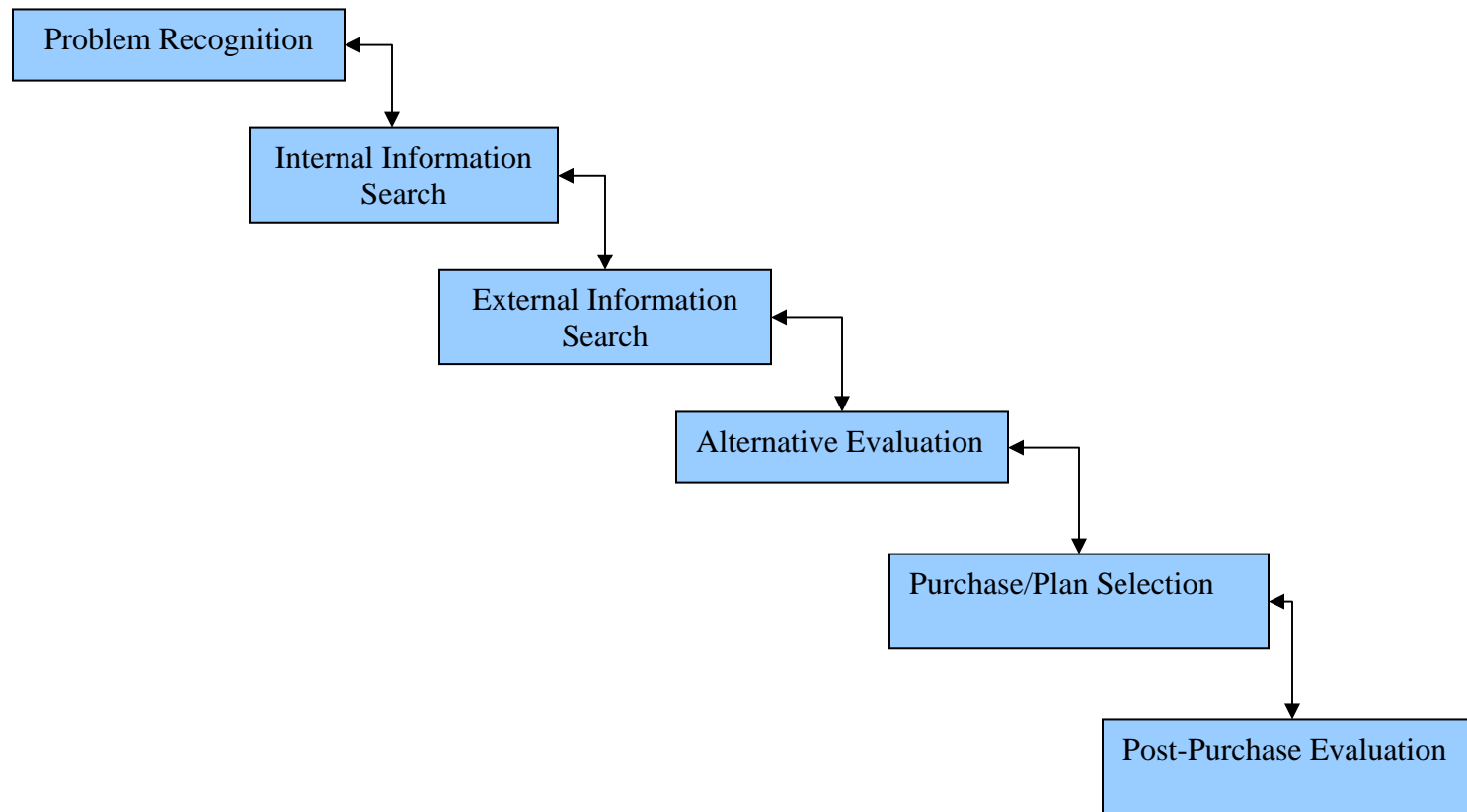
The evidence is very clear that when choosing a health plan, consumers lack functional knowledge and understanding of plan choices and find the selection process to be challenging and frustrating (5-9). This is especially true for vulnerable populations such as the elderly, the unemployed, and the uninsured (11-15). Consumers need accurate, useful, and easily understandable information about health plans, network providers, service scope and coverage rules, and how to address and/or resolve complaints (16-20). Finally, consumers need information that is relevant to their preferences for care, is consistent with their literacy and comprehension levels, and includes health plan performance indicators that enable comparison between plan options (12, 21-27). It is clear that while there is increasing information in the marketplace on

quality and healthcare costs, it is less clear that consumers have a sufficient level of health literacy to obtain, comprehend, and synthesize information effectively. The confusion caused by the introduction of Medicare Part D illustrates the challenges consumers face as they try to decipher complicated plan specifics and make a cost-effective decision for themselves (28).

Consumer Decision Making

Whenever consumers are confronted with a choice, they use a decision-making process that helps them move from the need identification stage through the decision execution stage. The decision-making model (Figure 1) assumes that consumers are proficient at each stage in both gathering information and processing information in a way that allows them to match their preferences to the choices available (29).

Figure 1: The Consumer Decision-Making Process



Adapted from Berkowitz, 2006,

Although there is a growing body of research on consumer choice in health care (15, 25, 30-35) most has focused on the impact of adding information to the marketplace, retaining the assumption that consumers are able to make use of new information as it is presented. There is far less literature on how consumers move through the process of gathering, assimilating and using information to choose a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches if public programs are to realize the cost savings presumed to come with increased enrollment of their beneficiaries in high-quality, low-cost plans.

The central thesis of this work is that consumers struggle with healthcare decisions. For some it is a challenge of health literacy, understanding what is being communicated about their health and the related implications and decisions that naturally follow. For others it is the communication approach that fails. Information is presented in a format or delivery method that hinders consumers' ability to comprehend the information. As a result, consumers are hampered in their ability to use the information to inform their decisions. Policy makers have relied on the belief that putting more information into consumer hands (e.g., quality scorecards, plan structure details, pricing information) would lead to greater information acquisition, and therefore better decisions. When policy makers do not account for consumer's ability to effectively understand the information, this assumption and all related policy goals fail. When consumers cannot understand the choices they are asked to make, their health suffers.

Whether the objective is to reign in an unsustainable level of growth in health care obligations or to improve quality of care, healthcare policymakers and providers have an obligation to figure out how to best communicate with individuals to enable them to

make informed decisions at each stage along the continuum, from health plan choice, to care seeking, care compliance, and health behavior change. Thus far they have failed not because they don't recognize these needs as important, but rather because there is no delineated obligation for any of the stakeholders to assume this responsibility. As a result, the onus rests on individuals for learning the system well enough to effectively choose a health plan, navigate the provider environment and manage their own health. Anyone in the health care industry, researcher, provider, or administrator who has tried to help a family member navigate this process, knows that this is too much to ask of most individuals much less those who struggle with chronic illness, low income, low health literacy, limited access to providers or some combination of these factors. The chapters that follow endeavor to expand our understanding of how consumers access, interpret and use information in the decision making process. The ultimate goal of this work is to improve information dissemination methods that lead to more-informed decisions.

Community Case Studies

Chapter 2 presents the findings of three community-based case studies. This research describes an effort to understand how consumers choose a health plan, specifically exploring the process through which consumers identify information resources, gather and interpret the information they receive and use the new information to choose a health plan that meets their needs. The case studies begin to develop our understanding of the factors that influence consumers during the decision-making process, with a focus on the impact of community context on the information seeking, processing and internalization phase of that process. Community context is important because the human experience is a social experience (36). Individuals live, learn and act

in the context of the communities in which they reside and health plan selection is imbedded in the larger setting of community, which serves as an interpretation and validation environment for individuals as they confront new information and related choices. This interpretation environment is the collection of shared and individual experiences that provide a foundational context within which individuals make decisions; and it is this context which has been largely unexplored in prior research on health plan choice.

Community is defined as the formal and informal social network that exists in rural communities, which derives as a function of mutual self-reliance, shared challenges and experiences. One key aspect of rural communities is that they contain a collection of ‘trusted knowledgeable others’ who serve as information resources for community residents on a range of issues (37-38). These knowledgeable others include friends and family members who may share personal experiences regarding healthcare providers and health plans, community-based consumer advocacy organizations, such as the Area Agency on Aging and AARP and, local healthcare providers who sponsor health plan and other health information sessions as a community service.

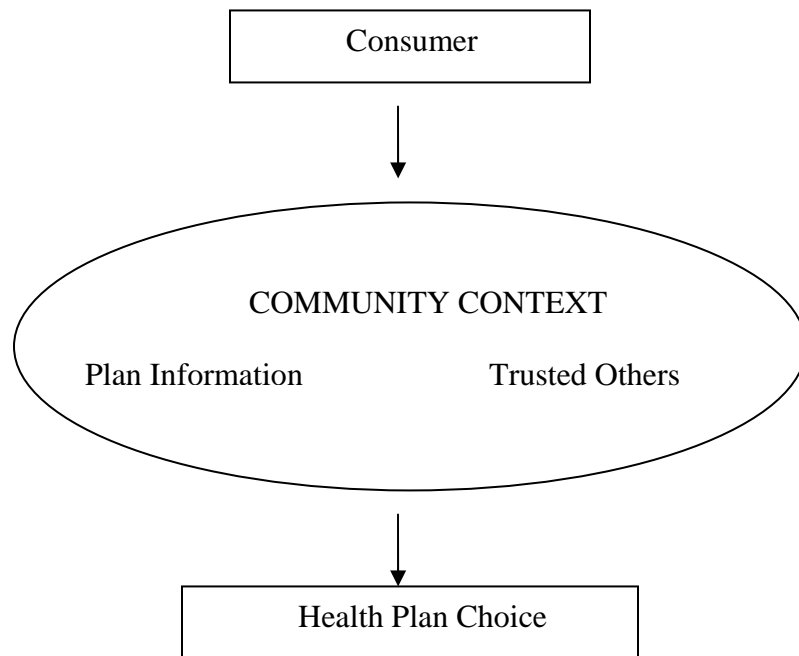
The primary goal of this research was to explore the functional role of community on two processes; (1) helping community members interpret information and, (2) developing individual and shared meaning that is integrated as part of the community knowledge base, and is thereby available for supporting future decisions by community members.

With decision-making theory as a foundational frame, the case studies were undertaken with a working premise that community members create “individually

constructed information networks” from the collection of available information resources. Within a community these individual networks will likely overlap and include the same set of formal agencies and organizations, but differ by the unique knowledgeable others such as family members and friends who have real or perceived knowledge related to healthcare decisions.

Building on these working definitions of community and individually constructed information networks, an interaction model was developed to serve as a framework for the case study analyses. The foundational model for the study is depicted in Figure 2.

Figure 2: Conceptual model of the influence of community context on health plan choice.



Consumer Decision Making

Chapter 3 presents a review of the literature on marketing principles related to consumer choice, research on factors that influence healthcare decision making, social psychology and networking literature that examines the social constructs that guide individual decision making and the importance of community for validating and reinforcing individual decisions. Decision-making theory serves as an organizing framework for this review (39). Decision-making theory incorporates the basic economic assumption that individuals are rational decision makers who make choices within the constraints of their available resources that maximize their preferences (40). What makes health decisions unique, and the study of health related decisions important, is the prevalence of uncertainty (41) on both the supply side (e.g., providers are often uncertain about the benefits of treatments), and the demand side (e.g., consumers often cannot accurately predict their future need for health care services) of the healthcare exchange. The degree of uncertainty in healthcare magnifies the importance of choosing a health plan for many consumers, especially those that choose on behalf of other family members. Uncertainty also drives consumers' information seeking behavior (42).

The contribution of this work is to identify gaps in our understanding of how consumers move through the information-seeking phase of the decision-making process.

Community Influence

Chapter 4 details a set of hypotheses and related quantitative analyses designed to examine the influence of community and related factors on an individual's health plan choice. If we can understand the relative impact of community information resources on improving the health literacy and knowledge base of consumers, then we can begin to

design effective communication tools that employ community resources with high communication effectiveness potential as vehicles for improving consumer decision making.

The focus of these quantitative analyses is consumer choice of a health plan, specifically whether they select a managed care plan or an alternative plan model. The projected growth in entitlement program enrollment brings with it a reemerging interest in managed care approaches to control costs and address access challenges. The managed care market in Pennsylvania, where this study was conducted mirrored the national trend with many plans discontinuing their Medicare+Choice (now Medicare Advantage) managed care products and the State halting the planned expansion of its Medical Assistance managed care program as several insurers discontinued their participation. Even with this turbulence in the marketplace, managed care enrollment in the State currently stands at 40% (43), with one in four (25.7%) Medicare beneficiaries in a managed care plan and nine of ten Medicaid recipients (89.7%) in a managed care plan (44-45). As a result modeling factors that influence plan choice is believed to be both relevant and timely in the context of current policy debates.

Conclusions and Policy Recommendations

Chapter 5 links the findings from the case-studies, the literature review and the quantitative analyses and concludes with a discussion of the implications for policy makers in preparing consumers to navigate a dynamic health care marketplace, take a more active role in their own health, and improve the health literacy of all Americans as health care access, cost and quality dominate U.S. domestic policy debates in the years ahead.

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CHAPTER TWO

The Influence of Community Context on Health Plan Decisions:

A Case Study of Three Rural Communities

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The Influence of Community Context on Health Plan Decisions: A Case Study of Three Rural Communities

ABSTRACT: *Context:* The expansion of quality report cards and other information data in the marketplace has increased the need for consumers to gather, interpret and synthesize complex information in advance of choosing a health plan. Although there is a growing body of research on consumer choice in healthcare most has focused on the impact of adding information to the marketplace. However, there is far less current literature on how consumers move through the process of gathering, assimilating and using information to choose a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches. *Purpose:* This research examines the information sources available to rural consumers and the process they use to access these resources to choose a health plan that meets their needs. *Methods:* Key informants in three rural communities were interviewed about information resources, dissemination approaches, and consumers' information awareness. *Findings:* Consumers lack the knowledge necessary to make a fully informed choice. While a variety of approaches to meeting information needs have been adopted in the three communities, none of the interviewees felt that consumers' information needs were consistently and adequately met. *Conclusions:* Community context does play a role in helping consumers gather, interpret and understand complex information in order to make a health plan choice. However, more research is needed to explore the most effective approaches to information presentation and dissemination.

Key words: Rural, information-seeking, consumer choice, community, health plan selection.

Introduction

The past decade has seen dynamic change in health insurance markets. Consumer-driven plans have emerged as employers shift costs to employees or eliminate health coverage altogether (1). States are experimenting with a variety of models to provide health insurance coverage for children or for all of their citizens, and entitlement program enrollment is rising. Those who can enroll early seek the relative stability of Medicare, and Medicaid rolls expand as the insurer of last resort as employer sponsored coverage for lower-income workers continues to decline (2). One impact of these market changes is a reemerging interest by these programs in using managed care to control costs and address access challenges (3).

This kind of market turbulence also impacts consumers in many ways. One of the most significant impacts is a shift of responsibility for understanding health plan options from plan sponsors and providers to consumers. Today consumers are expected to serve as their own agents in managing their personal health, navigating the health care system and educating themselves to be informed consumers of health care products and services. This new paradigm creates a considerable set of challenges for consumers. Consumers must obtain, comprehend, and synthesize information to fully participate in complex health care decisions, from choosing the health plan that best meets their needs to accessing primary and specialty care.

For many consumers the expectation that they become fully-informed participants in their own care may be too much to manage. Indeed, a growing body of literature provides evidence that consumers struggle to understand health care information. Kessels

(4) found that as much as 80% of the medical information patients receive is forgotten immediately, while others have documented that almost half of the information that is remembered is incorrect (5). The capacity to understand medical information presupposes that consumers have successfully navigated the health care system to gain access to a provider of care. Increasingly access is determined by insurance coverage, and in this decision consumers also face a number of challenges. The confusion caused by the introduction of Medicare Part D illustrates the challenges consumers face as they try to decipher complicated plan specifics and make cost-effective decisions for themselves (6).

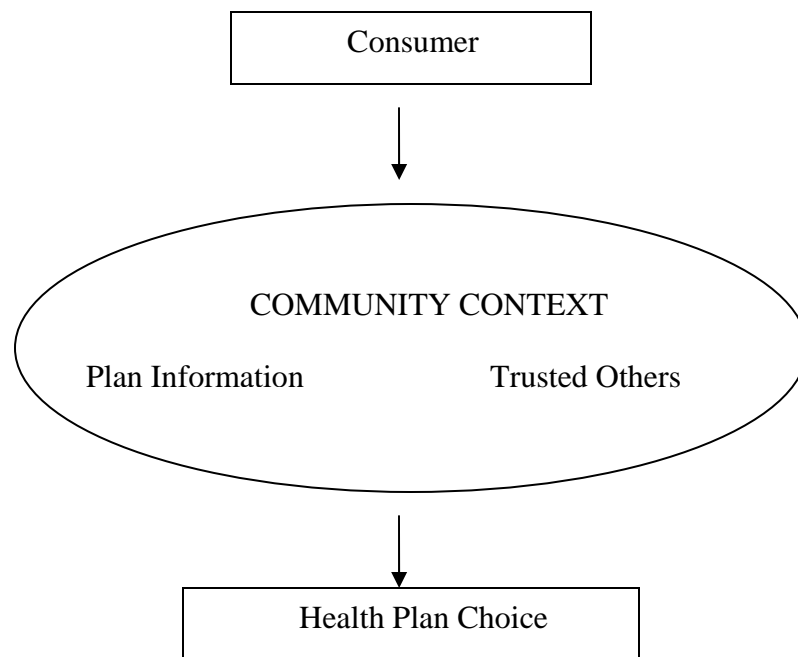
Whenever consumers are confronted with a choice, they use a decision-making process that helps them move from the need identification stage through the decision execution stage (7-8). The decision-making model assumes that consumers are proficient at each stage in both gathering information and processing information in a way that allows them to match their preferences to the choices available. Although there is a growing body of research on consumer choice in healthcare (9-19) most has focused on the impact of adding information to the marketplace, retaining the assumption that consumers are able to make use of new information as it is presented. There is far less literature on how consumers move through the process of gathering, assimilating and using information to choose a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches if public programs are to realize the cost savings presumed to come with increased enrollment of their beneficiaries in high-quality, low-cost plans.

This exploratory research was conducted to understand how consumers choose a health plan, specifically examining the process through which consumers identify information resources, gather and interpret the information they receive and use the new information to choose a health plan that meets their needs. Consumers get information about health plans from a variety of sources that vary in reliability and accuracy (20-23). For the elderly and the unemployed, the grapevine or word-of-mouth is a primary source of information (24-25). Doctors, friends, and family members are highly trusted; large managed care organizations, government, and the media are trusted the least (26-28). Because consumers are usually not involved in the process of developing information about health plans, they often have no context for interpretation when they receive the information (29-33). As a result consumers develop their own context for interpretation by drawing on the information resources and collective knowledge in their own communities.

The primary goal of this research was to explore the functional role of community on two processes; (1) helping community members interpret information and, (2) developing individual and shared meaning that is integrated as part of the community knowledge base, and is thereby available for supporting future decisions. Community context is important because the human experience is a social experience (34-37). Individuals live, learn and act in the context of the communities in which they reside. Community serves as an interpretation and validation environment for individuals as they confront new information and related choices. The community also serves as a repository of shared and individual experiences that provide a foundational context within which individuals make decisions; and it is this context which has been largely unexplored in

prior research on health plan choice. Figure 1 is a simplified model of the interaction explored through this research.

Figure 1: Conceptual model of the influence of community context on health plan choice.



This article describes the findings from three community case studies undertaken to develop our understanding of the impact of community context on individual consumer decision-making with a focus on health plan choice. The qualitative approach provided a unique opportunity to explore the influence of community on specific outcomes such as effective information dissemination which could then be used to design creative methods to improve individual health literacy and informed plan selection.

Methods

Community Case Studies

Three in-depth case studies of selected rural counties were completed. The case studies were structured to gain an understanding of the community structures that help inform consumers about managed care. The community case study (38-39) approach allows exploration of the multiple sources used by consumers for health care information, the interdependence of information sources and the accuracy and consistency of the information they provide, and the extent to which community-level efforts are effective in identifying and meeting information needs. Sofaer (1999) notes that one of the key advantages of the case study approach is the opportunity to reduce uncertainty both about *a priori* questions but also about what the right questions may be. This process enables us to move from qualitative to more quantitative questions over time by clarifying which factors are important in a process over time (40-41). The community case study approach is particularly relevant to the current political and administrative environment. For example, the State Health Improvement Plan (SHIP) focuses attention on the development of community partnerships, needs assessments, and solutions to community health problems. The community case studies shed light on whether locally driven

dissemination is effective, i.e., are statewide distribution efforts most effective or is it more effective to use community resources to disseminate information locally?

The selection of community case study sites was based on the following characteristics:

- Sites encompass a broad geographic distribution across the state and include one located on the state border, one that is centrally located, and one that has proximity to and dependence upon a major metropolitan area;
- Sites have varying levels of managed care penetration;
- Sites include at least one county that is likely to have been exposed to mandated Medical Assistance managed care sign-up information; and
- Sites include at least one county with a significant dependence upon a large rural managed care plan.

A combination of the positional, consumer, and snowball methods were used to identify information sources known to play some role in the dissemination of managed care information. These sampling techniques are useful for discovering sources that may be difficult for the researcher to identify in advance (42-43). One of the key goals of the case studies was to identify individuals who serve as key information resources in the study communities. The combination of sampling techniques we employed followed Dillman's (1978) approach for building a non-random sample (44).

First, we developed a standard list of organizations known to provide managed care information to consumers for each of the communities—a positional approach to naming organizations of interest. This list was constructed from a review of the latest literature and discussions with our technical advisory group and other experts on this topic. Second, other organizations were added to this list based on the results of our statewide survey of consumers. Third, using the snowball method, key informants

interviewed were asked to name other organizations in the community involved in sharing managed care information with consumers.

The three case study sites are all located in Pennsylvania; site names are fictitious to protect the anonymity of key informants.

- Anderson County is adjacent to a core urban county in a large metropolitan area. The county has a high managed care penetration rate and is therefore likely to have a high volume of information available on managed care and large numbers of Medical Assistance managed care enrollees;
- Butte County is a rural market at the State border with low rates of managed care penetration and a small number of voluntary enrollments in Medical Assistance managed care;
- Chapin County is equidistant from two smaller metropolitan counties. There is moderate managed care penetration rate and a heavy reliance upon a large rural managed care plan.

Key informant recruitment

The community case studies were designed to gain an understanding of the relationship of community structures to the delivery of health insurance information, and to help gain an understanding of the community context in which this information is delivered (45-46). Community structures are comprised of formal organizations that serve as sources of health information (i.e., the Area Agency on Aging, local healthcare providers, Apprise volunteers, the human resources department of local employers), and informal networks that also serve as information sources, such as the fire hall, and local service organizations (e.g., Kiwanis, Rotary)(47). Community context refers to the

setting and method of information sharing. Information dissemination methods ranged from formal programs focused on reviewing health information to “coffee klatches” and other community gatherings at which healthcare was often the topic of conversation. While the former focused on reviewing and answering questions about information provided by health plans, the latter provided individuals with opportunities to share their own experiences with healthcare and validate these experiences with their peers.

Key informants were identified and interviewed in each case-study community. Informants were drawn from both healthcare-related and non-healthcare-related organizations so that the full spectrum of potential sources of consumer information could be explored. Thirty-eight key informants representing 30 different agencies were interviewed across the three case study communities. Table 1 identifies key informant contacts by community and organization.

Table 1:
Key Informant Interviews by Organization Type and Community

<u>Community Agency</u>	<u>Anderson County</u>	<u>Butte County</u>	<u>Chapin County</u>
AARP			2
Area Agency on Aging	1	1	1
Chamber of Commerce	1		1
County Assistance Office	1		1
County Commissioners			1
County Cooperative		1	1
Extension Office			
Fire Hall			1
Home Health Agency		1	2
Hospital	1		3
Large Employer			1
Nursing Home		1	2
Primary Care Physician		2	2
Public Health and MH/MR	1		1
Rehabilitation Center		2	1
Rural Health Clinic			1
State Representative Children and Youth Services	1	1	1
Other			1
Participating Agencies	6	7	17
Key Informants	6	9	23

Interview format. Key informants in each community were contacted by phone to schedule the interviews. Individuals who agreed to be interviewed also received a letter describing the study goals and confirming the appointment date. Each interview was conducted in person by one or more members of the research team. The research team was comprised of Dr. Larry Gamm, Principal Investigator of the study and Associate Professor of Health Policy and Administration at Penn State, Chris Calkins, MPA Research Associate on the study and Carolyn Lembeck, MSW also a research associate

on the study. Dr. Gamm and Mr. Calkins were investigators on a prior study in which field interviews were conducted with primary care physicians serving rural communities (28). Ms. Lembeck had extensive field interview experience primarily on research projects conducted with the Pennsylvania Office of Rural Health. Each interview lasted approximately one hour during which each person was asked the same open-ended thematic questions; with targeted follow-up questions depending on their responses and the type of organization they represented (Appendix A). At the beginning of each interview the study goals were reviewed with each key informant. Informants were reminded that they could decline to answer any question and that their individual answers would be confidential. All key informants signed an informed consent form and agreed to have their interview tape-recorded to facilitate coding. All interviews were taped, transcribed and reviewed by the research team for accuracy.

The interviews focused on three primary themes:

1. In what areas of health insurance are consumers most poorly informed?
2. Where do consumers get information about choosing and using health insurance?
and,
3. What would improve the quality and quantity of information provided to consumers about how to choose and how to use a health plan?

Two-thirds (66%) of those interviewed occupied positions with formal responsibilities related to health information dissemination (e.g., Area Agency on Aging staff, human resources staff from large employers), or were direct providers of care to consumers (e.g., physicians, home health and nursing home staff, and hospital employees). The remaining third held informal roles in their communities as information

resources on a wide range of topics, including healthcare (e.g., AARP members, County Commissioners, directors of local Chambers of Commerce).

Interview analysis and coding. In addition to the field-interviewers two other members of the research team, a statistician and rural health expert knowledgeable about the communities, reviewed the interview transcripts to develop themes and categorize the responses by thematic area. Within the broad themes identified above, sub-themes were developed by the research team using frame analysis, a process that identifies unique labels and shared interpretation of events within a community context (48). Goffman developed Frame Analysis through the study of news media and the effect of media coverage on how issues were described and understood by the public (48). From this initial focus on media a variety of applications arose in the social sciences. Most salient for this research is the work of DiMaggio and Powell (49), who used frame analysis to describe collective rationality inside organizations as a function of filtering changes in the institutional environment and relevant markets through executive's experience. The same filtering effect is found in the work of Snow and Benford (50) who applied Frame Analysis to social movements largely focusing on the manner in which movement leaders construct organizing themes, by initially personalizing environmental factors through their own experience (51). Frame Analysis is a method that explicates the process by which a communication source (i.e., key informants) defines a situation and explains phenomena to others (52). The method examines the use of consistent language and phrases over time and also probes the communication source for principles that govern events (philosophical frames) and the result of subjective interaction with the same or

similar situations and phenomena (beliefs that arise from experience). These experiences provide salience for recommendations to others in similar situations (53).

The community case studies were carried out under the working assumption that this same interpretive filter influence might be at work within communities through the individuals who serve as local information resources for consumers. Because our key informants served both as information resources for their communities and also as interpreters and consumers of health plan information themselves, we concluded that frame analysis was a pertinent theoretical frame for organizing feedback from the key informants in each of the case study communities.

Interview responses were categorized and reviewed first by the primary interviewer and then by a second member of the research team. The resulting coded responses for each interview were then reviewed collectively by the entire research team. This approach was repeated in an iterative process until the research team reached consensus on organizing sub-themes. All interview responses were then re-coded using the sub-theme framework as a coding scheme (38, 43).

Case Study findings:

This exploratory research was conducted to understand how consumers choose a health plan, specifically examining the process through which consumers identify information resources, gather and interpret the information they receive and use the new information to choose a health plan that meets their needs. Findings are described below by the three organizing themes that framed the interviews: 1) level of consumer information; 2) sources of information for consumers; and 3) best practices and

recommendations to improve the quality and quantity of information available to consumers for selecting a health plan.

Information gaps and related impacts.

The opinion held by a majority (84%) of key informants in each of the case study communities was that consumers are generally poorly informed about choosing and using a health plan. Seventy-two percent (26 of 36) of the responders mentioned the amount of information confronting consumers and providers in the decision process as a critical factor. The following comment captures the judgment of many of the interviewees.

“As a result (of too much information), consumers tend to focus on one or two issues of greatest importance to them at the time they are choosing a plan, resulting in a general lack of understanding about plan details.”

This lack of understanding may have serious consequences if it causes consumers to delay care or face access problems due to confusion about how to navigate the system.

One striking finding was that none of the key informants interviewed felt that they were fully informed about choosing and using a health insurance plan with half (53%) saying they were only partially knowledgeable about plan attributes. This is significant as they, and/or the organizations they represent, are viewed as trusted community resources and are often considered a primary source for credible information by other organizations and individuals in their communities.

Fifty-four percent of key informants felt that consumers are the most poorly informed about the scope of benefits, including what is and isn't covered under the plan, personal financial responsibilities, and rules for seeking emergency services or specialty care. Two specific issues were noted that are informative for rural areas. The first is that state-specific licensing of managed care organizations presents particular problems in border communities where healthcare markets have historical patterns of cross-border

migration. In addition to confusion about whether care received in another state is covered, geographic coverage limits necessitate new referral patterns between providers, potentially creating short-term continuity of care breakdowns.

Finally, a third (32%) of the key informants noted the impact of health information in the media. Advertising, news media coverage, and popular media coverage can create a confusing array of information for consumers. One exacerbating finding in this regard is that many consumers expect health plan information to be confusing, perhaps leading to the self-fulfilling prophecy that they will be confused and give up on efforts to understand plan information if it isn't immediately understandable to them. This raises the issue that communication efforts may first have to convince consumers that they have the capacity to understand health plan information before providing the information for their use in decision making.

Information sources.

While each community has local organizations that act as key information sources, there was no evidence in any of the case study communities of a coordinated effort to meet consumers' information needs across the full continuum. In Butte County, healthcare providers felt that it was part of their responsibility to help consumers with health insurance questions. For example, the dominant hospital has added business office staff specifically to track changes in each of the major health plans active in their area. These individuals are intended to act both as a resource for other hospital staff (e.g., Emergency Department nurses and admitting personnel) and consumers. One telling detail about this arrangement is that the hospital does not advertise this resource to the community; rather, other staff members are directed to call these individuals when

consumers ask questions about specific plans, and then relay the answer(s) to the consumer. The result is that the hospital has created a community resource that is only accessible to consumers who come to their hospital and ask a staff member a plan specific question. That staff member then has to know whom to call, get the relevant information, and transfer/translate that information to the consumer. This is a five-step process for getting the answer to a single question. If the answer to the first question raises additional questions, the entire process has to be repeated. At the very least this is inefficient. At worst, the structure of this process defeats one of the stated purposes of the program, providing consumers with accurate, up-to-date information.

In the two other sites, healthcare providers tended to refer consumers back to their insurance plans for answers. Notably, providers in Chapin County were confident that the dominant managed care plan was a consistent and reliable source for referred consumers. In the urban adjacent county, all consumers were directed to call their insurance plans for answers to access and coverage restriction questions, although there was less confidence that consumers would receive a clear and unequivocal answer.

Many of the key informants noted the importance of personal connections and local consumer advocacy organizations in information seeking. A representative comment is:

“The State Health Centers, AARP, Cooperative Extension office, community action agencies, disease-specific advocacy groups, and the Area Agency on Aging are good sources of information, although 90 percent of the information that consumers receive is through word of mouth from family or friends.”

In each of the communities consumer advocacy organizations are staffed by community residents, which helps to quickly establish trust based on shared experience

and context. This foundational trust makes these organizations particularly useful as information dissemination outlets. Many physicians, often identified as the most trusted source of health information in these communities, felt ill prepared to respond to questions about plan choice or plan use. This is consistent with findings from an earlier study of primary care physicians serving vulnerable rural populations (46).

Best practices for information sharing.

Informants in each of the case study communities were able to identify organizations that were effective information resources. One constant among interviewees, mentioned by 73 percent, was the belief that face-to-face interaction works best for communicating information, especially for Medicare-eligible populations, as it provides an opportunity to ask questions and be reassured about key issues. AARP, the Area Agency on Aging, and the League of Women Voters were all mentioned as effective community resources. These organizations were considered to be excellent and trusted sources of both public and plan-specific information.

However, these comments were tempered by the underlying concern among most key informants (33 of 38) that information was most relevant for consumers at the same moment when it was least likely to be retained, that is, during an acute illness or health episode. Many noted that consumers don't seek information on plan limits and access restrictions until they need to use health services. This "just-in-time" information seeking was of real-concern to many key informants because of their believe that consumers are unable to absorb information during a health crisis, creating a situation that appears to be an ideal opportunity for information exchange, but is actually one of the least effective

times for communicating any information other than that specifically related to the episode.

Many of the key informants noted that seniors enroll in managed care plans based on cost considerations or specific benefits (e.g., pharmaceuticals), without understanding the limitations, and only learn how to use their healthcare plan after they have tried to access the system. As a result, they tend to learn plan limitations by being denied care or having care (such as a specialist visit) delayed because they didn't follow plan protocols. This issue is especially relevant as Medicare and Medicaid restrict enrollees' ability to switch plans to biannual or annual enrollment options rather than monthly.

Discussion

In general, there is consensus among the key informants interviewed that consumers are not well informed about health insurance matters. Most of the respondents indicated that the Medicare and Medical Assistance populations are the least informed. However, there was general consensus that all population groups are not well informed. This is consistent with the literature (9, 19-21), which shows that when choosing a health plan consumers lack functional knowledge and understanding of plan choices and find the selection process to be challenging and frustrating (30-33). This is especially true for vulnerable populations such as the elderly, the unemployed, the uninsured (14-16, 19), and those with low literacy, both health literacy and general literacy (53-57).

The key informants suggested several implications of the lack of knowledge. For example, several noted that one possible result of being poorly informed, consumers tend to focus on one key factor, usually cost or information associated with an individual concern about how to use a plan. This is to be expected as cost (as measured by monthly

premium) is relatively straight-forward and readily incorporated into consumer decisions (23-24, 29, 55). However, secondary costs, such as co-pays, deductibles, coverage limits and other out-of-pocket expenses, influence health plan choice but are difficult for consumers to incorporate due to the uncertainty of future healthcare needs. (31-33). Perhaps the most relevant finding from these case studies is that consumers are believed to seek information from individuals with whom they have a personal relationship. Family and friends are the primary source; providers are another trusted source, especially among the elderly. Face-to-face encounters were suggested by key informants as the best method to convey information, especially for vulnerable populations. Whether due to confusion (32-33) or perceptions that health plans have an undue influence on care decisions (54, 61) those with the greatest understanding of health plan specifics tend to be the least trusted sources of information. Key informants felt that consumers tend to trust those with the least specific knowledge about health plans (family and friends) most, and tend to trust those with the most specific knowledge about health plans (plan representatives) least. This finding has critical implications for consumers, key information sources and health plans alike as it may lead to poorly informed plan selections and subsequent dissatisfaction (62).

Related to consumers preference for information from sources they know well, key informants noted that consumers turn to local institutions for help in interpreting healthcare information. However, in most communities, the organizational network was not well integrated. Competitive market pressures tended to isolate providers, and many of the community agencies have broadly defined missions beyond health information dissemination. These factors limit collaboration.

There was consensus among key informants that consumers prefer to receive information by mail about changes in plan rules. Mail also tends to be the most-cost effective means for plans to deliver information to consumers. These factors work in opposition to the belief among those interviewed that face-to-face interaction is the most effective for communicating information. Mailed information places the burden of interpretation and assimilation completely on the consumer. For rural consumers this preference may be a function of a desire for independence and self-reliance (45-47) or a function of the relative isolation faced by some rural residence as a consequence of transportation issues, access to providers or other sources of information, or health literacy issues (58-59).

Rurality, and by extension, community context, is an important factor in the social milieu within which knowledge acquisition takes place. First, there is a smaller managed care presence in rural areas and, consequently, generally fewer choices for consumers. As a consequence of the limited managed care penetration in rural areas and its shorter history there, general concepts about managed care have not found as significant a place in the local culture as they have in more urban areas. Consequently, an important source of general or public information about health insurance, family and friends, is less prominent. Additionally, providers have had less experience with managed care in rural areas and are less of a resource for information. Furthermore, because rural employers tend to be smaller, they are less likely to offer insurance benefits and to have a benefits officer on staff. This further limits the preferred information sources in rural areas.

Conclusion

The purpose of this pilot study was to begin building knowledge about factors that influence consumer choice, specifically the impact of community context on the information seeking and processing step in decision-making. The observations derived from the case studies have helped to identify some of the ways in which consumers are believed to seek information, the information sources available to them, and the limitations of those resources, which may have important implications for public policy with respect to information dissemination efforts. Additionally, these findings support the assertion that community context is important for understanding how information is sought, delivered and interpreted by consumers.

These findings indicate that community serves as an interpretive environment for consumers during the decision making process (see Figure 1). The task now is to use these findings to refine the definition of community as a construct to explore the influence of community on specific outcomes such as effective information dissemination, improvements in individual health literacy and plan selection.

Overall, there is a consistent set of concerns across the case study sites related to consumers' lack of knowledge about how to choose and how to use a health insurance plan. While a variety of approaches to meeting information needs have been adopted in the three communities, none of the interviewees felt that consumers' information needs were consistently and adequately met. There was no evidence of an existing network of healthcare providers and community resources coordinated to address this problem in any of the case study sites.

The finding that consumers have the least trust for those who have the most knowledge has important implications. Both public and private health plans may need to

use trusted community resources to effectively disseminate information, borrowing trust in a manner similar to the way in which accreditation and board certification efforts in health care to boost consumer and provider confidence (63-66).

The key informant interviews were conducted in the spring and summer of 1999 in three rural Pennsylvania counties. The health insurance market has experienced dynamic change in the eight years since the data was gathered. As a result, the conclusions derived from this research may not hold if the study was repeated in the current market environment. This is an ongoing challenge for all research on plan choice as the economic, regulatory and political environment related to health insurance coverage continues to experience dramatic change. The age of the data raises the question of whether contributions can be made to our current knowledge using data that is eight years old. There are two answers to this. First the case studies were exploratory in nature and designed to help explicate the approach used by consumers to gather information and the local resources available to them during the decision making process. The second answer is that the absence of research in the literature that explores the impact to community context on health plan choice argues that this effort does make a contribution, even if the only contribution is to raise additional questions that need to be investigated.

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CHAPTER THREE

The Influence of Community Context on Health Plan Decisions: Establishing the connection between health plan choice and individually constructed information networks.

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The Influence of Community Context on Health Plan Decisions: Establishing the connection between health plan choice and individually constructed information networks.

ABSTRACT: *Context:* A growing body of research on consumer choice in healthcare has identified factors that influence plan choice including the impact of ever-increasing amounts of quality information. The literature has also raised serious questions about consumers' capacity to manage the amount and complexity of plan information available to them in the marketplace. Many of these questions have yet to be explored fully. There is a gap in the literature on how consumers move through the process of gathering, assimilating and using information to choose a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches. *Purpose:* This study examines the research on decision-making, information-seeking and social networks to synthesize existing findings and suggest a research agenda for examining the effect of community context on health plan choice. *Methods:* PubMed, Medline and PsychINFO databases were searched for articles on decision-making, information seeking and social network effects. *Findings:* Consumers seek information from a variety of sources, including friends and family members, physicians and other community resources. Consumer trust is highest for those with the least direct knowledge of health plan attributes and trust is lowest for those with the most direct knowledge of these attributes. *Conclusions:* Community context does play a role in helping consumers gather, interpret and understand complex information in order to make a health plan choice. However, more empirical research is needed to test the effect of these factors on health plan choice.

Key words: Decision-making, information-seeking, social networking.

Introduction

The passage of the Balanced Budget Act (BBA) in 1997 required the Centers for Medicare and Medicaid (CMS) to provide information on Medicare and comparative health plans to consumers. Information mandated by the BBA included cost (premium, co-pays and deductibles), plan attributes (basic and supplemental benefits), enrollee satisfaction, disenrollment rates, and plan performance metrics including several measures of quality (1). In addition the BBA also specified distribution channels for disseminating the information including print, telephone hotlines, the internet and community based health fairs (2). The BBA accelerated what was already a growing trend to disseminate information on health plans by state and federal agencies, consumer organizations and health plans themselves (3). With the passage of the Medicare Prescription Drug, Improvement and Modernization Act of 2003 (MMA), demands on consumers intensified. MMA replaced the Medicare+Choice program with the Medicare Advantage program, added prescription drug coverage, expanded preventive care and changed the relationship between income and premiums for Part B coverage (4).

These policy changes have added complexity to an already challenging environment for consumers. Today, consumers are asked to bear greater responsibility for cost-sharing in employer sponsored plans, to access and integrate sometimes conflicting marketing materials, and to decipher increasingly complex quality-related and other health plan information. Adding to consumers confusion, and often shaking consumer confidence, are campaigns designed to raise public awareness of healthcare acquired infections, re-hospitalization rates, surgical errors, and other patient safety efforts that are difficult for health providers to understand, much less the average consumer. All of this

happens against a backdrop of nearly daily news stories describing the U.S. healthcare systems as broken, fragmented and out-of-control (5-10).

In the decade since the passage of the BBA, there also has been dramatic change in the public health insurance market. States along with the federal government have moved aggressively to enroll Medicare and Medicaid recipients in managed care plans in an effort to contain costs and increase access to health services. In some states, including Pennsylvania, Medicaid recipients were required to enroll in a managed care plan. As in many states approximately 25 percent of Pennsylvania residents are insured through one of the two flagship public health insurance programs, Medicare and Medicaid.

Pennsylvania serves as a good example of the challenges faced by many states in the Northeast and Midwest regions of the United States: negative population growth, an increasingly elderly population, and expanding Medicaid rolls (largely attributed to an increase in the number of children covered under Medicaid and the State Children's Health Insurance Program, SCHIP). In 1996, thirty-six percent of Pennsylvania residents were enrolled in managed care plans. By 1998, that percentage had increased to 43 percent (11). Today, Pennsylvania is one of a handful of states with managed care penetration rates greater than 80% (12).

In 2003, the number of uninsured Americans (44.9 million) surpassed the number covered by Medicare (40.1 million), and the number enrolled in Medicaid (44.2 million) for the first time in nearly two decades. Driven by declining rates of employer sponsored health insurance and tighter eligibility rules for adults to receive medical assistance the number of uninsured adults under age 65 grew by 1.4 million in 2003 and 5.1 million from 2000 to 2003, with three quarters of the growth among low-income adults (13).

However, the number of Medicare recipients is likely to surpass both Medicaid enrollment and the uninsured quickly as the number of Medicare beneficiaries is projected to nearly double to 77 million by 2030 (4). There is one final component to the health insurance market worth noting. During this period participation in the individual insurance market, which has historically accounted for a small percentage of the overall insurance market, has declined further still (14) indicating that those consumers who lose employer sponsored insurance and who don't qualify for a public program are joining the ranks of the uninsured.

Market shifts of this nature affect the consumer in many ways. One of the most significant impacts is the creation of a new set of information requirements for consumers. The type of information needed both to choose a managed care plan and use services effectively is dramatically different from that needed in the fee-for-service environment. This is especially true for consumers receiving healthcare funded through Medical Assistance or Medicare, as they are more likely to have limited experience with health plan choices and therefore have a more limited knowledge base when selecting a health plan (15-18). The structure of managed care plans requires the active engagement of consumers at every stage. Pre-selection, consumers need to gather information on each of their plan options, comprehend the implications of access and benefit restrictions across plan choices, and choose a plan that meets their projected needs for the coming year. Post-selection, consumers need to navigate plan and provider changes, as well as, manage the access and referral process to get the care they need.

In 1999, Lubalin and Harris-Kojetin examined the literature to test the idea that consumers have the capacity to integrate information on cost, quality, and plan attributes

to arrive at an informed choice resulting in the selection of a low-cost, high quality health plan (19). What they found was that consumers were confronted by health information that they largely could not understand. Further most consumers do not even understand the context in which they are being asked to choose. Lubalin and Harris-Kojetin effectively identified several gaps in our knowledge about how consumers move through the decision making process and called for additional research to bolster our understanding of the process in order to support consumers, health plans and policy makers toward their shared goal of informed choice. This research takes up one aspect of their call by focusing on the impact of community factors that support informed decision making by helping consumers acquire, interpret and validate information prior to selecting a health plan.

I will begin by briefly describing the decision-making process. Next I review existing literature on consumer choice in health care with an emphasis on the factors that have been shown to influence health plan choice. Then I will review the literature on health information-seeking behavior as a component of the decision making process as this literature has expanded considerably in the last decade. Finally, I will examine the social-learning/social networking literature in the context of rural communities and conclude with a prospective approach for strengthening our understanding of health plan choice by incorporating community level factors.

The overarching framework for this synthesis is the classic marketing approach used by insurance providers, both private and public, to design and deliver information to consumers in order to prompt an exchange (e.g., the selection of a health plan). The marketing process is appropriate as it forms the context within which consumers are

accustomed to receiving information about products and services. The classic marketing approach incorporates the decision making process and is defined by the four components essential to any marketing effort, product, price, place and promotion. This work will focus on place as it is realized in the marketing of insurance products, including Medicare and Medicaid. Place, describes the methods used to distribute products and services to the marketplace and together with promotion define the exchange between the producer and consumers as purchase decisions are made (20).

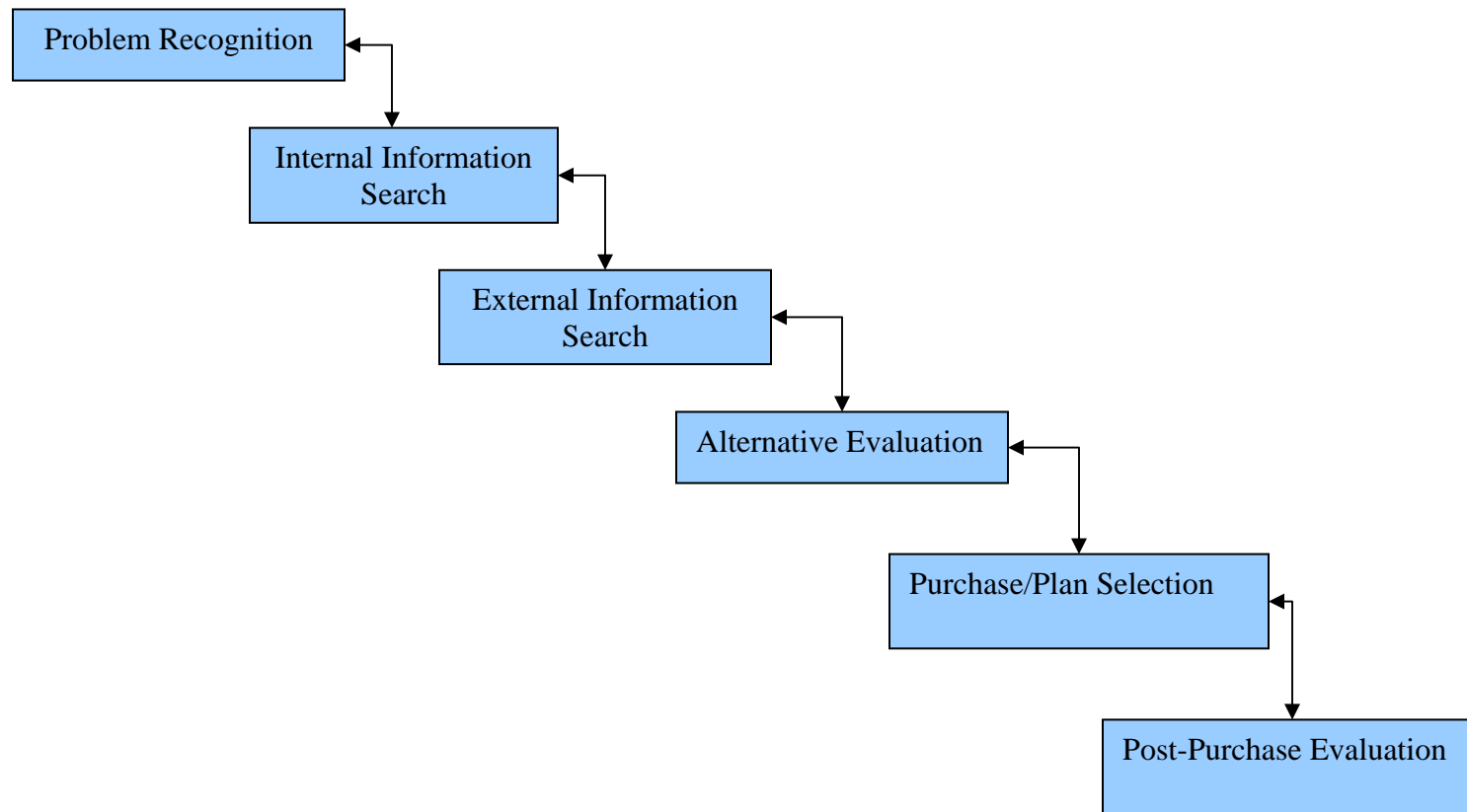
Distribution channels have been identified as critical components for effective information dissemination in some of the foundational research on decision-making in health care settings (21-22). However, Davidson (1988) and others have documented that policy approaches have largely ignored this factor in designing consumer information campaigns (23-25). If policy makers are going to rely on consumers as rational, informed decision makers, then all components of effective information campaigns must be utilized. Dissemination channels are one key component of the information seeking phase of the decision making process.

The Decision Making Process

Whenever consumers are confronted with a choice, they follow a decision-making process that helps them move from the need identification stage through the decision execution stage (See Figure 1). The decision-making model assumes that consumers are proficient at each stage in both gathering information and processing information in a way that allows them to match their preferences to the choices available. This work focuses on the information search and evaluation stages leading to plan selection. After

the problem is recognized the consumer often engages in an internal information search to review personal experience with the problem at hand (20, 26).

Figure 1: The Consumer Decision-Making Process



Adapted from Berkowitz, 2006,

When making a health plan choice, consumers often expect information to come from external sources as this choice is often prescribed by the employer and also occurs on at most an annual basis. As a result consumers do not often have a reservoir of internal knowledge to help them make the decision, thus they move quickly to the external information search stage. External information search usually involves seeking information from multiple sources including media, health plans, the web, consumer advocacy organizations and personal sources such as family members or friends. Several studies have found that consumers often rely on family members and their primary health care provider for information about health plans (27-30). The central challenge with this approach is that physicians often feel unprepared to serve as an information resource about health plans (31). Family members and friends are noted as the most trusted source of information for many consumers even though they are also often poorly informed and can offer incorrect information (32-34).

The final stage in the decision-making process prior to plan selection is the evaluation of alternative choices. While many employers will sort options and provide employees with a single option, the growth of Medicare Advantage plans provides most Medicare recipients with a choice of at least two plans. In the evaluation stage individual consumers develop criteria for comparing their options (20). The research on criteria employed by consumers in selecting a health plan is rich (3, 17, 35-41). Ironically, there is nearly universal agreement across these studies that consumers cannot effectively use all of the information on selection criteria they have available to them, even when they say they want more information (1, 15, 42). As a result, even though many consumers

want more information on quality and enrollee satisfaction and, say that additional information would help them when making a plan selection, many are overwhelmed by the complexity and volume of the information and resort to a single criteria that they understand well to make their choice (1, 33, 43-45). While the dissemination of quality information has increased in recent years, raising general public awareness of quality indicators, the results of two Harris polls fielded in 2001 and 2002 are illustrative. They found that few people (one percent or less of adults) have changed providers or health plans as a result of quality information. This finding leads to several questions. What factors have been shown to influence consumer choice? Can consumers use the information available to them? What information do consumers seek and where do they look for it? And fundamentally, can consumers make informed decisions? Many of these questions have been addressed by the literature on consumer choice. I have organized the literature by the three classical dimensions for examining healthcare systems and policy, cost, quality and access.

Consumer Choice in Health Care

Information on Cost

There is widespread agreement in the literature that price has a direct and significant impact on health plan choice (35, 46-51). Of those with health insurance coverage, nearly two-thirds (64%) of consumers receive health insurance through their employer (52). Approximately seven percent of the non-elderly population purchases health insurance directly (14). The remaining 30% of the insured population is covered by public programs (Medicare or Medicaid). Each of these demographic groups faces significantly different costs to acquire

health insurance based on their access to the market. Each demographic group has been shown to have widely varying price-elasticity of demand (46), with age, gender, and household composition contributing to the variation (53-54).

Most economic studies have modeled the impact of premium changes on whether employee's elect to participate in insurance offered by their employer or on plan switching behavior when plan options have differing premiums. Buchmueller (2000) showed that a \$10 increase in premium would increase the likelihood of switching between plans (48). This estimated impact has been confirmed in several studies, notably Dowd, Feldman and Coulman (2003) who estimated a 4% decline in market share resulting from a \$10 increase in plan premium (55). In increasingly competitive health insurance markets consumers' price sensitivity is likely to lead to benefits redesign in order to minimize premium increases (54, 56).

One of the challenges this presents for consumers is that benefits restrictions can be much more difficult to discern than premium changes. As a result consumers may discover coverage limits only after they use services and are billed for benefits they assumed were covered (33, 57). Ultimately, the ability to balance price and benefit constructs requires transparency about both features (58). However, the challenge remains that consumers often have difficulty understanding the information that is available in the marketplace and therefore struggle to make an informed decision that maximizes value (59). One reason that consumers have difficulty with healthcare information is the data provided is not relevant to their individual situation (e.g., annual rates of Hemaglobin A1C exams have little meaning for a non-diabetic). A second reason

is that the volume of information and complexity of the metrics reported can overwhelm a typical consumer (29).

Information on Quality

Much of the consumer choice research has focused on the impact of adding quality information to the marketplace, retaining the assumption that consumers are able to make use of new information as it is presented. Information on quality and plan performance is often derived from claims data and other information systems developed by plans and payers (60). These systems are designed to meet accounting and management functions and therefore tend not to serve as intuitive information resources. Hibbard and Jewett have conducted a series of tests with consumers to ascertain their level of understanding of quality indicators and plan metrics (3, 61-62). They found that consumers do not understand these metrics at either a basic or more abstract level. Consumers struggled with terminology, directionality (i.e., whether a high score was good or bad), and generally struggled to make the connection between metrics of care and quality. Even information on the cost of episodes of care, which consumers say they prefer, did not help consumers better understand their own plan and the related impact on their share of episode costs (61). Several other studies examining consumer understanding during this period drew similar conclusions (25, 63-64). More recent research has shown that these comprehension issues persist (65-67). While administrative data is accessible the challenge is that data which can be systematically collected and disseminated holds limited value to consumers who tend to ignore it and/or consider unimportant if they can't understand it (68).

Information on Access

Beyond cost and quality, a number of studies have examined other factors that consumers say they would like to have and consider important for selecting a health plan. In general these factors relate to various dimensions of access, including provider access and administrative access. Consumers consistently rate provider access as an essential factor in plan selection (30, 35, 38, 69-70). This is particularly true if the consumer has an established relationship with a provider. In that case consumers will follow providers, switching plans to maintain the relationship (71-72). This information may be more important in areas with higher numbers of physicians per capita as plans may use provider panels to differentiate themselves on cost and quality factors. In areas with fewer physicians per capita, each physician tends to be included in the provider panels of most plans. This effectively raises the administrative burden for those providers but has the potential to make them a valuable information resource to their patients if they have to understand plan restrictions in order to manage their practice (28, 31, 73).

In addition to provider access consumers have identified several other factors that could be characterized as administrative access issues. These include paperwork demands, ease of access to information via telephone and internet, claims processing and claim challenging, and the courtesy of plan and physician office staff (74-75). With this review of the types of information consumers say they value and find available in the marketplace the next question is can consumers use the information to help them make informed decisions?

Existing knowledge

In a 1999 study this author and colleagues conducted a series of case studies in three rural communities to ascertain how consumers choose and subsequently use a

health plan (33). One of the central findings from those studies was that consumers are poorly informed about health plans in general, and further lack a basic understanding of the way healthcare is delivered. Specifically, consumers were poorly informed about the ways in which providers of care interact to coordinate care through an episode that may begin with a primary care office visit, leading to a referral to a specialist and from there a potential hospital stay, surgical procedure, or physical rehabilitation and ultimately discharge with additional recovery time at home. While these findings are not surprising by themselves what was striking was that many consumers thought they had enough information prior to making a choice. The potential result of this disconnect is the choice of a health plan based on a single factor or on the erroneous belief that essential plan attributes were unimportant. These findings typify results from a growing body of research on consumer choice in healthcare (17-18, 29, 36-37, 76-79).

Fundamentally consumers need to understand the basics of the health care system and how different delivery system structures affect them before they can make a health plan choice that maximizes their satisfaction, benefit or utility (80-81). The first Navigating the Changing Health Care System survey conducted in 1995 established a baseline of consumer knowledge about the health system and health plan structures (41). This was the first national survey focused specifically on consumer's information needs. The computer-assisted telephone survey completed interviews with 1,081 adults age twenty-one and older in the 48 contiguous states in mid-1995 (41). The results presaged subsequent research finding that nearly two-thirds (67%) of respondents felt they did not understand key differences between FFS and managed care plans. One critical finding was that most respondents did not understand that managed care plans controlled access

through provider panels and referral requirements. Indeed one out of three respondents either had not heard or did not know the meaning of the term managed care.

This confusion about terminology challenges the fundamental assumption that providing information to consumers enables them to make informed choices (82-83). The confusion persists even among those consumers with managed care experience. In 1996, the National Committee on Quality Assurance (NCQA) sponsored a series of focus groups with Medicare beneficiaries and found that those enrolled in managed care plans had less understanding than those in FFS plans about managed care plan restrictions on access (16). Less than 10 percent of the participants knew that managed care plans were both insurance products and delivery systems. Unless consumers grasp the fact that managed care plans impact access to care, the management of chronic conditions and the monitoring of provider quality of care, they will have no context for evaluating information on these plan metrics and will be unable to effectively incorporate them into plan selection decisions (15, 39).

The disconnect between the information consumers say they want, the information available to them on a consistent basis, and their ability to comprehend and effectively use the information calls into question the process consumers use to gather information and make sense of the information they gather. There is a gap in the literature on how consumers manage the process of choosing a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches to facilitate informed decision-making and related policy goals. Two other sets of literature provide insights on this process. The following section synthesizes the

literature on information seeking in health care and the impact of social constructs on sense-making.

Information Seeking

Just as with cost, quality and access information, one of the central challenges in the information processing stage of decision making is the ability to comprehend the information at hand. One approach that consumers use to aid in their information seeking and interpretation task is to seek information from trusted sources. Trusted information sources serve as a filter for consumers, who tend to place more validity in information gleaned from trusted sources and by extension rely on this information more heavily in making their own decisions (32, 34).

Sources of information

Consumers get information about health plans from a variety of sources that vary in reliability and accuracy (34, 84-85). For the elderly and the unemployed, the grapevine or word-of-mouth is a primary source of information (34). Doctors, friends, and family members are highly trusted; large managed care organizations, government, and the media are trusted the least (31-32, 86). The BBA and MMA require CMS to provide Medicare and Medicaid beneficiaries with comparative health plan information to facilitate plan choice. As noted above, consumers often struggle to make effective use of this information. Despite the challenges in comprehension, government agencies often have the most comprehensive and accurate assessments of plan performance and quality (87-89). The difficulty with interpretation may be one cause of mistrust in government as a source of plan information. Overcoming this distrust is essential if CMS is to effectively execute its role in helping consumers make informed choices (15).

Another key source of information is health plans. Marketing materials are clearly designed to influence consumer decisions and as such tend to focus attention on the perceived beneficial attributes of the plan, such as price, benefit scope and provider panels. However, there is a perception among consumers that health plans are not completely forthcoming in their marketing materials, especially in competitive markets where information on plan limits may put firms at a competitive disadvantage (90-91). This concern about the reliability of information and a concurrent mistrust of information provided directly by plans presents another challenge in providing information that is timely, accessible, and relevant to consumers during the selection process (29, 88).

A final source of information for many consumers is the human resources staff of their employer. Benefits managers serve as intermediaries and agents for employees when negotiating with health plans. Just as with other information intermediaries, employers may not always provide the best information to employees. Hibbard et al (1997) found that employers were also confused by the complexity of plan information and often employed simplification strategies, such as accreditation as a measure of plan quality, to make their plan decisions (29). If the research on large employers/purchasers serves as a guide (29) it seems highly unlikely that locally based non-profit consumer advocates (such as the Area Agency on Aging) can help consumers make fully informed decisions. The result is that it is even more likely that consumers will turn to trusted sources (family, friends and caregivers), all of whom also lack the capacity to effectively navigate the information morass. The result is that consumers are just as likely to make a plan choice based on the collective recommendation of their constructed information network rather than the recommendation of their employer (17, 30). One final note of

concern about this tendency to trust the advice of friends and family, Weaver et al (2007) and others have noted a tendency for individuals to assume greater uniformity of diverse opinions than may actually exist (92). If one or two key informants repeatedly recommend an option, consumers have a tendency to project that opinion more widely among their information sources (45, 92-93). As a result a single individual with a positive or negative personal experience may be highly influential on others' choices.

The information sought from family and friends tends to be anecdotal and based on personal experiences with providers and health plans (33). One caution should be noted. When family members and friends are used as information intermediaries there is a risk that they may misinterpret or recall information incorrectly. Some studies on patient recall find that as much as 80 percent of information communicated to patients during an exchange with a physician is forgotten within 24 hours (94). Further, nearly half of the information that was recalled was incorrect (95-96). Information dissemination strategies that rely on family members and friends as distribution channels will need to account for recall error and health literacy among intermediaries as well.

The challenge of literacy

A growing body of research has begun to explore the impact of literacy, health literacy and number literacy (numeracy) among consumers (82, 97-99). The findings from these studies are sobering. Across the board studies found that consumers with lower levels of reading literacy had difficulty understanding health outcomes, quality information and performance metrics (100-104). In addition, individuals with low general and health literacy were more likely to be hospitalized, had lower levels of compliance with prescribed therapy, and were less proficient at managing a chronic condition (105-

108). These findings reinforce the need for plans and policy makers to find effective communication approaches that facilitate information uptake for consumers. That may mean requiring plan information to be written at a reading level lower than the current 8th grade requirement and providing information support through Area Agency's on Aging and other community information sources. For example, as part of an earlier study the author and colleagues reviewed all marketing materials provided to consumers by health insurance plans licensed in Pennsylvania. The mean reading level for materials provided by the plans was 11th grade, well above the 8th grade level required by Insurance Department guidelines (33).

Social network support for decision making

Because consumers are usually not involved in the process of developing information about health plans, they often have no context for interpretation when they receive the information (41, 109-110). As a result consumers develop their own context for interpretation by drawing on the information resources and collective knowledge in their own communities (111-112). The literature on social networks provides some insights on the contextual effects on decision-making support. In a recent article Sorensen investigated the social learning effects of health plan choice among employees in the University of California system (113). Sorensen focused on new hires and postulated that in the absence of personal knowledge about plan options, new employees would monitor the plan selections of their peers and make their own plan choice accordingly. While the peer-effect measured by Sorensen did not dominate plan choice models it did have a significant effect in the model. Sorensen's work is the first to model peer effects in health

plan selection and mirrors similar research on the impact of peer group on personal attitudes (114).

While not directly related to health plan choice, there is an emerging body of research that examines the effect of social or environmental context on consumer behavior (115-116). Of particular interest for this analysis is a consistent finding that consumer decisions are influenced by environmental cues, and that these effects are more prominent when the consumer in question has strong association feelings with the relevant peer set (115, 117). One of the strongest associations noted in this literature is rurality, specifically the dynamism of self-reliance and interdependence that exists in rural communities (118-121).

Rural communities provide a particularly relevant setting for exploring the impact of context on individual decision makers. Rural communities continue to experience significant health disparities when compared to urban places (112). In addition, rural residents face considerable economic and physical barriers in accessing healthcare (114). Another factor that makes rural communities unique settings for evaluating community impacts is the often-high degree of interconnectedness among residents of rural places; rural communities are characterized by well-developed collective efficacy and community cohesion (111, 118). This cohesion provides rural community residents with an important resource over time. Walsh (2003), uses the term 'relational-resilience' to describe the benefits of rural community networks for each of the individuals within the community (125).

Next Steps

The literature presented here on factors that influence consumer decision making, their information needs and the sources of information available to them provides a foundation on which to build. This section concludes with a discussion of topics for future research.

There is a fundamental tension between the amount and type of information consumers say they want and what they can effectively comprehend. Several of the factors that consumers say would be helpful to them are complicated and difficult to present and interpret (15, 38). Additional research is needed to determine the optimal amount and type of comparative plan information to present to consumers. Effectively communicating the information mandated by the BBA and MMA to Medicare beneficiaries without overwhelming them continues to be a significant challenge (1, 3).

In addition, the development of national, regional and disease-specific benchmarks has added complexity without improving comprehension (126). More research is needed on how best to present such benchmarks to consumers in meaningful and easily understandable ways (127). Some consumers have more difficulty than others in managing the complexity of information in the decision making process. They may prefer to count on the assistance of their doctor or may rely on family members, friends, employers or others to make the plan choice for them. Further research is needed on how to utilize these personal information resources as effective distribution channels for disseminating information to support decisions made through these intermediaries (29, 128). The literature is clear that many of these agents face the same challenges as the consumers they are trying to assist (34, 84-85). It is at least as important to develop

effective decision-support tools for these intermediaries as for consumers, if improvements in health care decision-making are to be achieved.

Finally, an emerging literature demonstrates that community effects have the potential to influence consumer choice (113). Additional research on social context effects in larger community settings would extend our knowledge and begin to establish empirical evidence for use by policy makers in designing effective dissemination approaches to improve consumer decision making.

The following propositions based on the literature may serve as a guide for future research efforts.

Proposition 1: Consumers need for an agent or knowledgeable other in the decision-making process increases with the complexity and volume of information that the consumer must process.

Proposition 2: The community (and the constructed information network embedded in the community) serves as the agent for consumers making a health plan choice.

Proposition 3: The community (and the constructed information network) serves to reinforce and legitimize health plan selections after they are made.

Proposition 4: The greater community experience with managed care, the more likely an individual will be to choose a managed care plan.

Proposition 5: The greater the number of community organizations offering information sessions on health care, the more likely consumers are to be satisfied with the information they have prior to choosing a health plan.

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CHAPTER FOUR

The Influence of Community Context on Health Plan Decisions:

An empirical test of community context on health plan choice.

Objective. To examine the effect of community context variables on the health plan choices of consumers with employer-sponsored health insurance options.

Data Sources. Statewide survey of 1,200 rural Pennsylvania residents and Pennsylvania Department of Health reports on managed care penetration.

Study Design. Models of plan choice were estimated using the binary logistic regression model in SPSS. Separate models were estimated for plan change using King's rare event logit module in STATA.

Data extraction. Data covered all individuals with employer-sponsored insurance who had a choice between a FFS insurance plan and an HMO insurance plan (n=368). Data for the plan change models is derived from reported plan type in 1998 and selected plan type in 1999 (n=34).

Principal Findings. Adding community context variables significantly improves the predictive power of both choice models and plan change. Individuals in poorer health have a strong preference for FFS models. Those who have a household member who requires frequent care have a strong preference for FFS plans. Consumers are sensitive to restrictions on provider choice, specifically restrictions on physicians and hospitals.

Conclusions. The results suggest that adding community context variables to models of plan choice would improve estimates. The finding of preference for FFS plans among those requiring frequent care may reflect the importance of an established relationship with a provider. However, if public plans and employers are going to use managed care models to contain costs and improve the care of individuals with chronic health needs then a broad information campaign to educate consumers about the prevention and chronic care management benefits of managed care models will need to be undertaken.

Keywords. Decision-making, health plan choice, community context, choice models.

Introduction

Ongoing changes in health insurance markets place an increasing burden on consumers to make informed decisions between insurance products and plan structures. Both private and public plans assume that consumers have the capacity to move through the decision making process by acquiring information, assimilating that information and making an informed choice that provides them access to the highest quality care for the lowest cost. The expectation that consumers can effectively use complex healthcare information is reinforced by policy makers (through the Balanced Budget Act of 1997) and consumer advocacy organizations, such as the Leapfrog Group, through their efforts to provide more information to consumers (Delbanco, 2005). Complicating the decision making challenge is the dynamic nature of the healthcare context within which consumers are expected to play a more active and informed role. For example, health delivery systems are evolving changing access options. At the same time, insurance plan options are becoming more complex, changing the financial implications of plan choice (Tu and May, 2007; Scanlon, Nalli and Libby, 2007). Further complicating the assessment of financial impacts is the recent addition of direct incentives to consumers and providers through consumer-driven health plan structures and pay-for-performance initiatives (Brennan and Reisman, 2007; Tu and May, 2007; Polsky et al, 2005). Finally, information on provider and plan quality is increasingly abundant but still difficult for many consumers to understand, making value judgments difficult (Chernew, Rosen and Fendrick, 2007; Brennan and Reisman, 2007).

There are few other markets in which consumers must deal with so complex a set of variables in order to evaluate their choices and arrive at a decision. There are also few

decisions that combine the uncertainty of need with the potential for long-term effects as those that determine cost and access to health care services (Marquis et al, 2006; DeWalt et al, 2004). In this context it is important that policy makers and consumer advocates understand the information seeking behavior of consumers in order to facilitate informed decision making.

The primary goal of this research is to examine the effect of community context variables on the health plan choices of consumers with employer-sponsored health insurance options. A secondary goal is to advance our understanding of the factors that influence consumer choice to strengthen future research and inform information dissemination approaches.

Literature Review

In 1999, Lubalin and Harris-Kotjetin (RTI) examined the literature to test the idea that consumers have the capacity to integrate information on cost, quality, and plan attributes to arrive at an informed choice resulting in the selection of a low-cost, high quality health plan. What they found was that consumers are confronted by health information that they largely could not understand. Further most consumers do not even understand the context in which they are being asked to choose. Lubalin and Harris-Kotjetin effectively identified several gaps in our knowledge about how consumers move through the decision making process and called for additional research to bolster our understanding of the process in order to support consumers, health plans and policy makers toward their shared goal of informed choice. Although there is a growing body of research on consumer choice in healthcare (Scanlon, Chernew, and Lave, 1997; Hibbard, Slovic, and Jewett, 1997; Hibbard, Jewett, Engelmann, and Tusler, 1998; Spranca et al,

2000; Schoenbaum, Spranca, Elliott, Bhattacharya, and Short, 2001; Uhrig and Short, 2002; Farley et al 2002a, 2002b; Spranca et al, 2007; Hibbard et al, 2007) most has focused on the impact of adding information to the marketplace, retaining the assumption that consumers are able to make use of new information as it is presented. There is a gap in the literature on how consumers move through the decision making process of choosing a health plan. Understanding this process is critical for crafting effective information presentation and dissemination approaches for consumers.

The primary goal of this research is to examine the effect of community context variables on the health plan choices of consumers with employer-sponsored health insurance options. These individual and community resources have been identified as important supports to informed decision making by helping consumers acquire, interpret and validate information prior to selecting a health plan (Johnson and Meishke, 1991; Borowsky, Goertz and Laurie, 1996; Hibbard, Slovic and Jewett, 1997; Tumlinson, et al, 1997; Calkins et al, 1999; Edgman and Levitan, 1996). The identification of family and friends as a key information resource has come largely through research with focus-groups (Sofaer et al, 2007; Marquis et al, 2006; McGee, Sofaer and Kreling, 1996), surveys (McCormack et al, 2002; Hibbard et al, 1998) and in some cases controlled experiments (Hibbard et al, 2002; Uhrig and Short, 2002). One of the challenges to these approaches is the expense of gathering enough information to enable empirical testing. This study is the first to use survey data to empirically test the influence of community resource factors on health plan choice. If these factors prove to influence choice then models of health plan choice should incorporate these factors going forward.

Economic models of health plan choice

There is widespread agreement in the literature that price has a direct and significant impact on health plan choice (Abraham, Vogt and Gaynor, 2006; Atherly, Dowd and Feldman, 2004; Buchmueller, 2000; Buchmueller and Feldstein, 1996; Barringer and Mitchell, 1994; Dowd and Feldman, 1994; Grazier, et al, 1986). Most of these economic studies have modeled the impact of premium changes on whether employee's elect to participate in insurance offered by their employer or on plan switching behavior when plan options have differing premiums. Buchmueller (2000) showed that a \$10 increase in premium would increase the likelihood of switching between plans. This estimated impact has been confirmed in several studies, notably Dowd, Feldman and Coulman (2003) who estimated a 4% decline in market share resulting from a \$10 increase in plan premium. In increasingly competitive health insurance markets consumers' price sensitivity is likely to lead to benefits redesign in order to minimize premium increases (Cutler, 2000; Gabel et al, 2002).

One of the challenges this presents for consumers is that benefits restrictions can be much more difficult to discern than premium changes. As a result consumers may discover coverage limits only after they use services and are billed for benefits they assumed were covered (Calkins et al, 2000; Royalty, 2007). Ultimately, the ability to balance price and benefit constructs requires transparency about both features (Colmers, 2007). However, the challenge remains that consumers often have difficulty understanding the information that is available in the marketplace and therefore struggle to make an informed decision that maximizes value (Chernew, Rosen and Fendrick, 2007).

Two recent studies (Abraham, Vogt and Gaynor, 2006; Atherly, Dowd and Feldman, 2004) have examined the effect of premiums and benefits on health plan decisions within the Medicare population. Their findings confirm that plan characteristics (benefits) have a significant impact on plan choice. For example, offering a prescription drug benefit increased the probability of selecting a plan by 43.7 percent (Atherly, Dowd and Feldman, 2006). Other factors that have been consistently shown to influence choice include age, gender, household income, provider choice, health status and plan convenience (Oetjen et al, 2006; Atherly, Dowd and Feldman, 2004; McCormack et al, 2001; Feldman, Christianson and Schwartz, 2000; Scanlon, Chernew and Lave, 1997).

In addition to these economic studies, a small body of research is beginning to investigate qualitative effects on health plan choice. In a recent article Sorensen investigated the social learning effects of health plan choice among employees in the University of California system (Sorensen, 2006). Sorensen focused on new hires and postulated that in the absence of personal knowledge about plan options, new employees would monitor the plan selections of their peers and make their own plan choice accordingly. While the peer-effect measured by Sorensen did not dominate plan choice models it did have a significant effect in the model. Sorensen's work is the first to model peer effects in health plan selection. While not directly related to health plan choice, there is an emerging body of research that examines the effect of social or environmental context on consumer behavior (White and Dahl, 2006; Dijksterhuis et al, 2005). Of particular interest for this analysis is a consistent finding that consumer decisions are influenced by environmental cues, and that these effects are more prominent when the consumer in question has strong association feelings with the relevant peer set (Strack,

Werth and Deutsch, 2006; White and Dahl, 2006). One of the strongest associations noted in this literature is rurality, specifically the dynamism of self-reliance and interdependence that exists in rural communities (Walthen and Harris, 2007; Sutherns, McPhedran and Haworth-Brockman, 2004; Ahern, Hendryx and Siddhathan, 1996; Haythornwaite, 1996). This study furthers the empirical exploration of environmental effects initiated by Sorensen (2006) and expands the literature on community impacts by focusing on rural communities.

Methods

Research design

The data presented in this study are based upon a telephone survey of 1,200 adult Pennsylvania residents who reside in one of the state's rural counties. The survey was conducted by Millersville University's Center for Opinion Research (COR) as part of a larger multi-method study funded by the Center for Rural Pennsylvania (CRP). The aims of the CRP study were to understand how consumers choose a managed care plan and subsequently use health services within the selected managed care plan. Interviewing took place between May 19 and June 16, 1999. Interviews lasted an average of 12 minutes. A random-digit-dialing sample of rural Pennsylvania households was drawn, after which a respondent within each household was selected on the basis of his/her knowledge of the household's health insurance situation. The methodology employed ensured that every rural telephone household in the state had a known chance of selection. The sampling error for a random sample of 1,200 is plus or minus 2.8% at the 95 percent confidence level.

Sample Design

The most efficient means of sampling telephone households located in rural Pennsylvania is through the use of a random-digit-dialing sample. The Center's method for generating random-digit-dialing (RDD) telephone samples provides for a single stage, Equal Probability of Selection Method (epsem) sample of residential telephone numbers: in other words, there is an equal and known probability of selection for all residential telephone numbers in the area selected for study. Moreover, to enhance the reliability, validity, and confidence in the survey data, a second stage sampling methodology was employed. After selecting a household via the RDD sample, one of the household members is also selected randomly. This is required to eliminate biases that arise from interviewing the person who answers the telephone.

The sample procedures employed at both the telephone exchange and household levels insure that all telephone households within the study area have an equal chance of selection, [and that each adult within a sampled household has an equal probability of being interviewed.] This procedure is the most rigorous methodologically and plays a key role in producing sample estimates that accurately reflect true population values (Dillman, 1978; Aday, 1989).

For the CRP survey, a random-digit-dialing sample was drawn for all rural Pennsylvania counties. The sample was designed to include both listed and unlisted telephone numbers, and consisted of households randomly selected from all rural exchanges in the state. The sampling error for this survey is plus or minus 2.8 percentage points where the distribution of responses is 50 percent. Overall, the survey response rate was 68.6%, with 1,748 telephone calls yielding 1,200 completed surveys.

Table 2 provides descriptive statistics for the respondents. Respondents to this survey differed from non-respondents on some demographic characteristics. Survey respondents were more likely to be female (68%) than the population as a whole (52%). Survey respondents had completed more education than non-respondents with 53.3 percent completing some education beyond high school compared with 43.8 percent of non-respondents. Survey respondents also had higher household incomes than non-respondents with 33.1 percent of survey respondents in households with annual incomes less than 35,000 dollars compared to 43.8 percent of non-respondent households. Finally, survey respondents were more likely to be married (68.0%) than non-respondents (51.6%). Survey respondents were approximately the same age (43.8 years) as non-respondents (43.5 years). Demographic data for non-respondents are derived from the county profiles for those Pennsylvania counties from which survey respondents were drawn (Center for Rural Pennsylvania, 2000).

Questionnaire Design

The survey instrument was designed by this author along with research team colleagues in consultation with COR staff. After a preliminary instrument was created, a working draft of the survey instrument was pre-tested with a sample of 100 respondents before full field interviewing began. The 100 respondents were randomly selected using the same Computer-Assisted Telephone Interview (CATI) approach employed for the full survey. Random-digit-dialing was used for all rural Pennsylvania counties. The sample was designed to include both listed and unlisted telephone numbers, and consisted of households randomly selected from all rural exchanges in the state. The pre-test provided detail regarding the effectiveness, efficiency, and validity of the questionnaire, along with

an indication of the thoroughness of the instrument. Pre-testing increases the likelihood that the questions provide accurate data, and decreases the likelihood of collecting unusable data--which makes it an integral component of questionnaire design (Dillman, 1978). Based on findings from the pre-test, modifications were made to the final questionnaire. Key changes to the final survey instrument include the use of the term HMO in place of managed care organization as the term managed care organization was poorly understood by pre-test respondents. Also, based on feedback from the Technical Advisory Group and pre-test respondents the final survey used the labels regular insurance rather than the terms fee-for-service or indemnity and managed care as both terms were confusing to pre-test respondents. Finally, the terms MediGap and PACE (Pharmaceutical Assistance Contract for the Elderly) were added to a question about Medicare Supplemental insurance to help clarify the meaning of supplemental. The final survey instrument is included as Appendix B.

Sample

The research sample for this analysis consists of those individuals with employer-sponsored health insurance who had a choice of plans when they made their insurance choice. The sample was limited to those with employer sponsored health insurance (n=783). This subset was selected because the survey did not directly ask for premium or other price information from respondents. While it is likely that premiums will vary across employers it seems reasonable that this group will be more homogeneous on price than the full sample which includes those covered by Medicare and Medicaid as well as those individuals who were self-insured. This approach follows similar studies in the literature which have modeled factors affecting plan choice in Medicare populations

(Abraham, Vogt and Gaynor, 2006; Atherly, Dowd and Feldman, 2004; Dowd, Feldman and Coulam, 2003), Medicaid recipients (Farley et al, 2002) and single employer groups including Federal employees (Oetjen, et al, 2006), University employees (Buchmueller and Feldstein, 1996) and industry (Barringer and Mitchell, 1994; Robinson, et al, 1993).

As a proxy for cost-sharing, firm size is included in the model, based on the supposition that larger firms have a larger risk pool and therefore are able to negotiate more favorable pricing than smaller firms and pass those savings onto employees by bearing more of the premium cost per employee than smaller firms. In previous studies, firm size has been shown to influence both employer options (Vistnes et al, 2006; Dranove et al, 2000) and employee decisions on participation (Blumberg, Nichols and Banhin, 2001).

Measures

This analysis focuses on choice of plan type as the response variable. In addition to the treatment of price noted above the following explanatory variables were included to investigate their relative impact on plan choice. Each of the variables below has been used as a proxy for the key attribute noted in a well-established body of literature employing economic/econometric models to assess their effects on plan choice (Abraham, Vogt and Gaynor, 2006; Parente, Christianson and Feldman, 2004; Gruber and McKnight, 2003; Gabel et al, 2001; Scanlon, Chernew and Lave, 1997; Davis et al, 1996; Berki and Ashcraft, 1980).

Quality The literature on the impact of quality information on health plan choice has grown dramatically over the last decade. Much of this literature has assessed the impact of health plan report cards on consumer choice (Farley et al, 2002; Uhrig and

Short, 2002). When objective measures of quality are not available, consumer's satisfaction with their health plan is often used as a proxy for plan quality (Spranca et al, 2007; Lied et al, 2003; Harris-Kojetin et al, 2002; Newcomer, Preston and Harrington, 1996). In this analysis plan satisfaction is used to represent plan quality. Plan satisfaction is assessed by the following questions: See Table 1 for full question wording.

Provider Choice One of the central differences between FFS and HMO plans is restrictions on the choice of providers. While there is some evidence that Medicare recipients generally did not understand this difference (Hibbard and Jewett, 1998) at the time this study was fielded, more recent studies others have shown an increased understanding of this fundamental difference between plan types (McCormack et al, 2002; Dowd, Feldman and Coulam, 2003). This model incorporates the two variables most often used to represent provider choice, limit on choice of doctors and limit on choice of hospital.

Benefits A number of studies have examined the impact of benefits mix on plan selection (Florence, Atherly and Thorpe, 2006; Atherly, Dowd and Feldman, 2004; Lied et al, 2003; Gabel et al, 2002; Short and Taylor, 1989). Most notably Atherly et al (2004) found that plan characteristics, including the scope of benefits, significantly impacted beneficiaries' decisions to enroll in Medicare+Choice plans. The treatment of benefits in econometric models varies widely with some including a measure for each benefit type, such as dental benefits, vision benefits, mental health coverage (Monheit et al, 1999; Hellinger, 1995) others have used a single variable to represent benefits effects. Most recently Spranca et al (2007) tested a binary measure of benefits (high/low) and demonstrated similar effects as models employing multiple benefits variables. This

analysis will use the same approach taken by Lied et al (2003) and Harris-Kojetin et al (2002) by using a measure of satisfaction with benefits. The variable used here is self-reported problems with benefits coverage, a direct measure of consumers' access to services they felt they needed. Specifically, a yes/no response to the question, Have you had any problems with your plan in getting the health care you thought you needed?

Convenience The literature contains several measures of convenience including (travel-time, wait-time, length-of-time to schedule an appointment and satisfaction with out-of-pocket costs. Studies have shown mixed results in estimating the effect of convenience on plan choice (Atherly, Dowd and Feldman, 2004; Buchmueller, 2000; Feldman et al, 1989; Juba, Lave and Shaddy, 1980). I use three measures of convenience in the model, two that measure time costs associated with access (Atherly, Dowd and Feldman, 2004) and one that measures out-of-pocket costs. The time cost measures are pre-approval requirements by the plan before visiting an emergency room or seeing a specialist. A self-reported problem with getting the plan to pay for health services is used to measure out-of-pocket costs. When consumers experience higher than expected out-of-pocket costs they often must engage with their plan directly to appeal coverage decisions and understand sometimes highly nuanced coverage rules, leading to inconvenience and dissatisfaction (Brennan and Reisman, 2007; Tu and May, 2007).

Employment The dynamic changes in health insurance structures present consumers with a number of new choices in employer-sponsored health coverage, including choosing to take the equivalent dollar value of their employers' health contribution as salary (Royalty, 2007; Galvin, 2002). This approach is more likely in larger firms with the capital resources and risk-assessment capacity to evaluate the

inherent cost-benefit tradeoffs (Gabel et al, 2001). The cash versus coverage option may be particularly attractive to consumers who have other coverage options through a spouse or other job setting (Abraham and Royalty, 2005; Monheit et al, 1999). However, some workers, particularly those working less than full time, may stay in an unfavorable employment situation for access to health insurance (Gabel et al, 2002; Dranove et al, 2000). I incorporate three employment related measures to capture these potential effects, employment type (full time or other), sharing the same coverage as a spouse, and workplace size.

Health Status The most widely used measure for the effect of personal health is self perceived health status (Scanlon, Chernew and Lave, 1997; Hellinger, 1995). The literature has been mixed on whether health status leads to selection bias (Feldman, Dowd and Wrobel, 2003; Cutler and Zeckhauser, 1997; Miller and Luft, 1994) but it has been shown consistently to impact health plan choice. Some of this effect may be due to pre-existing condition clauses in health plans that make switching difficult (Schlesinger, Druss and Thomas, 1999). A second measure often used in economic models is a count of chronic health conditions. These measures tend to be linked to an individual (Atherly Dowd and Feldman, 2004; Feldman, Dowd and Wrobel, 2003; Royalty and Solomon, 1999) rather than at the household level. For this analysis the interest was information seeking behavior and as a result using a measure of household need may serve as a broader indicator of the demand for health information. I use both self-reported health status and a household measure capturing the need for frequent medical care by a member of the household. See Table 1 for full question wording.

Demographics In addition to health status several other demographic variables have been shown to impact health plan choice, including, age, gender, household income and education (McBride, 1998; Cutler and Zeckhauser, 1997; Scanlon, Chernew and Lave, 1997; Barringer and Mitchell, 1994). These studies and others find that women prefer plans with more comprehensive coverage of preventative services, and that those with higher household income prefer less-restrictive (FFS) plan types. Similarly age impacts preference of plan type with older persons showing a slight preference for FFS models over HMO plans (Feldman, Dowd and Wrobel, 2003). Education level has also been shown to impact plan choice, however, education may be serving as a proxy for literacy and related difficulty in understanding plan information leading to choice decisions based on a single factor such as price (Hibbard et al, 2007; Calkins et al, 2000). Demographic variables included in this analysis are age, gender, education and household income. Some respondents were over sixty-five years of age and thus eligible for Medicare. Only those respondents who were employed and reporting employer-sponsored coverage were included in the research sample. Medical Assistance recipients were excluded from the research sample. In addition, 7.6 percent of respondents in the research sample (n=28) refused to answer the household income question. This mirrors the 7.4 percent who refused to answer in the full survey sample (n=89/1,200).

Choice Inertia There have been very few studies in the decision-making literature that have modeled decision avoidance. Arguably this measure would be of interest if the natural tendency of individuals is to stay with the plan they have, especially if switching is difficult. The literature is clear that consumers' face considerable difficulty

in understanding the complex information necessary to make an informed plan choice (Hibbard et al, 2001; Hibbard et al, 1998; Hibbard, Slovic and Jewett, 1997; Hibbard and Jewett, 1996). The supposition that follows is that absent dissatisfaction with their current plan, individuals will tend to stay in their existing plan given the option. This analysis addresses inertia by incorporating a measure of the type of plan in which the individual was enrolled prior to the choice assessed during the survey.

Community The primary goal of this research is to examine the effect of community context variables on the health plan choices of consumers with employer-sponsored health insurance options. Understanding the impact of these community level factors may help to enhance the predictive power of models of health plan choice and inform information dissemination efforts. This research adds four measures of community effect to the classic economic model of health plan choice. The first is a measure of community connectedness based on the supposition that the longer an individual is part of a community the greater their knowledge of and access to community information resources. This variable is operationalized as years at current residence and years in county. In Pennsylvania, insurance firms are licensed to sell products at the county level, thus information on insurance products tends to be stable over time at the county level (HAP, 2000).

The second community measure is the impact of advice from family, friends and other community sources on an individual's health plan choice. Other studies have examined the impact of family and friends on health plan decisions (Reed and Trude, 2002; Sofaer et al, 2001). However, both studies used focus group methodology to evaluate the influence of family and friends on decision-making. The present study is the

first to test the impact of community information resources will be tested empirically. The third measure related to community impact is a self-reported satisfaction measure. Survey respondents were asked, 'When you made the decision to choose an insurance plan, how satisfied were you with the information you had?' Because plan information is specific to the county and its related local provider network this measure is included with community level effects (Calkins et al, 2000; Gamm et al, 1998). The fourth measure of community level effects captures the information seeking demand on the respondent. Respondents were asked; Who in your home tends to make health insurance decisions? The response to this question helps us understand whether the decision burden rests on an individual or is shared (Anderson, 2003). I include this measure as a community level variable rather than a family-specific variable as a proxy measure of information seeking behavior. If individuals choose on their own they may seek validation and confirmation from community sources more thoroughly than those who share decision making responsibility with another member of their household. Joint decision makers may reinforce each other and thus limit information seeking from community sources.

Market Information One final set of community level factors to be considered is the amount of information in the environment in which consumers' make their health plan decisions. Much of the early work examining the impact of information availability on decision-making focused on the bounded-rationality of organizational decisions (March and Simon, 1993). The decision-making literature in health care provides evidence that there is an abundance of information in the marketplace, but consumers are often overwhelmed by the amount and complexity of information they need to manage. One of the key sources of information flow into the environment is tied to the marketing

efforts of health plans as they try to differentiate themselves to plan-sponsors and consumers. One classic approach to measure the effect of marketing efforts is to track purchases related to advertising efforts (Berkowitz, 2006). For health plans market share is used to measure purchase decisions. Managed care penetration rates effectively measure the percentage of persons in a county enrolled in a managed care plan (HAP, 2000).

Higher managed care penetration rates have been shown to improve the rate of prevention screenings (Baker et al, 2004), lower plan costs to employers (Baker et al, 2000; Baker and Corts, 1996), improve physician access in underserved areas (Escarce et al, 2000), and slow the rate of growth in hospital costs (Gaskin and Hadley, 1997). All of these effects are linked to growth in managed care market share. These findings suggest that managed care marketing efforts are effective in driving health plan choice. This analysis incorporates two measures of managed care market presence. The first is managed care penetration rate in 1999, at the time the CRP survey was fielded. The second is a measure of managed care penetration stability over time. The working presumption is that high growth markets will have higher levels of information due to competition for consumers among plans (Dranove, Simon and White, 1998). This measure also reflects the tendency of consumers to relate approval of a product or service with frequency of positive messages, even if the service provider is sending the message (Weaver et al, 2007).

Models

With this set of variables two models were estimated. Plan choice is the dependent variable in both models. Plan choice is coded as a binary variable with fee-for-

service (FFS) plans coded as 1 and managed care plans (HMO) coded as 0. Plan year 1999 is modeled against a sample of 368 individuals, 195 in FFS plans and 173 in HMO plans.

In the first model plan choice is a function of plan attributes, person attributes and a measure of choice inertia. The second model adds community information factors to the set of independent variables. The contribution of community effects will be assessed by comparing goodness-of-fit measures and parameter estimates from the two models. Both models employed the binary logistic process in SPSS 15.0 (Norusis, 2007).

Model 1

Plan choice = Plan attributes + Person attributes + Choice Inertia.

In this model plan attributes include: quality (satisfaction with the health plan), provider choice (plan limits on doctors and plan limits on hospitals), benefits (problems receiving needed health services), and convenience (problems with out-of-pocket costs, pre-approval required for visiting an emergency room, and pre-approval required before seeing a specialist). Person attributes include: employment measures (employment type, shared coverage and workplace size), health status (self-reported health status and household member who requires frequent care), and demographic measures (age, gender, educational attainment, household income, and marital status). In addition, a measure of the type of plan in which the individual was enrolled prior to the dependent choice being modeled was added to assess the effect of choice inertia.

Model 2

Plan choice = Plan attributes + Person attributes + Choice Inertia + Community.

In the second model community information sources are added using six variables (1) years in residence or years in county, (2) self-reported impact of advice from family, friends and other community sources, (3) pre-choice satisfaction with available information, (4) a measure of decision-making burden, (5) managed care penetration rate, and (6) market stability.

Results

Table 1 provides details of the survey questions and the response categories used in the final model. The final data set includes 368 respondents, all of whom were enrolled in employer sponsored plans categorized as fee-for-service (FFS) or Health Maintenance Organization (HMO). Descriptive statistics for the subject specific characteristics by plan type in the year prior to the modeled choice are provided in Table 2.

There are several differences between the samples worth noting. As would be expected those in an HMO reported significantly higher restrictions on providers than those in a FFS plan. Nearly all respondents in an HMO reported restrictions by their plan on physician choice (94.3%) compared to 34.4 percent of those in FFS plans. Similarly, 57.4 percent of HMO respondents reported restrictions on their choice of hospitals compared to 19.4 percent for those in FFS plans. The difference between samples is significant for both variables. HMO respondents also report higher administrative barriers to access, with 82.3 percent reporting that their plan requires pre-approval before they use an emergency room and 90.8 percent reporting that their plan requires approval from their primary care physician before seeing a specialist. For FFS enrollees these requirements are 14.1 percent and 43.6 percent respectively. Again the difference between samples is significant for both variables.

There are also differences in the health status of the two groups with 41 percent of those in a FFS plan reporting that they are in good, fair or poor health as compared to 27 percent of those enrolled in an HMO. The difference in self-reported health status between the samples is significant at the .005 level. In addition, one in four of those in an FFS plan report that there is someone in their household who requires frequent medical care. Just 11.3 percent of HMO enrollees in our sample have a household member who requires frequent care. These results are significant at the .001 level and are in keeping with many other studies in the literature that show HMO enrollees to be relatively healthier than those in FFS plans (Berki and Ashcraft, 1980; Barringer and Mitchell, 1994; Atherly, Dowd and Feldman, 2004). This factor is also important if those in poorer health anticipate having to change physicians if they change plans. There is also a difference in mean age between the samples. Mean age for those in FFS plans is 44.78 years and 42.25 years for those enrolled in an HMO. This difference is significant at the .05 level. The final variable for which there is a significant difference between samples is Market Change which measures the dynamism of the managed care market through change in market penetration rates in the three years prior to the study year. Three quarters (74.5%) of HMO enrollees lived in stable managed care markets. Seventy-one percent of those in a FFS plan live in stable managed care markets. This difference is significant at the .05 level.

There were no other significant differences between the samples among other variables; however, two other factors are worth noting because of their relevance to this study. A slightly higher percentage of those in FFS plans (49.8%) have completed high school or less education than those in HMO plans (41.8%). This is important in the

context of information access and comprehension. While literacy is not the only consideration for effective information dissemination it is nonetheless an important consideration for plans, policy makers and consumers (Hibbard et al, 2007). An equally important factor for this research is the percentage of persons in each sample reporting community sources as the most helpful source of information for making their plan choice. Among HMO enrollees 15.7 percent report community sources as most helpful, while just one in ten (10%) of those in FFS plans identify community sources as most helpful. In addition, a slightly higher percentage of those in a FFS plan (62.1%) choose their plan on their own, compared to 55.3 percent of those in an HMO.

Other than these differences the samples are similar in marital status, full-time employment, employer size, household income and tenure in their residence and county. The mean HMO penetration rate was also similar across plan type.

Table 3 provides the parameter estimates, odds ratios, standard errors and confidence intervals for the two models of choice. Provider choice is significant in both models. In this analysis limits on provider choice make the selection of an HMO plan significantly less likely among respondents (OR on physician limits = .016 in Model 1 and OR = .014 in Model 2). The most striking finding is that those in poorer health are much more likely to select a FFS plan (OR = 6.66 in Model 1 and OR = 8.96 in Model 2). Those with a household member who needs frequent care are also much more likely to choose a FFS plan than and HMO (OR = 43.56 in Model 1 and OR = 120.16 in Model 2). The odds of choosing a FFS plan increase slightly with age when community context variables are added (OR = 1.15).

There are several other variables that are worth mentioning even though they are not significant in the models. Variables that measure restrictions on choice and difficulty with plan administration (i.e., coverage problems, payment problems, and pre-approval requirements for ER visits and specialty referrals) all show a pattern of preference for FFS plans which tend to be less restrictive than HMO plans. Also, individuals with less education show a slight preference for FFS plans, which may be attributed to the challenge of reading through plan material and the capacity to evaluate sometimes complex differences in plan structure and costs. Individuals in median income households (i.e., \$30,000 to \$75,000 household income per year) prefer FFS plans than those in lower income and upper income households. One possible explanation for this mixed result is that lower income households may make their plan choice on premium alone. HMOs may be the low-cost alternative for these households. For upper income households, there may be a greater capacity to understand the value of prevention efforts in managed care plans, where those in lower income households may be more focused on cost and access for acute episodes.

At the outset the intent was to include a measure of inertia in these models, however, only 34 respondents changed plan types. King and Zeng (2004) found that logistic regression can underestimate the probability of these types of rare events and produce biased estimates in modeling. To address this potential bias the change variable was removed from the choice models and evaluated separately in Stata using a rare event logit technique developed by King (Stata, version 9). These models used a change variable calculated by comparing the plan type in which the respondent was enrolled prior to the choice (1998) and the type of plan chosen in the analysis year (1999) as the

dependent variable. Otherwise the change models employed the same set and order of independent variables as the choice models described above. Table 4 reports odds ratios, standard errors, p-values and confidence intervals for the change models. As in the plan choice models limiting choice of physicians has an effect on plan choice toward the less restrictive FFS plans. Here to, the tendency to change plan types decreases slightly with age (OR = .982) when community context variables are added to the model, however, this finding is not significant in the change model as it is in the plan choice model. The change model with community context included also shows a tendency towards inertia (no change) among married respondents (OR = .128), sole decision makers (OR = .169) and those in less mature managed care markets (OR = .013).

The final task in this analysis is determining if adding the community context variables to the standard economic model of health plan choice improves the predictive ability of the model. The determination is made by comparing the fit between the two models. Table 3 also reports goodness-of-fit measures for the two models. Comparing the log likelihood estimates for the two models reveals that adding community context to the model improves predictive ability significantly. The log likelihood for model 1 is 99.824 and for model 2 it is 78.559. The test of significance is made by comparing the difference between the log likelihood estimates from the two models against the chi-square distribution at 7 degrees of freedom because 7 additional community context variables were added to model 1 to test community effects (Rosner, 2000). The difference in the goodness of fit measures is 21.265, which falls between the chi-square values of 20.28 at the .005 confidence level and 24.32 at the .001 confidence level. Thus, the hypothesis that model 1 = model 2 is rejected at the .005 level of significance.

The same assessment of goodness-of-fit was used to compare the change models, yielding a similar result. The log likelihood for Change Model 1, where change is a function of traditional economic variables is 88.01. The log likelihood for Change Model 2, in which seven community context variables were added to Model 1 is 70.53. The difference 17.47 is significant at the .025 level. As in the choice model, adding the community context variables significantly improves the predictive power of the model.

Discussion

The primary goal of this research was to test the impact of community context on health plan choice. The results presented here clearly show that community context does influence consumers' health plan decisions and suggest that future efforts to model health plan choice would be improved by the addition of community effects. On the whole, the parameter estimates and odds ratios for the variables move in the same direction in both models with the majority of the effects strengthened in the fuller model incorporating community context measures.

This analysis begins to address gaps in the literature related to our understanding of community effects and provides a basis for designing future studies. A fuller exploration for example, of how much influence each information resource has on a consumer's decision would help focus information dissemination efforts on more influential sources. Further, the ability to identify and rank information sources by their level of influence would enable targeted marketing and information designs to improve the capacity of information sources to be provide consistent and accurate information to consumers.

The finding that limitations on provider choice influences plan choice affirms earlier research findings (Buchmueller, 2000; Davis et al, 1995). Indeed the market has already responded to this concern in the years since this survey was fielded. The development and growth of managed care models, such as Preferred Provider Organization (PPO) models that allow broader access to physicians though coupled with differing co-pay levels, has alleviated the restricted choice concern while maintaining the plans capacity to manage quality and cost through pre-approved provider panels.

The finding that health status and chronic health needs influence plan choice has also been well documented in the literature (Feldman, Dowd and Wrobel, 2003; Lied, 2003; Scanlon, Chernew and Lave, 1997). While there have been mixed results in studies of adverse selection in health plan choice, this research suggests that particularly for rural residents better information about provider participation may alleviate some of this concern. In many rural communities the number of generalist and specialist providers is so small that any managed care plan licensed to market insurance products in the county is likely to include most of the providers in the community (Escarce et al, 2000). If there are benefits to managed care models, for example, better rates of preventative services and management of chronic conditions (Baker et al, 2004) then removing this perceived barrier to enrollment may improve individual and community health.

One finding from the change models is also worth noting. Consumers in counties with low managed care penetration rates are considerably less likely to change plans than those in counties with higher rates of managed care penetration. In this sample only 34 individuals changed plan type from 1998 to 1999, 33 of those moved from FFS to HMO type plans. If public plans are interested in using managed care models to control costs

and improve screening and other prevention efforts among their beneficiaries, then they will need to make a concerted effort in less mature managed care markets to develop a critical mass of managed care enrollees before elective enrollment is likely to occur. This research suggests low levels of early adoption in managed care enrollment. Public programs may need to involuntarily enroll beneficiaries in managed care plans to establish the infrastructure and public comfort with this plan type in order to seed the market. If this approach is taken, careful consideration should be given to the factors identified in these models that positively influence choice, for example, focusing information about the positive association of primary care access and prevention efforts in managed care models to those in poorer health and/or who have chronic health care needs.

Finally, what this research makes very clear is that communities serve as interpretive environments for their residents. Information campaigns have historically focused on individuals, either through their employment status or tied to their eligibility for public programs. This research suggests that community level information campaigns, such as those undertaken during flu season, may serve to raise the general level of awareness among community residents. This foundational knowledge enables those who serve as information resources to engage in more detailed discussions about individual needs and person specific questions rather than spending time educating consumers about basic differences between FFS and managed care plans. Social marketing efforts have proven effective in reducing smoking among target populations and increasing general awareness about the negative side-effects of drug use (Redmond et al, 2004; Mason et al, 2003; Andreason, 1995). Policy makers should consider using social marketing tools to

improve consumers' basic knowledge about health plans, especially as the complexity of health plan options increases within a bounded set of parameters, such as cost-sharing levels and relative restrictions on providers.

Limitations

These conclusions are subject to some important limitations. First and foremost is the generalizability of the results. The sample used to model plan choice was limited to 368 individuals with employer-sponsored health insurance and was further limited to individuals who live in rural communities. The combination of these sample limitations may mean that the affect of community context may not be as prominent for Medicare and Medicaid recipients. This is especially relevant as the literature clearly shows that these cohorts have the most difficulty with comprehension of plan information. A larger survey with targeted over-sampling in these cohorts would enable more generalizable results.

Second, limiting the study to rural residents may heighten the community context effect if rural residents have more highly developed social networks than consumers who live in more urban areas. Again, a larger survey would enable stratification by population density or other urban/rural designation. Third, the very small number of persons in the sample that actually switched plans (34 of 368) argues for caution in interpreting these results. The use of the rare events logit technique in STATA helps limit estimate bias concerns, but future efforts should either focus on a cohort of individuals who switched plan types, or over-sample on switching behavior to ensure adequate sample representation on this factor.

Fourth, the survey was fielded in late spring 1999 in Pennsylvania. The health insurance market has experienced dynamic change in the eight years since the data was gathered. As a result, the conclusions derived from this research may not hold if the study was repeated in the current market environment. This is an ongoing challenge for all research on plan choice as the economic, regulatory and political environment related to health insurance coverage continues to experience dramatic change. The age of the data raises the question of whether contributions can be made to our current knowledge using data that is eight years old. There are two answers to this. First the absence of research in the literature that empirically addresses the questions analyzed here argues that this effort does make a contribution, even if the only contribution is to raise additional questions that need to be investigated. The second answer is that several research papers are published each year that utilize data that was collected well-before the research questions were framed. For example, Moon and Shin (2006) used Medicare Expenditure Panel Survey (MEPS) data from 1996 to 2000 to investigate utilization patterns among dual eligible beneficiaries. One of their key conclusions is that more research is needed to examine specific types of utilization. Similarly Hsia and colleagues (2007) used the MEPS data from 1996 to 2004 to examine the impact of changing reimbursement patterns on utilization. Saleh and colleagues (2007) used the 2002 MEPS data file to begin to investigate the impact of insurance type on prescription drug utilization and costs. Each of these studies uses data collected several years ago to raise and answer research questions that have current validity and contribute to our understanding of a very dynamic marketplace. This research follows that precedent.

Finally, the survey from which this data are derived was intended to yield descriptive statistics on the numbers and types of sources used by consumers in the information gathering stage of making a plan choice. As with many surveys the process of analyzing the results suggests opportunities for refining the questions and/or adding questions that would enable more detailed inquiry (Aday, 1989). Future explorations of the effects modeled here should include scalar or ranking questions to quantify the relative importance of each type of information source mentioned by respondents as helpful in their decision making process. Adding this information would bolster the ability to model effects by information source and also to refine distribution and dissemination targeted to specific information sources.

In conclusion, this work provides a foundation for future research by providing the first empirical evaluation of community context variables in health plan choice. Extending this analysis to larger samples and more geographically diverse samples will serve to reinforce these findings or yield different results entirely which would potentially argue for geographic and population specific information dissemination efforts. In addition, expanding the sample to include Medicare and Medicaid recipients would allow the examination of these effects in vulnerable populations that are challenged by the complexity and volume of plan information in the marketplace.

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Table 1: Variable Labels, Definitions and Sources

Label	Definition	Range	Value	Source
Plan99	Dependent Variable for Choice Models (1 and 2). Plan choice in 1999.	1 0	FFS HMO	Survey
Change	Dependent Variable for Change Models (3 and 4). Plan change 1998 to 1999.	1 0	Yes No	Survey
PlanSatis	How satisfied are you with your insurance plan?	1 2 3	Satisfied * Neither Dissatisfied	Survey
Doclimits	Does your plan limit what doctors you can see?	1 0	Yes No	Survey
Hosplimits	Does your plan limit which hospitals you can use?	1 0	Yes No	Survey
CovProblems	Have you had any problems with you plan in getting the health care you thought you needed?	1 0	Yes No	Survey
Payproblems	Have you had any problems in getting your plan to pay for a health service you thought they should pay for?	1 0	Yes No	Survey

Table 1: Variable Labels, Definitions and Sources

Label	Definition	Range	Value	Source
Pre-Approve ER	Does your plan require approval by your doctor before you can use a hospital emergency room?	1 0	Yes No	Survey
Pre-Approve Spec	Does your plan require approval by your doctor before you can visit a specialist?	1 0	Yes No	Survey
FTWork	Work status	1 0	Full Time Other	Survey
WorkSize	Would you say the company you work for has less than 20 employees, between 20 and 100 or does the company have more than 100 employees? >100 used as reference category.	1 2 3	< 20 20 - 100 >100 *	Survey
Health Status (HlthStat)	How would you rate your health, would you say it is?	1 0	Good, Fair, Poor Excellent, Very Good	Survey
Frequent Care (FreqCare)	Is there anyone in the home who is in poor health or only fair health who requires FREQUENT medical care?	1 0	Yes No	Survey
Age			20 - 81 Years	Survey

Table 1: Variable Labels, Definitions and Sources

Label	Definition	Range	Value	Source
Gender	Gender	1 0	Male Female	Survey
Educ	What was the last level of schooling you completed?	1 0	HS or Less More than HS	Survey
HHIncome	Household Income	1 2 3 4	< \$30,000 \$30 - \$75,000 > \$75,000 No Information	Survey
Married	Marital Status	1 0	Married Other	Survey
YrRes	How many years have you lived at your current residence?		0 - 78 Years	Survey
YrCty	How many years have you lived in your current county?		0 - 60 Years	Survey
BestHelp	Whose advice was most helpful in making your decision? Community includes family and friends, doctor and local agencies. Formal sources include health plan and employer.	1 2 3	Community * Self Formal Sources	Survey

Table 1: Variable Labels, Definitions and Sources

Label	Definition	Range	Value	Source
InfoSatis	When you made the decision to choose an (insurance) program, how satisfied were you with the information you had?	1 2 3	Satisfied * Neither Dissatisfied	Survey
Decider	Who in your home tends to make health insurance decisions?	1 2 3	Respondent * Joint Other	Survey
MCPen99	1999 County Managed Care Penetration Rate		1.3% - 74.5%	DOH
MrktChg	Measure of managed care penetration rate change 1996-1998. < 10% = stable, 10% + growth.	1 0	Stable Market Growth Market	DOH

DOH, Pennsylvania Department of Health; Survey, State-wide survey n = 1,200; * Denotes reference category.

Table 2: Descriptive Statistics for Survey Respondents

Pg. 1 of 3

	Respondents in FFS in 1998 Reference Category % or Mean (n=227)	Respondents in HMO in 1998 Reference Category or Mean (n=141)	p value	T or Z* statistic
PlanSatis	82.4%	80.1%	0.547	-0.603
DocLimits	34.4%	94.3%	0.000	-16.141
HospLimits	19.4%	57.4%	0.000	8.121
CovProblems	8.8%	13.5%	0.177	-1.353
PayProblems	23.8%	20.6%	0.474	0.717
Pre-approve ER	14.1%	82.3%	0.000	-17.546
Pre-approve Spec	43.6%	90.8%	0.000	-11.487
FTWork	67.8%	68.8%	0.849	-0.19
WorkSize*	66.1%	62.4%	0.519	-0.645

Table 2: Descriptive Statistics for Survey Respondents

Pg. 2 of 3

	Respondents in FFS in 1998 Reference Category % or Mean (n=227)	Respondents in HMO in 1998 Reference Category or Mean (n=141)	p value	T or Z* statistic
HlthStat	41.0%	27.0%	0.004	2.884
FreqCare	25.1%	11.3%	0.001	3.495
Age	44.78	42.25	0.039	2.067
Gender	30.0%	32.6%	0.592	-0.537
Educ	49.8%	41.8%	0.139	1.484
HHIncome*	18.9%	15.6%	0.466	-0.728
Married	73.6%	79.4%	0.203	-1.277
YrRes	12.8	11.9	0.469	0.725
YrCty	25.3	24.1	0.526	0.635
BestHelp	10.0%	15.7%	0.066	-1.852

Table 2: Descriptive Statistics for Survey Respondents

Pg. 3 of 3

	Respondents in FFS in 1998 Reference Category % or Mean (n=227)	Respondents in HMO in 1998 Reference Category or Mean (n=141)	p value	T or Z* statistic
InfoSatis*	92.1%	93.6%	0.588	-0.542
Decider*	62.1%	55.3%	0.339	-0.956
MCPen99	33.6%	35.6%	0.183	-1.333
MrktChg	70.9%	74.5%	0.027	2.216

Responses reported for plan type prior to modeled choice.

* Z statistic for equal proportions used for multichotomous categorical variables.

Table 3: Plan Choice Model Parameter estimates, SE, Odds Ratios and CI

	Model 1: Plan Choice = Economic Factors					Model 2: Plan Choice = Economic + Community Factors				
	Parameter Estimate	Standard Error	Odds Ratio	95.0% C.I.for OR		Parameter Estimate	Standard Error	Odds Ratio	95.0% C.I.for OR	
				Lower	Upper				Lower	Upper
Constant	2.532	2.372	12.580			1.606	5.645	4.984		
PlanSatis(1)	1.476	0.984	4.375	0.635	30.128	5.619	2.049	275.695	4.974	15282.502
PlanSatis(2)	1.431	1.410	4.183	0.264	66.349	3.044	2.229	20.997	0.266	1656.737
DocLimits	-4.131	0.773	0.016	0.004	0.073	-4.300	0.999	0.014	0.002	0.096
HospLimits	-3.098	0.734	0.045	0.011	0.190	-3.994	1.010	0.018	0.003	0.133
CovProblems	1.185	1.183	3.270	0.322	33.234	0.684	1.527	1.981	0.099	39.547
PayProblems	0.088	0.842	1.092	0.210	5.684	0.252	1.218	1.286	0.118	13.996
Pre-approve ER	-5.767	1.030	0.003	0.000	0.024	-7.176	1.361	0.001	0.000	0.011
Pre-approve Spec	-0.517	0.626	0.596	0.175	2.034	-0.161	0.809	0.851	0.174	4.154
FTWork	-1.284	1.035	0.277	0.036	2.104	-1.540	1.277	0.214	0.018	2.622
WorkSize(1)	-1.185	0.803	0.306	0.063	1.477	-0.636	0.958	0.530	0.081	3.460
WorkSize(2)	-0.490	0.790	0.613	0.130	2.880	-0.513	0.973	0.599	0.089	4.037
HlthStat	1.897	0.731	6.664	1.591	27.916	2.194	0.857	8.969	1.673	48.084
FreqCare	3.774	1.003	43.564	6.099	311.186	4.789	1.310	120.195	9.219	1567.132
Age	0.054	0.028	1.055	0.998	1.115	0.141	0.057	1.151	1.029	1.288
Gender	-0.463	1.187	0.630	0.061	6.452	-0.030	1.437	0.970	0.058	16.226
Educ	0.105	0.577	1.110	0.358	3.444	0.086	0.709	1.090	0.272	4.378
HHIncome(1)	-0.180	1.212	0.835	0.078	8.978	0.020	1.484	1.020	0.056	18.689
HHIncome(2)	0.276	1.112	1.318	0.149	11.651	1.400	1.447	4.055	0.238	69.134
HHIncome(3)	-1.417	1.295	0.242	0.019	3.068	-2.063	1.571	0.127	0.006	2.764
Married	-0.184	0.826	0.832	0.165	4.195	0.500	1.091	1.649	0.194	13.999

Table 3: Plan Choice Model Parameter estimates, SE, Odds Ratios and CI

	Model 1: Plan Choice = Economic Factors					Model 2: Plan Choice = Economic + Community Factors				
	Parameter Estimate	Standard Error	Odds Ratio	95.0% C.I. for OR		Parameter Estimate	Standard Error	Odds Ratio	95.0% C.I. for OR	
				Lower	Upper				Lower	Upper
YrRes						-0.042	0.093	0.959	0.799	1.151
YrCty						-0.032	0.064	0.969	0.854	1.099
BestHelp(1)						-0.921	1.513	0.398	0.021	7.723
BestHelp(2)						-1.936	1.044	0.144	0.019	1.116
InfoSatis(1)						-5.589	4.977	0.004	0.000	64.506
InfoSatis(2)						-0.125	4.807	0.882	0.000	10889.139
Decider(1)						0.912	1.390	2.490	0.163	37.974
Decider(2)						-1.110	1.378	0.329	0.022	4.910
MCPen99						-0.069	2.901	0.933	0.003	274.704
MrktChg						0.887	0.848	2.427	0.461	12.791
GOODNESS OF FIT COMPARISONS										
-2 Log Likelihood	99.824					78.559				
Chi-Square*	9.818	8	0.278			1.969	8	0.982		
Nagelkerke R-Sq	0.896					0.917				

* Hosmer and Lemeshow chi-square results.

Table 4: Change Model Odds Ratios, SE, P-values and CI

	Model 3: Change = Economic Factors					Model 4: Change = Economic + Community Factors				
	Odds Ratio	Standard Error	P Value	95.0% C.I.for OR Lower Upper		Odds Ratio	Standard Error	P Value	95.0% C.I.for OR Lower Upper	
Constant	0.009	1.800352	0.009	0.000	0.319	0.467	2.122	0.72	0.007	29.891
PlanSatis(1)	0.535	0.860717	0.468	0.099	2.892	0.715	1.176	0.775	0.071	7.156
PlanSatis(2)	0.611	0.5048248	0.329	0.227	1.644	0.366	0.851	0.237	0.071	1.940
DocLimits	5.712	0.7665983	0.023	1.271	25.663	5.406	0.827	0.041	1.069	27.324
HospLimits	1.431	0.4267297	0.401	0.620	3.303	1.642	0.476	0.298	0.646	4.171
CovProblems	0.465	0.7133738	0.283	0.115	1.882	0.489	0.725	0.324	0.118	2.024
PayProblems	2.055	0.4904825	0.142	0.786	5.375	2.049	0.530	0.176	0.725	5.787
Pre-approve ER	2.324	0.6586608	0.200	0.639	8.451	1.897	0.701	0.361	0.480	7.495
Pre-approve Spec	0.797	0.788714	0.774	0.170	3.739	0.788	0.855	0.78	0.147	4.209
FTWork	4.273	0.7464106	0.052	0.989	18.454	3.963	0.735	0.061	0.938	16.737
WorkSize(1)	1.891	0.6530051	0.329	0.526	6.800	2.549	0.533	0.079	0.897	7.241
WorkSize(2)	1.915	0.7321386	0.375	0.456	8.042	2.284	0.771	0.284	0.504	10.347
HlthStat	0.691	0.4231643	0.382	0.301	1.583	1.046	0.541	0.934	0.363	3.017
FreqCare	1.200	0.5056596	0.719	0.445	3.232	1.433	0.512	0.482	0.510	3.906
Age	1.001	0.0193347	0.969	0.964	1.039	0.982	0.031	0.56	0.925	1.043
Gender	1.933	0.8853154	0.457	0.341	10.957	1.403	0.899	0.706	0.241	8.167
Educ	1.677	0.4046334	0.201	0.759	3.707	1.781	0.461	0.211	0.721	4.397
HHIncome(1)	0.830	0.7057596	0.792	0.208	3.309	1.119	0.723	0.877	0.271	4.612
HHIncome(2)	0.607	0.5823589	0.392	0.194	1.901	0.601	0.670	0.447	0.162	2.233
HHIncome(3)	0.947	0.7079699	0.938	0.236	3.792	1.191	0.821	0.832	0.238	5.957
Married	0.469	0.5557154	0.173	0.158	1.393	0.128	0.797	0.01	0.001	0.609

Table 4: Change Model Odds Ratios, SE, P-values and CI

	Model 3: Change = Economic Factors					Model 4: Change = Economic + Community Factors				
	Odds Ratio	Standard Error	P Value	95.0% C.I.for OR Lower Upper		Odds Ratio	Standard Error	P Value	95.0% C.I.for OR Lower Upper	
YrRes						1.051	0.041	0.219	0.971	1.138
YrCty						0.982	0.028	0.515	0.930	1.037
BestHelp(1)						1.744	0.707	0.431	0.437	6.967
BestHelp(2)						1.427	0.679	0.6	0.377	5.396
InfoSatis(1)						0.737	1.406	0.828	0.047	11.590
InfoSatis(2)						1.714	1.260	0.669	0.145	20.224
Decider(1)						0.169	0.769	0.021	0.037	0.762
Decider(2)						1.184	0.580	0.77	0.380	3.689
MCPen99						0.013	1.856	0.02	0.000	0.511
MrktChg						0.429	0.632	0.18	0.124	1.480
GOODNESS OF FIT COMPARISONS										
-2 Log Likelihood	88.008					70.533				
LR Chi-square	50.7					79.99				
Pseudo R-Sq.	0.2236					0.3619				

CHAPTER FIVE

Conclusions and Policy Recommendations

The aim of this research was to investigate the approach used by consumers to select a health insurance plan, with an emphasis on the information seeking phase of the decision making process. That foundational question led to a set of community case studies designed to identify the information sources available to consumers as they move through the decision making process. The case studies answered several questions and raised several more in the process. Ultimately the key question that arose from the case studies was: What is the impact of community factors (such as the advice of family and friends, the recommendations of physicians and the availability of community resources, such as the area agency on aging and apprise program volunteers) on consumers' decision making process?

A comprehensive review of the literature found gaps in knowledge in this area. There are a handful of studies that examine the impact of family and friends on consumer health plan choices, however, the methodology employed in these studies tended to be qualitative and descriptive (e.g., focus groups, and survey data). No studies were found that empirically tested the effect of community context variables on health plan choice.

This study is the first to quantitatively test community effects. The finding that community factors do impact choice suggests that future models of health plan choice should incorporate community information sources whenever possible. Further, these findings suggest that the current policy approach, which focuses on providing more information in the marketplace and assumes that consumers can effectively access and

integrate this information to make informed decisions, does not adequately account for the influence of informal networks and trusted others who are not part of the traditional distribution channels employed by health plans, including Medicare and Medicaid, employers and consumer advocacy groups. The sections below briefly highlight the conclusions and policy recommendations that arise from each of the three papers that collectively comprise this dissertation.

Community Case Studies

One central finding from the community case studies is that, in general, consumers are not well informed about health insurance matters. This is consistent with the literature which shows that when choosing a health plan consumers lack functional knowledge and understanding of plan choices and find the selection process to be challenging and frustrating. This is especially true for vulnerable populations such as the elderly, the unemployed, the uninsured, and those with low literacy, both health literacy and general literacy. Perhaps as a result of being poorly informed, consumers tend to focus on one key factor, usually cost or information associated with an individual, often illness-specific concern when selecting a health plan. This is to be expected as cost is relatively straight-forward and readily incorporated into consumer decisions. However, secondary costs, such as co-pays, deductibles, coverage limits and other out-of-pocket expenses, influence health plan choice but are difficult for consumers to incorporate due to uncertainty about their future healthcare needs.

The most relevant finding is that consumers seek information from individuals with whom they have a personal relationship. Family and friends are the primary source; providers are another trusted source, especially among the elderly. Whether due to

confusion about plan structure and limitations or perceptions that health plans have an undue influence on care decisions, those with the greatest understanding of health plan specifics tend to be the least trusted sources of information. Consumers tend to trust those with the least specific knowledge about health plans (family and friends) most, and tend to trust those with the most specific knowledge about health plans (plan representatives) least. This finding has critical implications for consumers, key information sources and health plans alike as it may lead to poorly informed plan selections and subsequent dissatisfaction. Dissatisfaction in turn leads to higher disenrollment rates which create time and dollar costs for both consumers and plans.

Related to consumers' preference for information from sources they know well, the case studies revealed that consumers turn to local institutions for help in interpreting healthcare information. However, in the study communities, the organizational network was not well integrated. Competitive market pressures tended to isolate providers, and many of the community agencies interviewed have broadly defined missions beyond health information dissemination. These factors limit collaboration.

Consumers choose mail as the most preferred delivery source for information about changes in plan rules. Mail also tends to be the most-cost effective means for plans to deliver information to consumers. These factors work in opposition to the finding that face-to-face interaction is the most effective for communicating information. Mailed information places the burden of interpretation and assimilation completely on the consumer. For rural consumers this preference may be a function of a desire for independence and self-reliance or a function of the relative isolation faced by some rural

residence as a consequence of transportation issues, access to providers or other sources of information, or health literacy issues.

Rurality, and related interdependence, is an important factor in the social milieu within which knowledge acquisition takes place. There is a smaller managed care presence in rural areas and, consequently, generally fewer choices for consumers. As a consequence of the limited managed care penetration in rural areas and its shorter history there, general concepts about managed care have not found as significant a place in the local culture as they have in more urban areas. Consequently, an important source of general or public information about health insurance, family and friends, is less prominent. Additionally, providers have had less experience with managed care in rural areas and are less of a resource for information. Furthermore, because rural employers tend to be smaller, they are less likely to offer insurance benefits and to have a benefits officer on staff. This further limits the information sources in rural areas.

The purpose of the community case studies was to begin building knowledge about factors that influence consumer choice, specifically the impact of community context on the information seeking and processing step in decision-making. The observations derived from the case studies have helped to identify some of the ways in which consumers seek information, the information sources available to them, and the limitations of those resources, which may have important implications for public policy with respect to information dissemination efforts. Additionally, these findings support the assertion that community context is important for understanding how information is sought, delivered and interpreted by consumers. These findings indicate that community serves as an interpretive environment for consumers during the decision making process

The finding that consumers have the least trust for those who have the most knowledge has important implications for public policy.

Literature review

The literature on factors that influence consumer decision making, their information needs and the sources of information available to them provides a foundation upon which efforts to refine our understanding can build. There is a fundamental tension between the amount and type of information consumers say they want and what they can effectively comprehend. Several of the factors that consumers say would be helpful to them are complicated and difficult to present and interpret. Additional research is needed to determine the optimal amount and type of comparative plan information to present to consumers. Effectively communicating the information mandated by the Balanced Budget Act (BBA) and the Medicare Improvement and Modernization Act (MMA) to Medicare beneficiaries without overwhelming them continues to be a significant challenge.

In addition, the development of national, regional and disease-specific benchmarks has added complexity without improving comprehension. More research is needed on how best to present such benchmarks to consumers in meaningful and easily understood ways. The literature also makes clear that some consumers have more difficulty than others in managing the complexity of information in the decision making process. They may prefer to count on the assistance of their doctor or may rely on family members, friends, employers or others to make the plan choice for them. Further research is needed on how to utilize these personal information resources as effective distribution channels for disseminating information to support decisions made through these

intermediaries. It is also important to note that many of these information agents face the same challenges as the consumers they are trying to assist. It is at least as important to develop effective decision-support tools for these intermediaries as for consumers, if improvements in health care decision-making are to be achieved.

Finally, an emerging literature demonstrates that community effects have the potential to influence consumer choice. Additional research on social context effects in larger community settings would extend our knowledge and begin to establish empirical evidence for use by policy makers in designing effective dissemination approaches to improve consumer decision making.

Empirical analysis

The primary goal of the empirical research undertaken here was to test the impact of community context on health plan choice. This is the first empirical test of these factors. The results clearly show that community context does influence consumers' health plan decisions and suggest that future efforts to model health plan choice would be improved by the addition of community effects. This analysis begins to address the gap in the literature on our understanding of community effects and provides a basis for designing future studies. A fuller exploration for example, of how much influence each information resource has on a consumer's decision would help focus information dissemination efforts on more influential sources. Further, the ability to identify and rank information sources by their level of influence would enable targeted marketing and information designs to improve the capacity of information sources to be provide consistent and accurate information to consumers.

The finding that limitations on provider choice influences plan choice affirms earlier research findings. Indeed the market has already responded to this concern in the years since this survey was fielded. The development and growth of managed care models, such as Preferred Provider Organization (PPO) models that allow broader access to physicians though coupled with differing co-pay levels, has alleviated the restricted choice concern while maintaining the plans capacity to manage quality and cost through pre-approved provider panels.

The finding that health status and chronic health needs influence plan choice has also been well documented in the literature. While there have been mixed results in studies of adverse selection in health plan choice, this research suggests that particularly for rural residents better information about provider participation may alleviate some of this concern. If there are benefits to managed care models, for example, better rates of preventative services and management of chronic conditions then removing this perceived barrier to enrollment may improve individual and community health.

One finding from the change models is also worth noting. Consumers in counties with low managed care penetration rates are considerably less likely to change plans than those in counties with higher rates of managed care penetration. If public plans are interested in using managed care models to control costs and improve screening and other prevention efforts among their beneficiaries, then they will need to make a concerted effort in less mature managed care markets to develop a critical mass of managed care enrollees before elective enrollment is likely to occur. For example, public programs may need to involuntarily enroll beneficiaries in managed care plans to establish the infrastructure and public comfort with this plan type in order to seed the market. If this

approach is taken, careful consideration should be given to the factors identified in these models that positively influence choice, for example, focusing information about the positive association of primary care access and prevention efforts in managed care models to those in poorer health and/or who have chronic health care needs.

Finally, what this research makes very clear is that communities serve as interpretive environments for their residents. Information campaigns have historically focused on individuals, either through their employment status or tied to their eligibility for public programs. This research suggests that community level information campaigns, such as those undertaken during flu season, may serve to raise the general level of awareness among community residents. This foundational knowledge enables those who serve as information resources to engage in more detailed discussions about individual needs and person specific questions rather than spending time educating consumers about basic differences between FFS and managed care plans. Social marketing efforts have proven effective in reducing smoking among target populations and increasing general awareness about the negative side-effects of drug use. Policy makers should consider using social marketing tools to improve consumers' basic knowledge about health plans, especially as the complexity of health plan options increases within a bounded set of parameters, such as cost-sharing levels and relative restrictions on providers.

Policy Recommendations

Arguably, the single most effective approach to help consumers navigate the health insurance market is to simplify the interface between the system and the consumer. Given the importance of health care and health care insurance in the lives of all citizens, health insurance still is a consumer good. However, it is difficult to identify other

consumer items that require so much in-depth knowledge for effective purchase decisions and related utilization. Based on the research findings noted above, the following policy recommendations are offered.

Policy Recommendations at the Consumer Level

- Educational efforts on “public knowledge” are needed to introduce consumers to basic distinctions between managed care plans and traditional indemnity plans. Such distinctions should include the plan’s responsibility for care of its members and the consumers’ responsibility for understanding plan rules and processes. It also should include basic concepts such as primary care provider, specialist care, emergency care, and in-plan and out-of-plan rules and regulations. Such basic foundational knowledge is lacking among significant numbers of the public, and this conceptual background is fundamental in the understanding and internalization of more specific knowledge. These efforts must be undertaken on a long-term basis, however, since internalization of these types of public knowledge lack acute relevancy and are not immediately internalized. Social marketing approaches have proven effective for increasing knowledge and changing behavior over time and should be employed in this effort whenever possible.
- More care needs to be given to published materials with respect to reading level and clarity of the information. The state office that licenses and regulates insurance carriers should develop clear guidelines for the use of images in lieu of text, the use of statistics to convey information and reading level for all insurance materials designed to inform consumers. Further, these agencies should employ compliance officers who monitor consumer information, printed and web-based to ensure compliance.

Policy Recommendations Focused on Health Care Plans and Insurers

- Policies and regulations that improve communication between providers and the insurer concerning approved plan procedures will contribute significantly to limiting the amount of information that the consumer must master.
- Plans should actively promote the presence of friends and family members of enrollees at information sessions and consider allowing enrollees to designate others to receive copies of plan communications. This would need to be balanced with privacy concerns, but in general, providing marketing communications to those who serve as information resources to consumers enrolled under their plans should improve member satisfaction with the plan.

Policy Recommendations Focused on the Community

- States should consider partnering with Universities and other entities that have established community networks to develop the information capacity of local communities. In Pennsylvania for example, a more formal relationship between the county-based Area Agency on Aging and Penn State University county-based extension agents would improve information referrals between these groups and the consumers they both serve. A secondary effect would be a general increase in community knowledge about health care.
- Any effort that will bring public knowledge about health care to the forefront in rural communities is worthy of consideration. In rural areas, cultural knowledge concerning managed care is relatively undeveloped. Any effort that will introduce fundamental concepts in public forums will be useful in incorporating this

knowledge into the community culture.

Contribution

The collective impact of this research addresses a gap in the literature regarding the information seeking approach used by consumers in increasingly complex healthcare environments. As policy and market changes increase demands on consumers to effectively negotiate the health plan decision making process the supply of effective information sources and dissemination efforts must keep pace. Because the implications of failure for personal and community health and individual and collective wealth are so great, the onus of creating a truly informed consumer is shared by consumers, providers and policy makers. The most appropriate phrase to capture this onus speaks to the scope of the vision and the breadth of the challenge, E Pluribus Unum; Out of many, one. Each consumer is unique in their needs and in their individually constructed information network. The challenge for health plans, consumer advocates and policy-makers is to develop and implement effective communication efforts and disseminate them through the distribution channels that consumers use as information resources for health care related decisions.

APPENDICES

Appendix A: Case Study Key Informant Interview Protocol

Appendix B: CRP99-9 Statewide Survey of Rural Consumers

How to Choose and How to Use:

Interview protocol to be administered to key informants in the three case study sites

[**Note to Reviewers:** We do not expect that all of these questions or probes will be asked. We anticipate, instead, that respondents will answer more than one question or probe topic in a response to a single question. Also, questions A, B, and C (in bold) will be asked if a respondent either agrees to give us only five minutes (e.g., a busy physician or nurse) or C, or B and C, might be asked if time is running short during and ongoing interview.]

Introduction: ... As described in our letter, we wish to learn what patients and other people know or don't know about choosing and using their health insurance plan or managed care plan.

1. What is your position?

Probe: In what ways do you come in contact with patients/clients (people) that give you some insights into the adequacy of their information about how to choose a health plan or how to use their health plan in gaining care?

A: **In what areas of health insurance, HMOs, or other managed care plans are people most poorly informed about how to choose their health plan or how to use their health plan in gain care?**

2. How well informed are patients/clients (people in this community/your company) about their health insurance benefits and/or managed care plans?

Probe: From the perspective of your job (or your organization) tell us a little bit about the typical patient or client (person) you deal with and where their information, or lack of information, on their health plan is important. [note the words in parentheses may be substituted in interviews with persons who do not work with patients or clients, per se.]

Probe: Are patients/clients (people in the community/your company) any more or less informed about such issues today than ten years ago?

3. What percentage of patients/clients (people in this community/your company) would you say are seriously lacking in information about how to use (how to choose) their health plan?

Probe: Are there any special problems or conditions among people in your community that may account for any unusually low patient (consumer) knowledge of using or choosing health benefits?

Probe: Are there any specific strategies that might be helpful in overcoming such special problems or conditions?

4. Are those with managed care plans any more or less **informed** than those with traditional health insurance?

Probe: Are those with managed care any more or less **confused** than those with traditional health insurance?

5. Are those with Medicare or Medicaid likely to be any more or less informed than those with other health insurance?

6. On what particular topics or issues do patients/clients (people in the community) appear to be particularly uninformed about their health insurance benefits and/or managed care?

Probe: How about the adequacy of information on topics such as primary care, speciality care, hospital care, ancillary care, pharmacy, out of area care?

7. Does their lack of information cause problems with the care they receive? How so?

Probe: Does it cause problems for the patient?

Probe: Does it cause problems for the organization?

B. Where do you think patient/clients (people in the community) get information on how choose and how to use their health plan?

Probe: What organizations in the community, if any, do you think provide such information to people?

8. What types of efforts are made within your organization to inform consumers about how to use (how to choose) managed care and/or other health plans?

9. Are there any individuals, groups, or organizations that patients/clients (people in the community) rely upon for information about how to use (how to choose) their health insurance benefits and/or managed care?

10. Do you refer patients (people in the community) to any individuals, groups, or organizations in the community to gain more information about how to use (how to choose) their health insurance benefits and/or managed care? To whom do you refer?

11. Is there either a formal or informal network or group here in the community which meets to share patient/client/consumer-related information?

Probe: Does a representative from your facility/organization participate in this group or network?

12. Where do you go or whom do you rely upon to receive up-to-date, accurate information on patients' (the general population's) health plans and insurance programs?

Probe: Is there any particular insurance plan (MCO) that does a better job than others at informing consumers on (either).

Probe: What methods do they use?

Probe: (Employer) How would you rate the quality of information you receive from health insurers/health plans about health plans/packages they offer (costs, benefits offered)?

Probe: Are MCOs/HMOs better or worse than traditional insurers in explaining their costs/coverage?

C. What suggestions do you have for improving the quality and timeliness of information to consumers on health plans?

Probe: Who should do more?

Probe: What methods are preferable for which consumer groups?

13. Do you have any ideas/suggestions for improving means and methods for **your organization** to get information to patients/consumers on using (choosing) their health plan?
14. Do you have any ideas/suggestions for improving means and methods that **other organizations** in the community might employ to get information to patients/consumers on using (choosing) their health plan?
15. Do you think there will be any consequences for patients, if consumer information on using (choosing) health plans is not improved?
16. Do you think there will be any consequences for your organization, if consumer information on using (choosing) health plans is not improved?
17. Is there any particular insurance plan (MCO) that does a better job than others at informing consumers on (either).

Probe: What methods do they use?

18. We have covered a lot of ground. Is there anything else you would like to add?

Thank you very much for your time.

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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Prefixes to variables

A = Medicaid

AR= Medicaid regular

AH= Medicaid HMO

M=Medicare

MR=Medicare regular

MH=Medicare HMO

ER= Insured - employer - regular

EH= Insured -employer - HMO

SR= Insured - SELF - regular

SH= Insured -SELF - HMO

U = Uninsured

C = CHIP program questions

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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Hello, my name is _____ and I am calling for Penn State University where we are conducting research about health care issues facing people in Pennsylvania.

I would like to speak with the adult in the household who is most knowledgeable about the family's health care and health insurance. Are you that person?

Your answers to this survey are confidential and your participation is voluntary. Your help IS important in understanding the concerns of people in Pennsylvania. It will take about 10 minutes of your time. You may choose to end this conversation at any time. Or, you may simply choose not to answer specific questions. If you have any questions regarding this project at any time, you can call Mike Schwartz at (814) 863-8214. I appreciate your willingness to participate. Is this an okay time to continue?

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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PART ONE

<p>1. WORK: Are you currently working full-time, part-time, going to school, keeping house or what? <input type="checkbox"/> Full-time <input type="checkbox"/> Part-time <input type="checkbox"/> Going to school <input type="checkbox"/> Keeping house <input type="checkbox"/> Unemployed <input type="checkbox"/> Disabled <input type="checkbox"/> Retired</p>	WORK	WORK	WORK	WORK	WORK
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<p>1. ALLTYPE: Which of the following types of health insurance is your PRIMARY insurance? <input type="checkbox"/> Medicare <input type="checkbox"/> Health Insurance through employer <input type="checkbox"/> Some other type of health insurance <input type="checkbox"/> Medical Assistance <input type="checkbox"/> or, no health insurance of any kind</p>	ATYPE	MTYPE	ETYPE	STYPE	UTYPE
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(NEXT THREE QUESTIONS ONLY FOR UNINSURED)

<p>CHAN Did you have an opportunity to choose insurance plan if you wanted to? YES___ NO___</p>	N/A	N/A	N/A	N/A	UPLAN
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<p>2. CHO Did you have a choice among HMO plans as well as traditional (insurance) plans?</p>	N/A	N/A	N/A	N/A	UCHO
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Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
3. RES What is the MAIN reason you have no health insurance at this time? No insurance available at work Chose not to participate in insurance plan at work Self employed Not employed Healthy, don't need it	N/A	N/A	N/A	N/A	URES
1. PLAN1 Do you have the <input type="checkbox"/> regular _____ or (GO TO 2) <input type="checkbox"/> a _____ HMO such as: GO to 5) [FOR MEDICAL ASSISTANCE ONLY-NAMES OF PLANS OFFERED IN COUNTY OF RESPONDENT]	APLAN1	MPLAN1	EPLAN1	SPLAN1	N/A
2. CHAN2 Did you have an opportunity to choose an _____ HMO instead of the traditional _____ program if you wanted to? <input type="checkbox"/> YES <input type="checkbox"/> NO (GO to 4B)	ARCHAN	MRCHAN	ERCHAN	SRCHAN	N/A
2A. WHY2A Why did you choose to stay in the regular _____ program rather than sign up with a _____ HMO?_____	ARWHY2A	MRWHY2A	ERWHY2A	SRWHY2A	N/A
2A1 CHO2A1 Did you have a choice among (insurance) plans?	ARCHO2	MRCHO2	ERCHO2	SRCHO2	N/A
2B. COM2B Did you make your decision based on being comfortable with the insurance you had? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ARCOM2B	MRCOM2B	ERCOM2B	SRCOM2B	N/A

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
2C.	SER2C	Were differences in the services offered important in making your decision? ___ YES ___ NO ___ D.K.	ARSER2C	MRSER2C	ERSER2C	SRSER2C	N/A
2C1.	SERC1	Please give me examples of differences in the services that were important to you.	ARSER2C1	MRSER2C1	ERSER2C1	SRSER2C1	N/A
2D.	DOC2D	Was being able to continue seeing the doctor of your choice important in making your decision? ___ YES ___ NO ___ D.K.	ARDOC2D	MRDOC2D	ERDOC2D	SRDOC2D	N/A
2E.	PAP2E	Was having less paper work important in making your decision? ___ YES ___ NO ___ D.K.	ARPAP2E	MRPAP2E	ERPAP2E	SRPAP2E	N/A
2F.	EXP2F	Did you have any prior experience with an HMO before you chose your current (insurance) plan? ___ YES ___ NO ___ D.K.	AREXP2F	MREXP2F	EREXP2F	SREXP2F	N/A
(2F NOT ASKED OR MEDICAL ASSISTANCE; SEE 5F)							
2G.	COS2G	Was reducing your out-of-pocket costs for health care important in making your decision? ___ YES ___ NO ___ D.K.	ARCOS2G	MRCOS2G	ERCOS2G	SRCOS2G	N/A
3A.	WHO3A	Was advice or information from others important in making your decision? ___ YES ___ NO ___ D.K.	ARWHO3A	MRWHO3A	ERWHO3A	SRWHO3A	UWHO3A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(3A1 ASKED ONLY IF 3A EQ ‘YES’)

3A1	WHONAME	Whose advice was important?	ARWHO3A NAME	MRWHO3A NAME	ERWHO3A NAME	SRWHO3A NAME	UWHO3A NAME
3B.	CAS3B	Was advice from your case worker helpful in making your decision? ___ YES ___ NO ___ D.K.	ARCAS3B	N/A	N/A	N/A	N/A
3C.	DOC3C	Was information from doctor’s office, or health clinic helpful in making your decision? ___ YES ___ NO ___ D.K.	ARDOC3C	MRDOC3C	ERDOC3C	SRDOC3C	UDOC3C
3D.	FAM3D	Was talking with family or friends helpful in making your decision? ___ YES ___ NO ___ D.K.	ARFAM3D	MRFAM3D	ERFAM3D	SRFAM3D	UFAM3D
3E.	NEW3E	Was information from newspapers, radio, or TV helpful in making your decision? [FOR MEDICARE ONLY-AARP] ___ YES ___ NO ___ D.K.	ARNEW3E	MRNEW3E	ERNEW3E	SRNEW3E	UNEW3E

(3G IS ONLY ASKED IF WORK EQ ‘YES’)

3G.	EMP3G	Was information from your employer helpful in making your decision?	AREMP3G	MREMP3G	EREMP3G	SREMP3G	UEMP3G
3H.	REG3H	Was information or advertising from the (insurance) plan helpful in making your decision?	ARREG3H	MRREG3H	ERREG3H	SRREG3H	UREG3H
3I.	ARP3I	Was information from A.A.R.P. helpful in making your decision?	N/A	MRARP3I	N/A	N/A	N/A

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
3J.	IMP3J	Whose information or advice was the MOST helpful?	ARIMP3J	MRIMP3J	ERIMP3J	ARIMP3J	N/A
4A.	SAT4A	When you made the decision to choose an (insurance) program, how satisfied were you with the information you had? Would you say you were... Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	ARSAT4A	MRSAT4A	ERSAT4A	SRSAT4A	N/A
4B.	SAT4B	How satisfied are you with your (insurance) program? Would you say you were... Very Satisfied Satisfied Mixed Opinion Dissatisfied Very Dissatisfied	ARSAT4B	MRSAT4B	ERSAT4B	SRSAT4B	N/A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
[QUESTIONS 4C- 4F ARE ASKED FOR REG. MEDICARE]	N/A	MRSUP4C	N/A	N/A	N/A
4C. SUP4C Do you have a Medicare Supplemental Program, such as MEDIGAP Insurance or PACE? ___ YES ___ NO ___ D.K.					
(QUESTIONS 4Cn, 4D, 4E, 4F ASKED ONLY IF 4C EQ 'YES')					
4Cn SUP4Cn Which one?	N/A	MRSUP4Cn	N/A	N/A	N/A
4D SUP4D Why did you choose the (fill in Cn) program?	N/A	MRSUP4D	N/A	N/A	N/A
4E SAT4E When you made your decision about (fill in Cn), how satisfied were you with the information you had? Would you say you were... Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	N/A	MRSAT4E	N/A	N/A	N/A
4F SAT4F How satisfied are you with (fill in Cn) program? Would you say you were... Very Satisfied Satisfied Mixed Opinion Dissatisfied Very Dissatisfied	N/A	MRSAT4F	N/A	N/A	N/A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(HMO OPTION OF SURVEY)

5. CHAN	Did you have an opportunity to choose the traditional (insurance) program instead of an HMO if you wanted to?	AHCHAN	MHCHAN	EHCHAN	SHCHAN	N/A
5A. WHY5A	Why did you choose an HMO instead of the regular (Insurance) program?	AHWHY5A	MHWHY5A	EHWHY5A	SHWHY5A	N/A
CHO5	Did you have a choice among HMO plans? ___ YES ___ NO ___ D.K.	AHCHO5	MHCHO5	EHCHO5	SHCHO5	N/A
5B. COM5B	Did you make your decision based on being comfortable with the insurance you had? ___ YES ___ NO ___ D.K.	AHCOM5B	MHCOM5B	EHCOM5B	SHCOM5B	N/A
5C. SER5C	Were differences in the services offered important in making your decision? ___ YES ___ NO ___ D.K.	AHSER5C	MHSER5C	EHSER5C	SHSER5C	N/A
5C1 SER5C1	Please give me any examples of differences in services important to you.	AHSER5C1	MHSER5C1	EHSER5C1	SHSER5C1	N/A
5D. DOC5D	Was being able to continue seeing the doctor of your choice important in making your decision? ___ YES ___ NO ___ D.K.	AHDOC5D	MHDOC5D	EHDOC5D	SHDOC5D	N/A
5E. PAP5E	Was having less paper work important in making your decision? ___ YES ___ NO ___ D.K.	AHPAP5E	MHPAP5E	EHPAP5E	SHPAP5E	N/A

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
5F.	EXP5F	Did you have prior experience with an HMO before you chose your current HMO? ___YES ___ NO ___ D.K.	AHEXP5F	MHEXP5F	EHEXP5F	SHEXP5F	N/A
5G	COS5G	Was reducing your out-of-pocket expenses important in making your decision? ___YES ___NO	AHCOS5G	MHCOS5G	EHCOS5G	SHCOS5G	N/A
6A.	WHO6A	Was advice or information from others important in making your decision? ___YES ___NO	AHWHO6A	MHWHO6A	EHWHO6A	SHWHO6A	N/A
6A1.	WHONAME	Whose advice was important?	AHWHO6A NAME	MHWHO6A NAME	EHWHO6A NAME	SHWHO6A NAME	N/A
6B.	CAS6B	Was advice from your case worker helpful in making your decision? ___YES ___ NO ___ D.K.	AHCAS6B	N/A	N/A	N/A	N/A
6C.	DOC6C	Was information from doctor's office, or health clinic helpful in making your decision? ___YES ___ NO ___ D.K.	AHDOC6C	MHDOC6C	EHDOC6C	SHDOC6C	N/A
6D.	FAM6D	Was talking with family or friends helpful in making your decision? ___YES ___ NO ___ D.K.	AHFAM6D	MHFAM6D	EHFAM6D	SHFAM6D	N/A
6E.	NEW6E	Was information from newspapers, radio, or TV helpful in making your decision? ___YES ___ NO ___ D.K.	AHNEW6E	MHNEW6E	EHNEW6E	SHNEW6E	N/A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(6G ASKED ONLY IF WORK EQ. 'YES')

6G. EMP6G	Was information from your employer helpful in making your decision? ___YES ___NO ___D.K.	AHEMP6G	MHEMP6G	EHEMP6G	SHEMP6G	N/A
6H. HMO6H	Was information or advertising from the HMO helpful in this decision? ___YES ___NO ___D.K.	AHHMO6H	MHHMO6H	EHHMO6H	SHHMO6H	N/A

(6I ASKED ONLY OF MEDICARE TYPE)

6I. ARP6I	Was information from A.A.R.P. helpful in making your decision?	N/A	MHARP6I	N/A	N/A	N/A
6J. IMP6J	Whose information or advice was the MOST helpful?	AHIMP6J	MHIMP6J	EHIMP6J	SHIMP6J	N/A
7A. SAT7A	When you made your decision to chose an (HMO), how satisfied were you with the information you had? Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	AHSAT7A	MHSAT7A	EHSAT7A	SHSAT7A	N/A
7B. SAT7B	How satisfied are you with your HMO? Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	AHSAT7B	MHSAT7B	EHSAT7B	SHSAT7B	N/A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(QUESTION 8A IS ASKED AS OPEN-ENDED QUESTION)

8A. TEL8A	What is the BEST way for (TYPE) to tell you about changes in (TYPE) services or rules?	ATEL8A	MTEL8A	EHTEL8A	STEL8A	UTEL8A
8B. TEL8B	[Probe with]Are there any other ways that you think would work well such as Information from: newspaper, radio, TV; doctor's office, health center; or from some other source?	ATEL8B	MTEL8B	EHTEL8B	STEL8B	N/A
9A. WHO9A	Who would you ask FIRST if you have a question about (TYPE) or the way it works?	AWHO9A	MWHO9A	EWHO9A	SWHO9A	UWHO9A
9B. CAS9B	Do you ever ask your case worker questions about Medical Assistance? ___ YES ___ NO ___ D.K.	ACAS9B	N/A	N/A	N/A	N/A
9C. DOC9C	Do you ever ask questions about (TYPE) at your doctors office, or health clinic? ___ YES ___ NO ___ D.K.	ADOC9C	MDOC9C	EDOC9C	SDOC9C	UDOC9C
9D. FAM9D	Do you ever ask your family or friends questions about (TYPE)? ___ YES ___ NO ___ D.K.	AFAM9D	MFAM9D	EFAM9D	SFAM9D	UFAM9D

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(QUESTION 9E ASKED ONLY IF WORK EQ. 'YES')

9E.	EMP9E	Do you ever ask your employer questions about (TYPE)?	AEMP9E	MEMP9E	EEMP9E	SEMP9E	UEMP9E
9H.	HMO9H	Do you ever ask your HMO customer service representative? ___ YES ___ NO ___ D.K.	AHHMO9H	MHHMO9H	EHHMO9H	SHHMO9H	N/A
9J.	IMP9J	Whose information or advice was the MOST helpful?	AIMP9J	MIMP9J	EIMP9J	SIMP9J	UIMP9J

PART TWO –Personal Health & Health Care Problems

Now I would like to ask you a few questions about your health and where you get health care.

10A.	HEAL10A	Is there anyone in the home who is in poor health or only fair health who requires FREQUENT medical care? ___ YES ___ NO	AHEAL10A	MHEAL10A	EHEAL10A	SHEAL10A	UHEAL10A
10B.	HEAL10B	How would you rate YOUR PERSONAL health, would you say it is... (1) excellent (2) very good (3) good (4) fair, or (5) poor	AHEAL10B	MHEAL10B	EHEAL10B	SHEAL10B	UHEAL10B
11A.	SICK11A	Where do you go when you are sick or not feeling well?	ASICK11A	MSICK11A	ESICK11A	SSICK11A	USICK11A

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
11B.	DOSAT11B.	How satisfied are you with the care you receive when you go there? Would you say you are... Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	ADOSAT11	MDOSAT11	EDOSAT11	SDOSAT11	UDOSAT11
11C.	WHY11C	[IF DISSATISFIED OR VERY DISSATISFIED] Why is that?	AWHY11C	MWHY11C	EWHY11C	SWHY11C	UWHY11C
11D	ER11D	Do you sometimes use the hospital emergency room when you are sick or not feeling well? ___ YES ___ NO ___ D.K.	AER11D	MER11D	EER11D	SER11D	UER11D
11E	ERSAT11E	How satisfied are you with the care you receive when you go there? Would you say you are... Very Satisfied Satisfied Neither Satisfied nor Dissatisfied Dissatisfied Very Dissatisfied	AERSAT11E	MERSAT11E	EERSAT11E	SERSAT11E	UERSAT11E
11E.	WHY11F	[IF DISSATISFIED OR VERY DISSATISFIED] Why is that?	AWHY11F	MWHY11F	EWHY11F	SWHY11F	UWHY11F

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
11G. CHG11G Have you changed doctors or the place you generally go to for care within the last three years? ___ YES ___ NO ___ D.K.	ACHG11G	MCHG11G	ECHG11G	SCHG11G	UCHG11G
(QUESTION 11H ASKED ONLY IF 11G EQ. 'YES')					
11H. CHWHY11H Why?	ACHWHY11H	MCHWHY11H	ECHWHY11H	SCHWHY11H	UCHWHY11H
12A. DOC12A Does your (PLAN) limit which doctors you can see? ___ YES ___ NO ___ D.K.	ADOC12A	MDOC12A	EDOC12A	SDOC12A	N/A
(QUESTION 12B ASKED ONLY IF 12A EQ. 'YES')					
12B. DOC12B Has that created problems for you at any time? ___ YES ___ NO ___ D.K.	ADOC12B	MDOC12B	EDOC12B	SDOC12B	N/A
13A. HOS13A Does your (PLAN) limit which hospitals you can use? ___ YES ___ NO ___ D.K.	AHOS13A	MHOS13A	EHOS13A	SHOS13A	N/A
(QUESTION 13B ASKED ONLY IF 13A EQ. 'YES')					
13B. HOS13B Has that created problems for you at any time? ___ YES ___ NO ___ D.K.	AHOS13B	MHOS13B	EHOS13B	SHOS13B	N/A
14A. ER14A Does your (PLAN) require approval by your doctor before you can use a hospital emergency room? ___ YES ___ NO ___ D.K.	AER14A	MER14A	EHER14A	SER14A	N/A

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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QUESTION 14B ASKED ONLY IF 14A EQ. 'YES')

14B.	ER14B	Has that created problems for you at any time? ___ YES ___ NO ___ D.K.	AER14B	MER14B	EH14B	SER14B	N/A
15A.	SPC15A	Does your (PLAN) require approval by your doctor before you can visit a specialist? ___ YES ___ NO ___ D.K.	AHSPC15A	MHSP15A	EHSPC15A	SHSPC15A	N/A

(QUESTION 15B ASKED ONLY IF 15A EQ. 'YES')

15B.	SPC15B	Has that created problems for you at any time? ___ YES ___ NO ___ D.K.	AHSPC15B	MHSPC15B	EHSPC15B	SHSPC15B	N/A
16A.	PAY16A	Have you had any problems in getting your (PLAN) to pay for a health service you thought they should pay for? ___ YES ___ NO ___ D.K.	AHPAY16A	MHPAY16A	EHPAY16A	SHPAY16A	N/A
16B.	SER16B	Have you had problems with your (PLAN) in getting the health care you thought you needed? ___ YES ___ NO ___ D.K.	ASER16B	MSER16B	EPAY16B	SPAY16B	UPAY16B
16C.	HOW16C	What problems have you had?	AHOW16C	MHOW16C	EHOW16C	SHOW16C	UHOW16C
16D.	BAD16D	Do you have any health condition that you think is worse because of ANY problems you have had with your (PLAN)? ___ YES ___ NO ___ D.K.	ABAD16D	MBAD16D	EBAD16D	SBAD16D	UBAD16D

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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PART THREE

2.	CHILD17	Are there one or more children under the age of 20 living in your home? ___YES ___NO	ACHILD17	MCHILD17	ECHILD17	SCHILD17	UCHILD17
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**(QUESTIONS 18-24 ASKED ONLY IF 17 EQ. 'YES')
(IF QUESTION 17 EQ. 'NO' GOTO PART FOUR)**

18	CNOW18	Is any child in your home currently insured under the Children's Health Insurance Program (CHIP) of Pennsylvania?	ACNOW18	MCNOW18	ECNOW18	SCNOW18	UCNOW18
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[CHIP is a health insurance program for children of working families who make more income than would allow them to get Medical Assistance. It is sponsored by the government and private insurance companies.]

___YES (GO TO 21A)
___NO

19.	CELIG19	Do you think your child (or children) might be eligible for health insurance under that program? ___YES ___NO	ACELIG19	MCELIG19	ECELIG19	SCELIG19	UCELIG19
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Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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20. CHERD20	Before this phone call, had you heard about the Children's Health Insurance Program (CHIP) in Pennsylvania?	ACHERD20	MCHERD20	ECHERD20	SCHERD20	UCHERD20
<p>[CHIP is a health insurance program for children of working families who make more income than would allow them to get Medical Assistance. It is for children who do not otherwise have health insurance. It is sponsored by the government and private insurance companies.]</p>						
<p><input type="checkbox"/> YES (GO TO 21A) <input type="checkbox"/> NO (GO TO 24A)</p>						
21A. CWHR20A	Where did you FIRST hear about CHIP?	ACWHR21A	MCWHR21A	ECWHR21A	SCWHR21A	UCWHR21A
21B. CCAS21B	Did you ever hear about CHIP from your case worker? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ACCAS21B	N/A	N/A	N/A	N/A
21C. COC21C	Did you ever hear about CHIP from the doctors office, or health clinic? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ACOC21C	MCOC21C	ECOC21C	SCOC21C	UCOC21C
21D. CFAM21D	Did you ever hear about CHIP from your family or friends? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ACFAM21D	MCFAM21D	ECFAM21D	SCFAM21D	UCFAM21D
21E. CNEW21E	Did you ever hear about CHIP from newspapers, radio, or TV? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ACNEW21E	MCNEW21E	ECNEW21E	SCNEW21E	UCNEW21E
21F. CSCH21F	Did you ever hear about CHIP from your local school? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> D.K.	ACSCH21F	MCSCH21F	ECSCH21F	SCSCH21F	UCSCH21F

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
21G.	CEMP21G	Did you ever hear about CHIP from your employer? ___ YES ___ NO ___ D.K.	ACEMP21G	MCEMP21G	ECEMP21G	SCEMP21G	UCEMP21G
21J.	IMP21J	Whose information or advice about CHIP was the MOST helpful?	ACIMP21J	MCIMP21J	EIMP21J	SIMP21J	UIMP21J
22A.	CSAT22A	When you made your decision to enroll the child (children) in CHIP, how satisfied were you with the information given to you? Would you say you were... Very Satisfied Satisfied Mixed Opinion Dissatisfied Very Dissatisfied	ACSAT22A	MCSAT22A	ECSAT22A	SCSAT22A	UCSAT22A
22B.	CSAT22B	How satisfied are you with the CHIP program? Would you say you were... Very Satisfied Satisfied Mixed Opinion Dissatisfied Very Dissatisfied	ACSAT22B	MCSAT22B	ECSAT22B	SCSAT22B	UCSAT22B
[GO TO 24A]							
(QUESTION 23A ASKED ONLY IF 18 EQ. 'NO')							
23A.	CEVR23A	Was your child (were your children) ever enrolled in CHIP? ___ YES ___ NO (GO TO 24A)	ACEVR23A	MCEVR23A	ECEVR23A	SCEVR23A	UCEVR23A
23B.	CWHY23B	Why are they not currently enrolled?	ACWHY23B	MCWHY23B	ECWHY23B	SCWHY23B	UCWHY23B

Question			Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
24A.	CTEL24A	What is the BEST way for the State of Pennsylvania to reach you with information on the CHIP program?	ACTEL24A	MCTEL24A	ECTEL24A	SCTEL24A	UCTEL24A
24B.	CTEL24B	[Probe with] “Are there any other ways that you think would work well such as Information from... newspaper, radio, TV; doctor’s office, health center; or from some other source?”	ACTEL24B	MCTEL24B	ECTEL24B	SCTEL24B	UCTEL24B

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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**PART FOUR
DEMOGRAPHIC QUESTIONS:**

Who in your home tends to make health insurance decisions?

- "I do" (Respondent)
- my Wife
- my Husband
- Husband & wife together
- my Son/Daughter (Adult)

Are you Male or Female (imputed by interviewer)

- Male
- Female

What is your CURRENT marital status?

- Single, Never Married
- Married
- Separated
- Divorced
- Widow, Widower

(NEXT QUESTION ONLY FOR MARRIED RESPONDENTS)

Does your (husband/wife) have (TYPE)?

- YES
- NO

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(NEXT TWO QUESTIONS ASKED ONLY IF (HUSBAND/WIFE) HAS DIFFERENT INSURANCE)

STYPE Which of the following types of health insurance is your SPOUSE'S PRIMARY insurance...?

- Medicare
- Health Insurance through Employer
- Some other type of health insurance
- Medical Assistance (M.A.)
- or, no health insurance of any kind

SpIn Is it a regular insurance plan or an HMO plan?

AGE What was your AGE on your last birthday?

EDUC What was the last grade level of schooling you have completed?

- Non high school graduate
- High school graduate
- Some college
- Two-year or tech degree
- Four year college degree
- Postgraduate degree

RACE Which of the following categories best describes your RACIAL background?

- White
- Black
- Asian or Pacific Islander
- American Indian or Alaskan Native

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(ASKED ONLY IF WORK EQ. 'YES')

Remp Where you are employed? What is the name of the company? _____

Esiz Would you say the company you work for has less than 20 employees, between 20 and 100 or does the company have more than 100 employees?
 Less than 20 employees
 Between 20 and 100 employees
 More than 100 employees

(NEXT QUESTION ONLY FOR MARRIED RESPONDENTS)

SWRK Is your spouse currently working full-time, part-time, going to school, keeping house or what?
 Full-time
 Part-time
 Going to school
 Keeping house
 Unemployeed
 Disabled
 Retired

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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(NEXT QUESTIONS ASKED IF SPOUSE IS WORKING)

- Semp Where is your SPOUSE employed? What is the name of the company? _____
- Ssiz Would you say the company your SPOUSE works for has less than 20 employees, between 20 and 100 employees or more than 100 employees?
 ___ Less than 20 employees
 ___ Between 20 and 100 employees
 ___ More than 100 employees
- RESD How many years have you lived at your current residence?
- RESC How many years have you lived in the same COUNTY?
- INC1 And, just for statistical purposes, we need to know if your total family income is above or below 30,000 per year?
 ___ Above 30,000 per year(**GOTO INCA**)
 ___ Below 30,000 per year(**GOTO INCB**)
- INCA Is that 30-40, 40-50, 50-75 or over \$75,000 per year?
- INCB Is that under \$5,000, \$5-10,000, \$10-15,000 or \$15-30,000?
- NumA How many people 18 years of age or older CURRENTLY are living in your home? Please

Question	Medicaid	Medicare	Employer-Insured	Self-Insured	Uninsured
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include yourself.

NumP How many different telephone numbers that is separate telephone numbers can be used to call into your home?

NumF How many of these (fill NumP) telephone lines are used ONLY for computers or fax numbers?

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EDUCATION

Doctor of Philosophy, 2008. Department of Health Policy and Administration. The Pennsylvania State University.
Dissertation Title: The influence of community context on health plan decisions: A multi-method assessment of community effects

Master of Public Administration, 1990. California State University, Hayward.

Bachelor of Science, 1983. Health Planning and Administration. The Pennsylvania State University.

PROFESSIONAL EXPERIENCE

Clinical Liaison Officer: December 2005 to present.

The Penn State Milton S. Hershey Medical Center. Hershey, PA and University Park, PA

Director of Special Projects and Executive Assistant to the Dean: January 2002 to December 2005.

College of Health and Human Development. The Pennsylvania State University, University Park, PA

Director of Research Collaboration: December 2000 to January 2002.

Institute for Quantitative Healthcare Analysis. Aetna/US Quality Algorithms, Blue Bell, PA

Instructor/Outreach and Curriculum Development Specialist: August 1997 to December 2000.

Department of Health Policy and Administration. The Pennsylvania State University, University Park, PA

Director, Marketing and Client Support: May 1994 to January 1997.

Health Knowledge Systems Division – HCMAS. Hospital Council of Western Pennsylvania, Cranberry, PA

Doctoral Candidate/Research Assistant: August 1991 to May 1994.

Department of Health Policy and Administration. The Pennsylvania State University, University Park, PA

Research Associate: January 1982 to December 1999

Communication, Evaluation, Planning, Inc. Collegeville, PA

Marketing Information Manager/Product Line Marketing Manager: September 1989 to July 1991.

Eden Hospital Medical Center. Castro Valley, CA

Public Relations/Marketing Assistant: April 1986 to September 1989.

Eden Hospital Medical Center. Castro Valley, CA

Quality Assurance Coordinator: October 1984 to September 1985.

Miami Children's Hospital. Miami, FL

Administrative Resident: August 1983 to July 1984.

Suburban General Hospital. Norristown, PA