Community assessment of the barriers to primary health care for children and families

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Community assessment of the barriers to primary health care for children and families

by

Karen Glischinski Shirer

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

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CHAPTER 1. INTRODUCTION

Health is an important resource for the growth, development, and well-being of children. Unfortunately, health and social statistics indicate that a growing number of children and their families in the United States are being denied access to health care. When compared to children living in the 1960s and 1970s, children today are more likely to live in poverty, lack health-care coverage, be born to mothers without adequate prenatal care, become ill or disabled from communicable diseases, and suffer abuse and neglect (American Academy of Pediatrics [AAP], 1993; Natale, 1992). The United States' infant mortality and adolescent pregnancy rates continue to surpass the rates of most other developed countries (Rosenbaum, Layton, & Liu, 1991).

Achieving access to preventive health-care services is a primary goal of the national Healthy People 2000 initiative sponsored by the U.S. Public Health Service (U.S. Department of Health and Human Services [DHHS], 1994). This national initiative is designed to improve significantly the health of all United States citizens. Specific objectives and indicators have been established to address problems of health-care accessibility. However, moderate objectives set by the surgeon general in 1979 related to infant mortality, low birthweight, prenatal care, and childhood immunizations were not met in 1990 (Rosenbaum et al., 1991). This failure further attests to the need for action to improve access to health-care services for pregnant women and children.

Primary health care consists of the basic services associated with preventing and treating diseases and promoting healthy lifestyles and normal development (Iowa Department of Public Health [IDPH], 1994). A complex set of issues determine the degree to which families are able to access these basic services in the community in which they live. A useful framework for evaluating primary health-care
systems and designing systems that are accessible to all children and families is the ecological perspective postulated by Bronfenbrenner (1986). This perspective recognizes that a family does not live in isolation but continually interacts with its environment and that a family's capacity to meet its needs is dependent upon the environment in which it lives (Vaughn, 1994).

Bronfenbrenner's model provides a theoretical basis for identifying factors that make it more difficult for some families to access primary health care. The family's interaction with the environment is conceptualized as a series of concentric circles with the child at the center (Bronfenbrenner, 1986; Bubolz & Sontag, 1993). The child is encircled by the microsystem, which includes his or her family, neighborhood, school, and friends. The next circle represents the exosystem, or the community, in which a child and family lives and includes the primary health-care system and other subsystems. The outermost circle is the macrosystem or the broader culture in which a child, family, and community operate. It includes the public and private policies and programs that either support or undermine a family's capacity to make health-care and other decisions. The interface between two or more of these levels, such as, the family's interaction with the health-care system, is called a mesosystem.

Studying the mesosystem and the exosystem level of a child's environment helps to determine the factors that inhibit access to primary health care. Families create a mesosystem as they interface with the primary health-care system in their communities (Bronfenbrenner, Moen & Garbarino, 1987; Doherty, 1993; Doherty & Campbell, 1988). Although children receive services directly from health-care providers, parents are the "gatekeepers" to health-care services for their children (Doherty, 1993; NCFR, 1993). Parents decide if and when children receive health care and encounter barriers when trying to access these services. A family's ability
to access health care also is related strongly to the community in which they live, or the exosystem. The kinds, organization, and delivery of basic health-care services in the community make up the exosystem.

Barriers in the mesosystem and exosystem determine the degree to which children and their families are able to obtain needed services. Barriers to accessibility stem from financial, structural, and personal factors (Millman, 1993). Financial barriers usually arise from a family's inability to pay for services due to lack of or inadequate health insurance coverage. They also stem from providers' reluctance to provide health-care services to low-income families. Structural barriers relate to issues of availability of health-care services in the community and the degree to which services are family-centered. Personal barriers keep families from obtaining health-care services or from following through on recommended care once they receive it. They include cultural and language barriers, patient attitudes toward seeking care, and a family's socioeconomic status.

These three types of barriers also interact with each other in a complex manner. Studies have shown that families with low incomes and little education often lack the resources to deal with childhood health problems (personal barriers), are more likely to be uninsured (financial barrier), and are more likely to live in communities with inadequate primary health-care services (structural barrier) (Garbarino, Galambos, Plantz, & Kostelny, 1992; Rosenbaum et al., 1991).

A review of empirical studies on barriers related to primary health care, prenatal care, well-child care and screening services, immunizations, and family-focused health education identified a variety of financial, structural, and personal barriers. Inadequate, or lack of, health insurance coverage, cost of program materials, and unstable funding sources for health-care agencies were the primary financial barriers (Dutton, 1982; Fire, 1990; Lawhorne, Zweig & Tinker, 1990; Spoth
Redmond, 1993a). Unavailability of services in the community, transportation problems, difficulty recruiting and retaining staff, insufficient community resources, insensitive and inappropriate practices for meeting family needs, community attitudes toward seeking help, inconvenient program features, and lack of interagency coordination contributed to structural barriers (Bedics, 1994; Dutton, 1982; Gibbons, 1990; Lamsam, 1993; Lawhorne et al., 1990; Lugo, 1993; Mack, 1989; McDiarmid, 1988; Orenstein, 1990; Patrick, Stein, Porta, & Ricketts, 1988; Shelton, 1987; Spoth & Redmond, 1993a; Weinert & Long, 1987). Personal barriers included lack of education and knowledge, family poverty and low income, personal attitudes towards seeking help and participating in education, personal lifestyle, mothers' labor force participation, and stressful events (Bedics, 1994; Dowswell & Hewison, 1993; Fire, 1990; Lamsam, 1993; National Commission on Infant Mortality, 1991; Spoth & Redmond, 1993b; Spoth & Redmond, in press).

Improving access or reducing the barriers to primary health-care systems for children and their families is an important focus of the health-promotion field (Downie, Fyfe & Tannahill, 1990, p. 2). Health promotion consists of interventions to improve a population's health status and prevent ill-health through health education, prevention, and protection activities (Downie et al., 1990, p. 2). Traditional approaches to health promotion focused on individual or life-style behaviors linked to chronic diseases. When Bronfenbrenner's ecological perspective is applied to health promotion interventions at the community-level, the focus shifts to environmental and social factors that impact health status (McLeroy, Bibeau, Steckler, & Glanz, 1988). Community interventions at the mesosystem and exosystem levels are focused on: mediating structures in the community like the work-site or school; community coalitions made up of representatives from the primary health-care system; and/or the community power structures.
Community assessment in the initial phase of developing health promotion efforts identifies problems related to accessing primary health-care services, creates community ownership for problems, and empowers a community coalition to act (Braddy, Orenstein, Brownstein, & Cook, 1992; Kreuter, 1992; Steckler, Orville, Eng, & Dawson, 1992). Community assessment is a process of comprehensively identifying and defining problems, opportunities, and resources among a target population and in the community as a whole (Haglund, Weisbrod, & Bracht, 1990). Its intent is to provide decision makers with information and feedback in the early stages of action planning. Two common approaches to collecting assessment information are: (1) compiling existing data about health and social indicators; and (2) conducting a consumer survey with the target population for the health promotion effort (Liss, 1993, pp. 13-26).

Purpose of the Study

The purpose of this study was to develop and conduct a community assessment that provided information about the primary health-care needs of families with children in one Iowa county. Prior to conducting the community assessment, approaches to community assessment were examined and a framework was developed to guide the assessment process. This particular assessment compiled existing data about health and social indicators and conducted a consumer survey to gather pertinent information and provide inferences about the type, scope, and degree of problems experienced by families when accessing basic health-care services. The information and findings were to be used by a local coalition to identify, prioritize, and select areas of the primary health-care system that needed improvement. The coalition would then develop and implement a plan for improving those services in the county so that families could better meet their
children's health-care needs. Conclusions were made about approaches to conducting future community assessments for local coalitions seeking to improve the well-being of children and families.

Objectives

1. Examine issues and concerns related to accessing primary health care and identify approaches to assessing these problems at the community level.
2. Conduct a community assessment in one Iowa county to determine problems associated with accessing primary health care for children and families.
3. Develop recommendations for conducting future community assessments by local coalitions interested in improving the well-being of children and families.

Definitions of Terms

**Community assessment.** The process of defining and analyzing needs, opportunities, and resources in a community when initiating a health promotion program (Haglund et al., 1990). Two common methods used in community assessment are compiling existing data about health and social indicators and a consumer survey.

**Primary health care.** Basic health-care services designed to prevent and treat diseases and to promote healthy lifestyles and normal development (IDPH, 1994). They are accessible to all families in the community at a cost that the community can afford (Kar, 1990).

**Family-centered.** An approach to health-care policy and practice that recognizes the central role of the family. Family-centered care is based on the assumption that the most effective way to meet people's health-care needs "is to
view them holistically, within the context of their family, neighborhood, and community" (NCFR, 1993).

Community-based. "A system of health service delivery that is shaped by the unique characteristics, culture, and health resources present in a community." Children receive most of their health care in the community in which they live. The health-care system includes procedures for providing services to children when they do not exist in the community (IDPH, 1994).

Access. "The timely use of personal health services to achieve the best possible health outcomes" (Millman, 1993, p. 32). Access represents a broad set of issues that focus on the degree to which parents are able to obtain basic health-care services for their children from the community-based system (Millman, 1993, p. 17).

Barriers. Obstacles that prevent parents from accessing health-care services for their children. Barriers can be structural, financial, and/or personal in nature (Millman, 1993, pp. 33-40).

Health promotion. Organized efforts to improve a population's positive health and prevent ill-health, through health education, prevention, and health protection (Downie et al., 1990, p. 2). Use of and access to health care is an important focus of health promotion. Health promotion also has been defined as the "process of enabling people to increase control over and improve their health" (Green & Raeburn, 1990).

Coalition. "A relatively small, noninstitutional aggregation of people linked together for common goals or purposes" (Green & Raeburn, 1990). Coalitions go beyond information sharing to joint planning and decision-making. They are believed to be the most effective group for health promotion at the community level.
Significance of the Study

Societal trends in the 1980s and 1990s indicate that an increasing number of children in the United States are foregoing needed preventive health-care services. Their parents lack health-care insurance, are poor, experience time constraints due to work and family responsibilities, or live in communities that lack these services. Even when these basic health-care services are available in the community and families have health-care coverage, access may be impeded by systems that are insensitive to family and cultural needs. When children fail to receive basic health-care services designed to promote good health, prevent disease, and treat illness and disease, their future well-being and development are threatened.

Individual efforts on the part of parents are not enough to overcome the constraints and complex problems related to their inability to access primary health care. Effective community interventions that are driven by coalitions are needed to improve access to and use of community-based health-care services. But to be effective these coalitions need reliable and accurate information upon which to base their decision-making.

This study provides a framework and methodology by which local coalitions can approach community assessment. Citizens, service professionals, clergy, and educators in many communities are working together in coalitions to solve complex issues related to child and family well-being. These coalition members contribute their experiences and knowledge about the issues but many lack the expertise to conduct effective community assessments. They recognize the value of assessment in effective planning but need guidance in how to conduct the process. This study outlines a rationale, specific methods, and recommendations for carrying out community assessments by local coalitions.
Improving accessibility to primary health care ensures the positive development and well-being of children, which relates to the mission of Family and Consumer Sciences to enhance the well-being of individuals in their family, consumer, professional, and community roles. This study generated critical data about parental perceptions related to the existing health-care system, problems that they encountered when accessing services, and their other concerns related to meeting their children’s health-care needs. When the local coalition obtained this kind of information, they were empowered to plan community actions aimed at reducing the barriers to primary health care and promoting positive health among all the community’s children.
CHAPTER 2. REVIEW OF LITERATURE

Access to primary health care for children and their families represents a broad set of issues that relate to the degree that parents are able to obtain basic and preventive health-care services for their children from a community-based system. The barriers to primary health care for children can be reduced by changing the health-care system with which families interact to make it more family-centered and community-based.

The framework selected for this study was the ecological perspective postulated by Bronfenbrenner (1986; Bubolz & Sontag, 1993) to describe the interaction between families and external systems in their environment. The first section of this chapter will describe Bronfenbrenner's ecological perspective. In the second section, access to primary health care for children and families and empirical studies on the barriers to primary health care will be examined. The third section will describe the role of community approaches in reducing the barriers to primary health care. In the final section, the importance of community assessment in developing community interventions will be explored and principles to guide the assessment process will be identified.

An Ecological Perspective for Primary Health Care

The human ecology theory is a general theory used to study a wide variety of problems related to families and their relationships with external systems at different levels in their environment (Bubolz & Sontag, 1993). Basic concepts of system theory are an integral part of the human ecology theory when applied to family studies. Families are viewed as human or living systems, or "ecosystems," comprised of humans who interact with multiple environments. The family system fulfills basic functions related to physical sustenance, economic maintenance, and
nurture for its members, itself as a group, and societal well-being. The characteristics of families and the environment, the organization of environmental subsystems, and the interactions within and between families and subsystems are interdependent and investigated as a system (Bubolz & Sontag, 1993). When change occurs in one sector, it often means that adjustments or responses will eventually occur in other parts of the system.

The family ecology theory is particularly useful for studying families because it is not based on any particular family type or structure like the family development or family life-span theories. Research models based on the family ecology theory analyze the influence of external systems on the family and on parents' ability to positively influence children's development (Bronfenbrenner, 1986). The family ecology theory best addresses questions related to: how social systems most effectively provide services and resources to families; how families and family professionals contribute to the change process; and what should be done to ensure equity in access to resources and opportunities (Bubolz & Sontag, 1993).

A conceptual framework found in the family ecology theory is the ecological perspective proposed by Urie Bronfenbrenner (1986; Bubolz & Sontag, 1993). This framework recognizes that an individual's health status is a product of his or her continuous interaction and interdependence with his or her family, community, cultural, and physical environments (Green & Raeburn, 1990). Bronfenbrenner's model views behavior and development as being influenced by, and affecting, multiple levels in the environment (Bronfenbrenner, 1986; McLeroy et al., 1988; Sontag & Bubolz, 1993). The levels are portrayed as a series of concentric circles, with the child at the center. The next circle surrounding the child represents the microsystem where the child experiences and creates day-to-day reality in the family, school, and neighborhood. The most important component of a child's
microsystem is his or her family, which has the greatest influence on child
development or well-being.

The microsystem is encircled by the exosystem level consisting of situations
and circumstances that directly influence children's development but in which
children play no direct role (Bronfenbrenner, 1986). The exosystem encompasses
the community in which a family lives, which is made up of subsystems that are
designed to serve the needs of its population (Bronfenbrenner et al., 1987). The
community provides a context for family decision-making, including those decisions
about health behaviors and health care. These subsystems include the parents'
workplace and other community power centers, e.g., local government and the
health-care system, that make decisions indirectly affecting the child's daily life and
future well-being.

The outermost circle represents the macrosystem which is most removed
from the child but still indirectly influences development and well-being. The
macrosystem level consists of the culture (the media, government, economic
conditions, values) in which the other levels operate. Family studies of the
macrosystem focus on the impact of public and private policies on the ability of
families to fulfill their functions (Bronfenbrenner & Weiss, 1983). An example of a
macrosystem effect comes from the health care reform debate at the national level.
The reforms, or lack of, will have future implications for the ability of families to
access primary health-care services for their children (NCFR, 1993).

The linkage between two or more of these system levels is termed the
mesosystem (Bronfenbrenner, 1986). Examples of mesosystems are the interface
between the family and the school or the family and the health-care system.
Garbarino (1992) indicates that the stronger, more positive, and more diverse the
links between levels, the more the resulting mesosystem will have a positive
influence on child development and well-being. For example, when health-care systems are made more family-centered and community-based, these linkages are believed to be strengthened (NCFR, 1993). The mesosystem is depicted on the model as a pie slice across all the levels to represent the interconnections among the different levels.

Risks and opportunities for development are present at all levels of the ecological system—the micro-, meso-, exo-, and macrosystem (Garbarino & Abramowitz, 1992). But a closer examination of the exosystem (i.e., the community and its primary health-care system) and the mesosystem (i.e., the interface between families and the primary health-care system) can help determine the nature of and extent of system barriers families experience when accessing primary health-care services for their children. Connections between the individual and environment which might otherwise go unnoticed may be revealed. Studying the exosystem level and the mesosystem also helps to look beyond the immediate and obvious factors within families that impact health-care accessibility to external factors that may have a more significant influence on accessibility (Garbarino & Abramowitz, 1992).

Risks to children’s development in the exosystem and mesosystem generally occur: 1) when parents experience a decreased capacity to productively participate in the child's microsystem, e.g., work demands long and inflexible hours; and 2) when people in institutional roles make decisions that positively or negatively impact the child's microsystem, e.g., family physician discontinues immunizations for children because of cost and liability (Garbarino & Abramowitz, 1992). Exosystems support development when they make parenting a more manageable job for parents and threaten development when they make it more difficult. Exosystem opportunity occurs when powerful forces outside the family and in the community actively work for family well-being (Garbarino & Abramowitz, 1992).
An important concept when studying the mesosystem and exosystem is "community effect" (Garbarino et al., 1992). When specific characteristics of individuals and families can be connected to influences arising from the community as a whole or from one or more of its subsystems, they are defined as community effects (Bronfenbrenner et al., 1983). Efforts to improve community support systems, like health care, to produce positive effects for family well-being are often driven by decisions made by community policy makers and by changes in the roles and nature of community institutions.

Previous mesosystem and exosystem studies have focused on the interface between the family and the hospital, day care, the child's or parent's peer group, the school, the parent's work, and the community (Bronfenbrenner, 1986; Bubolz & Sontag, 1993). The ecological perspective also has been used to study the individual, family, social, and cultural influences in child abuse and substance abuse and to identify potential interventions for addressing Type A behavior (McLeroy et al., 1988).

The ecological perspective will be used as the theoretical perspective to study access to primary health care for children and their families and to investigate community interventions to improve accessibility. In the next section, the nature and scope of barriers that inhibit access to basic health-care services for children and their families will be examined and empirical studies on the barriers to health care will be outlined.

**Access to Primary Health-Care Services**

Primary health care has been described by Kar (1990) as a new paradigm for the health-care system that focuses on health promotion and disease prevention as well as the treatment and rehabilitation of the sick and injured. An array of services
are incorporated into primary health care and delivered in a coordinated fashion in the community. Primary health care places a great emphasis on extending basic health-care services to all people and developing health interventions with communities rather than individuals (Kar, 1990). Kar (1990, p. 301) observed:

Access to basic and preventive health care by the population at large has greater impact on national health status than does the availability of sophisticated, specialized, and expensive medical care to a few patients after they become seriously ill. Sophisticated medical technology does not help those who do not have access to or cannot afford these services.

Families interface with the primary health-care system to meet their children's basic health-care needs (Bronfenbrenner et al., 1983; Doherty, 1993; Doherty & Campbell, 1988). This interface creates a mesosystem. Families play a key role in accessing basic health-care services because they serve as the "gatekeeper" to the health-care system for family members (Doherty, 1993; NCFR, 1993). Results from studies show that for every seven illness events in a family only one of those events is attended to by a health-care practitioner (Doherty & Campbell, 1988). When children become ill or injured, parents usually assess symptoms, try home remedies, decide if professional help is needed, get input from relatives or friends, and obtain health-care services (Doherty, 1993). Children receive health-care services directly, but their parents decide if and when they receive services and encounter the problems when trying to obtain these services.

Consensus is growing that the most accessible primary health-care system is one that is family-centered and family-friendly (NCFR, 1993). Family-centered care views family members as full partners in planning, providing, and assessing health care and the family system as the focus of support, services, and treatment (Doherty & Campbell, 1988; NCFR, 1993). Family-friendly care means that health care is provided to families in a manner that is convenient and respectful of their needs and
preferences (NCFR, 1993). Three principles underlie care that is family-centered and family-friendly:

1. **Family support.** The organization and delivery of health-care services strengthens the positive role of families in promoting healthy life-styles, preventing disease, and treating illness.

2. **Family partnership and empowerment.** Family members are treated as consultants and partners with health-care providers. Health-care providers empower family members to carry out their responsibilities by providing clear and unbiased information, full participation in decision making, and access to resources needed to carry out their responsibilities. Health-care systems are designed to help, not hinder, parents' ability to coordinate their diverse relationships with the system and with other work and family responsibilities.

3. **Family diversity.** Health-care systems acknowledge and respect the diversity of family structures, resources, religions, races, and cultural backgrounds.

**Conceptual framework of barriers to health care**

To develop family-centered health care in the community, issues related to health-care accessibility need to be addressed (NCFR, 1993). The term "access" encompasses a large group of issues that focus on the degree to which people are able to acquire needed services from the health-care system (Millman, 1993, p. 4). Access is defined by Millman (1993, p. 32) as "the timely use of personal health services to achieve the best possible health outcomes." But families sometimes encounter financial, personal, and structural barriers that prohibit parents from
effectively and efficiently accessing primary health care for their children (Bruner, Bell, Brindis, Chang, & Scarbrough, 1993; Millman, 1993, p. 32).

Financial barriers. Financial barriers hinder a family's capacity to pay for care or discourage health-care providers from providing services to families with low incomes. Very few families can pay for health care without private insurance or government benefit programs. Under-insurance in terms of the depth and adequacy of coverage is also problematic; insurance may cover catastrophic or acute care but not preventive or primary care (NCFR, 1993). Some plans require copayments or large deductibles, may not cover pre-existing conditions, and/or fail to cover certain categories of benefits (Millman, 1993, p. 37; NCFR, 1993). When children reach 18 and are no longer in school, most are not included in their parents' plan nor do they have stable enough employment that provides insurance coverage. Expanding insurance coverage to cover all family members and pre-existing conditions reduces financial barriers (NCFR, 1993).

Family income influences the rate of health-care utilization and the level of family health status. When compared to higher income groups, people with lower incomes experience significantly higher levels of morbidity and shorter life expectancies (McEwan, 1994). Unfortunately, families with the lowest incomes have both the greatest need for health care and the least ability to purchase health-care services.

Financial barriers also relate to publicly funded programs like Medicaid that often cover the costs of health care for pregnant women and children but not for fathers or other family caregivers (NCFR, 1993). Some health-care practitioners are reluctant to provide services to patients on Medicaid because of inadequate reimbursement policies and complicated claims processing. Families also
experience stress from the burdensome and time-consuming task of completing insurance claim forms. Simplifying the reimbursement process for both public and private insurance reduces this aspect of financial barriers.

Universal health insurance is an important step toward health-care accessibility but nonfinancial barriers of a structural or personal nature still inhibit some families from obtaining needed care (Klerman, 1992). Numerous researchers caution that access to primary health care services should not be equated with having health insurance (Doherty, 1993; Klerman, 1992; Millman, 1993, p. 17; NCFR, 1993).

Personal barriers. Personal barriers arise related to cultural and language issues, acceptability of services to persons receiving them, patient attitudes toward seeking care, and an individual's socioeconomic status (Bronfenbrenner et al., 1983; Millman, 1993, pp. 34-43). Personal barriers constrain people from seeking health-care services, or once they receive care, from following through on recommended treatments. The health beliefs, attitudes, and behaviors of parents and other caregivers shape and support children's health behaviors and the care children receive from parents when they are sick (Anderson & Feldman, 1993; Doherty, 1993).

Structural barriers. Structural barriers are obstacles related to the number, kind, density, and organization of primary health-care services in a community. They include issues related to the availability of services in the community, the organization of services, and the degree to which services are family centered (Millman, 1993, p. 39). The health-care system needs to be organized in such a way
that people neither over-utilize or under-utilize health care but receive care that is appropriate for their condition.

Many working families encounter structural barriers when clinics and other services are not offered at convenient times for working parents and when employers do not provide leave for taking children to health-care appointments during working hours (NCFR, 1993). As a result, families may go without preventive or basic services and then may seek emergency care when the situation becomes serious. Parents also may use emergency rooms inappropriately for treating mild illness or obtaining well-child care because emergency rooms offer health-care services on a 24-hour basis (NCFR, 1993). Furthermore, many parents report being treated as obstacles or as unimportant by health-care providers when obtaining services for their children (NCFR, 1993).

Structural barriers are reduced or eliminated when the health-care system takes a more family-oriented approach to primary health care (Baird, 1993). Local demonstration projects have experimented with alternative delivery models, such as mobile health units, home visiting programs, providing evening or weekend hours, and all-night outpatient clinics for shift workers (NCFR, 1993). Parents also need education about their health-care role in preventing, evaluating, and managing their children's health care. Child and family well-being are enhanced when parents know how to foster normal development, encourage healthy lifestyle behaviors, identify symptoms, and provide accurate information to care providers (Anderson & Feldman, 1993).

Interaction among barriers. Financial, structural, and personal barriers often are interrelated and interact with each other in a complex manner (Millman, 1993, p. 39). For example, a health-care system that is not based on a family-
centered philosophy (structural barrier) may discourage minorities from seeking health-care services that do not meet their unique needs (personal barrier). Addressing nonfinancial barriers to health-care accessibility may include having more neighborhood providers, available child care, assistance with transportation, and education about the importance of lifestyle behaviors and early intervention (Anderson & Feldman, 1993). However, making these services available will not necessarily mean that families will obtain needed services (Bruner et al., 1993; Millman, 1993, p. 39). For example, in many rural areas where there are shortages of specialized health-care practitioners locally, residents are willing to travel a considerable distance to a specialist. Conversely, many people living in urban areas with a high physician-to-people ratios and public transportation systems experience great difficulties obtaining services.

Family and community barriers to primary health care

Barriers to primary health-care services arise from within the family, from the community-based primary health-care system, and from the interaction between the two systems. Potential variables have been studied related to the primary health-care system, prenatal care services, well-child and screening activities, immunizations, and family-focused community health education. Many of the studies address one or more of the three types of barriers—financial, personal, and structural—that parents may encounter and give direction on reducing these barriers.

Primary health-care system. Access to and availability of health-care and other support services is contingent upon where a family lives and a family's socioeconomic status (Bronfenbrenner et al., 1983; Garbarino et al., 1992; Rosenbaum et al., 1991). If primary health-care services and other support services
are not available in the community, parents may experience transportation problems or actually forego using needed preventive and intervention services. Accessing these services is especially problematic for women in poverty, single parents, and parents with special-needs children. Families with low-incomes were found to spend 50% more time traveling to and waiting to see health care practitioners (Bronfenbrenner et al., 1983).

Community attitudes and beliefs regarding the use of public assistance programs also can act as a barrier to accessing services. The prevailing attitude in a community may view families who receive benefits as lacking motivation and self-reliance. This attitude has been found to be especially prevalent in rural communities where independence and self-reliance are valued highly (Jensen & Eggebeen, 1994). Agencies that serve families usually operate from a deficit model in which families must prove that they are inadequate in order to receive assistance. Parents with low incomes often lack the patience, tolerance, and skill to deal with bureaucracies and are unable to overcome the barriers created by the way in which services are organized and delivered (Bronfenbrenner et al., 1983).

Oftentimes a lack of knowledge about services prevents families from accessing them. A variety of strategies have been tested related to educating families including service directories, telephone hotlines, and home-visiting programs (Bronfenbrenner et al., 1983; Zimmerman, 1993, p. 6). However, study results of these strategies show that the most common ways families learn about services is informally from other family members and friends (Bronfenbrenner et al., 1983).

Weinert and Long (1987) studied the perceptions of rural families regarding health, health needs, and health services. Rural residents defined health as the ability to work and, when sick, used self-reliance and self-help to cope with their own or a family member's illnesses. They also were found to put off health care until
activities required for economic survival were addressed. The most reported source of social support were their families as opposed to formal agencies and professional care providers.

Health-care programs also were found to use self-defeating practices in reaching rural residents, such as, offering special clinics and programs during peak times in the farming schedule (Weinert & Long, 1987). Community health interventions needed to use the "work" issue to motivate participation. A campaign on hypertension should emphasize the potential debilitating effects of strokes on one's ability to work rather than the opportunity for a longer, more comfortable life. Weinert and Long (1987) also recommended that the formal health-care system provide education, support, and relief to informal helping systems, i.e., family members and neighbors, who often provide the majority of health care for sick and disabled persons.

In a study of families with school-age children, working mothers were more likely to report using emergency medical appointments or being "fitted in" at their health-care providers than non-working mothers when children became ill (Dowswell & Hewison, 1993). Working mothers were less likely to obtain health care for sick children but their children were no more likely to be sent back to school earlier after illness episodes than children of non-working mothers. Child care for sick children was provided by unpaid, informal arrangements with relatives or by the mother or father staying home from work. These arrangements frequently were found to be complicated and vulnerable to breakdown.

Inequitable access to health-care services often is assumed to lead to inequitable health status. To test this assumption, a model of the relationships between poverty, health-care needs, service use, and health outcomes was used to analyze cross-sectional data for 7,823 adults from 36 rural communities (Patrick et
al., 1988). Improved access and use were found to be helpful for low-income populations but the data clearly indicated that coordinated health and social interventions were needed to reduce inequalities in health status.

Children with special needs related to chronic illness or disabilities present special problems for parents when accessing health care, especially in rural areas. In 1989 a survey of over 400 rural health-care programs serving chronically-ill, handicapped, or high-risk children was conducted (Fire, 1990). The most frequently-reported problems affecting service delivery included: transportation problems for both clients and providers; difficulties recruiting, retaining, and training staff; insufficient community-based resources and inadequate community referral systems; need for case management, interagency service coordination, and family/child followup services; lack of access to specialized services; and need for coordinated state, regional, and local systems. Health-care programs reported experiencing limited capabilities due to a lack of stable funding, escalating health-care costs, and growing demands for documentation. Families also were reluctant to use services, experienced poor communication with providers, encountered language and cultural barriers, and were often poor and illiterate. Many rural areas lacked skilled physicians who were willing to accept children with special needs or low income. There appeared to be a lack of public awareness about how to identify and refer children with special needs in most communities.

A review of studies about health-care services for children with special needs determined key elements of a family-centered care for these children (Shelton, 1987). A family-centered care approach: recognizes the family as constant in children's lives while service systems and providers change; facilitates parent and professional collaboration at all levels of health care; provides unbiased information to parents on an ongoing basis; implements comprehensive policies and programs
that emotionally and financially support families; recognizes family strengths and diversity and respects different coping methods; accommodates the developmental needs of children of all ages into health-care systems; provides opportunities for parents to receive support from each other; and designs a health-care system that is flexible, accessible, and responsive to family needs.

A study investigating factors affecting children's health in Washington, DC and in a national sample found that the most significant barriers to utilizing health-care services were inappropriate practices for low-income parents, high provider charges, and the absence of Medicaid benefits (Dutton, 1982). Poor children were found to experience disproportionate morbidity and mortality when compared to children in higher income groups. Crowded housing and limited access to care were cited as possible causes for the higher prevalence of ear and vision problems among poor children.

**Prenatal care services.** Early, continuous, and comprehensive prenatal care is one of the most important factors related to healthy birth outcomes and reduced infant mortality and low-birthweight infants (Rosenbaum et al., 1991). Between $14,000 and $30,000 is saved on every case of low birthweight prevented by prenatal care (Zimmerman, 1993, p. 6). The health-care profession recommends that prenatal care be obtained no later than the third month of pregnancy. Infants born to mothers who receive late care or no care at all are more likely to die before the age of one or to suffer lifelong disabilities. When a woman receives late, no, or discontinuous care, treatable conditions (e.g., hypertension and diabetes) are unattended, additional supports to address problems like alcohol and tobacco use are not given, and nutritional supplements and highly specialized services are not provided. Pregnant women who do not receive adequate and timely prenatal care

Women living in rural areas were found to be at greater risk for receiving inadequate prenatal care than women living in suburban and urban areas (Lawhorne et al., 1990). Risk factors for inadequate prenatal care included higher levels of poverty, lack of health insurance, and living in states with the most restrictive Medicaid policies. In addition, the loss of local health services including the closing of obstetric units in rural hospitals and the decision of local physicians to discontinue obstetrics made it difficult for rural women to receive adequate prenatal care.

In a study of nonuse of prenatal care, four categories of reasons for not obtaining prenatal care were identified: 1) women's lifestyles differed from the norm; 2) stressful events in their lives took precedent over prenatal care; 3) women attempting to receive care were discouraged, turned away, or given inadequate information by service providers; and 4) women did not want the child (Bedics, 1994).

The predictive ability of various approaches to assessing health risks and needs of pregnant teens was studied by McDiarmid (1988). The sample was made up of 48 pregnant teens enrolled in a teen pregnancy program designed to produce favorable mother and child outcomes. The study found that the more health care providers and pregnant teens were able to agree on the health and social needs of the teen, the more likely the teen was to keep prenatal care appointments and be satisfied with the assistance received. Data failed to show a relationship between maternal age and poor birth outcomes for infants.

The National Commission on Infant Mortality (1991) found these barriers to accessing prenatal care: lack of knowledge about prenatal services; poverty; weak referral networks in the health-care system; and fragmented programs and services.
When multiple agencies administered programs, barriers to service coordination were often erected. The Commission recommended "one-stop shopping" for health and social services as an effective strategy for meeting the needs of pregnant women and their children.

**Well-child and screening activities.** Regular well-child visits to a physician and developmental and health screenings provide the opportunity to detect child health problems early. These activities include: periodic physical examinations and dental assessments; nutritional assessment; vision, speech, hearing, and development assessment and screening; and laboratory screenings including lead and tuberculosis screening (IDPH, 1994). When children do not receive these basic health-care services, problems that could have been corrected early often lead to serious illness or disability which may impact negatively school attendance and learning (Walker, 1993).

The relationship of physicians' communication style to the expression of mothers' and fathers' concerns and level of parental satisfaction in well-child visits was studied by Gibbons (1990). A negative relationship was found between the number of fact questions a physician used and the number of concerns expressed and the proportion of well-child visit time devoted to discussion of concerns. When parents had the same physician for the last five well-child visits, they reported higher satisfaction levels with the well-child visit.

Obtaining parental involvement in children's health care in order to improve participation in well-child visits was examined in a pilot study conducted in a metropolitan, inner-city area (Mack, 1989). One hundred mothers of preschool children were enrolled in a 12-week program that incorporated three workshops on comprehensive and preventive health care for children. Surveys measured parents'
inhibitions and discomfort toward community clinics and a communication system was established between the centers and clinics. Program evaluation data revealed that all parents met the educational objectives and 96% kept their children's well-child visits. The most effective atmosphere for learning was found to provide a nurturing environment with parents and providers sharing equal partnership in children's health.

**Immunizations.** Children are given protection from infectious disease by immunization against polio, measles, mumps, rubella, diphtheria, pertussis, tetanus, and Haemophilus influenzae type b (HIB). But when immunizations are not given on the recommended schedule, children are at increased risk for these communicable diseases which are linked to impaired development and functioning (Millman, 1993, p. 69; Walker, 1993). Almost 25% of children in the United States were not fully immunized in 1993 (Centers for Disease Control, 1994). In 1990 over 25,000 cases of measles were reported in the United States far surpassing the national goal of no more than 500 cases set in 1979 by the surgeon general (Rosenbaum et al., 1991).

The inadequate levels of childhood immunizations has multiple causes that are primarily financial in nature. Vaccine prices increased by as much as 4,000% between 1981 and 1990. Fewer private physicians vaccinated young children because of the high cost and concerns over liability. Public health departments and community clinics also experienced a shortage of vaccination supplies, staff, and resources because they were absorbing children not being immunized by private doctors and the growing number of children in poverty and without health insurance (Rosenbaum et al., 1991, p. 18). Orenstein (1990) reported that barriers within the health care system including inadequate clinic hours and staff, inconvenient
locations, prohibitive policies, and missed opportunities also were found to contribute to low immunization rates.

Factors influencing utilization of health department immunization programs, early initial immunizations, and immunization completion were studied in all of Georgia's county health departments (Lugo, 1993). The impact of community characteristics—including income, race, education, and available health options—and health department characteristics—resources, availability, and convenience of immunizations, and level of proactivity—were evaluated. Utilization of immunization clinics was found to be lowest in counties where families had alternative sources of health care. The highest proportion of the county population that were under-immunized were Black, low-income families, and parents with less than a high school education. The study also found that the earlier children started immunization series, the greater the immunization completion rate. Immunization completion rates were highest in counties with larger budgets, a larger number of sites, no immunization fees, computerized tracking systems, and telephone reminding services. Comparable completion immunization rates were found between rural and urban areas.

The process that parents in inner-city areas go through to obtain immunizations for their children was the focus of a study by Lamsam (1993). Barriers to obtaining immunizations in a timely manner included a lack of specific parental knowledge about when and where immunizations should be obtained and resources related to family support and transportation. Low-income and less-educated parents were more likely to lack these knowledge and resources. In addition, the health care system also erected barriers to immunizations by refusing to vaccinate children with minor illnesses and demanding payment when parents lacked health insurance coverage.
Family-focused community health education. Family-focused education is an important strategy for reducing barriers to primary health care by informing parents about the need for regular and preventive health care, services in the community, and their role in their children's health care (Mack, 1989). In addition, educational programs can reach parents outside of traditional health-care settings and address family and community issues that impact children's health (DHHS, 1994). These programs can take a more comprehensive, preventive, and positive approach to improving children's health and well-being. Examples of family-focused community health education include prenatal and infant care classes, breastfeeding support groups, family communication training, and substance abuse prevention education. However, parents often experience financial, personal, and structural barriers that inhibit their participation in educational programs.

Barriers to effective recruitment and retention of parents to family-focused educational programs were studied by Spoth and Redmond (1993b). Reasons for deciding not to participate in prevention education were evaluated and characteristics of participants and non-participants were compared. Data were collected from 97 non-participants during a program recruitment interview and with a brief followup mailed survey. The most frequent reasons given for not participating related to program time demands and research-related requirements of the program (e.g., videotaping of participants). No significant differences were found between participants and non-participants on sociodemographic variables (i.e., education, employment status, gender, family structure, and number of children). Authors recommended that data be collected on non-participants in family-focused prevention programs to determine and clarify the barriers to participation.

A study of 1,192 parents in rural Midwestern counties was conducted to determine the influence of perceived program barriers and family context on parental
incline to enroll in parenting skills programs (Spoth & Redmond, in press). Barriers were defined in terms of the time, effort, and monetary costs of participating in preventive educational programs. Barriers were operationalized as having to find child care to attend meetings, attending weeknight sessions five weeks in a row, driving more than ten miles to sessions, and needing to pay $20 for program materials. All these barriers were found to influence negatively enrollment in educational programs, with the cost of program materials as the most frequently cited barrier to participation.

The program feature preferences of 202 parents of school-age children living in Midwestern counties were studied by Spoth and Redmond (1993a). During recruitment to programs, parents were found to place a great deal of importance on the practical aspects of family-focused prevention programs. The most important program features reported by parents were meeting time (during weeknights), facilitator background (child development specialist), program duration (no more than five weeks), an extensive research base for the program, and the meeting location (school or church). The least preferred features were workplace meetings, meetings lasting three hours, and school teachers and parents as program facilitators. Authors concluded that information on program preferences can help professionals to avoid erroneous conclusions about consumer needs and to develop strategies that enhance recruitment and retention.

A variety of financial, structural, and personal barriers were detected by this review of empirical studies of primary health care, prenatal care services, well-child care and screening services, immunizations, and family-focused community health education. The most common financial barriers were inadequate, or lack of, health insurance coverage, complicated reimbursement processes, cost of program materials, and unstable funding sources for health-care agencies. Structural barriers
arose from the unavailability of services in the community, transportation difficulties, problems recruiting and retaining staff in rural communities, inadequate community resources, insensitive and inappropriate practices for meeting family needs, negative community attitudes about seeking assistance, lack of interagency coordination, and inconvenient program features. Lack of education and knowledge, family poverty and low income, personal attitudes towards seeking help and attending classes, personal lifestyle choices, mothers' labor force participation, and stressful life events were found to be personal barriers to accessing primary health care. Few of these studies specifically examined the interaction between the family and the primary health-care system.

Community Approaches to Reducing Barriers to Primary Health Care

The ecological perspective also provides a framework for examining the nature and role of community interventions, or "health promotion," to reduce barriers to health-care services for children and families (Bubolz & Sontag, 1993; McLeroy et al., 1988). Health promotion "comprises efforts to enhance positive health and prevent ill-health, through the overlapping spheres of health education, prevention, and health protection" (Downie et al., 1990, p. 2). Use of and access to health-care services is a major health factor towards which health promotion efforts can be directed to improve the health of a population.

Ecological perspective for community health promotion

McLeroy et al. (1988) proposed a variation of Bronfenbrenner's model to describe health promotion interventions at different levels in the environment. There are five levels of factors at which health promotion strategies can be directed: (1) intrapersonal, i.e., characteristics of the child such as health history, special
developmental needs, age, etc.; (2) interpersonal processes and primary groups or microsystem factors, i.e., formal and informal social networks and social support systems including the family and peer group; (3) institutional or mesosystem factors, i.e., social institutions with organizational characteristics such as the school or work setting; (4) community or exosystem factors, i.e., relationships among organizations, institutions, and informal networks within defined boundaries; and (5) public policy or macrosystem factors, i.e., local, state, and national policies and legislation (McLeroy et al., 1988).

Historically, health promotion interventions have focused on the first two levels of McLeroy's ecological model—intraperonal factors related to the child and interpersonal factors relate to their family as the primary group (McLeroy et al., 1988). Efforts often are directed at changing individual or life-style behaviors that are linked to risks of chronic diseases like cardiovascular disease or cancer. McLeroy et al. describe these approaches as incomplete because social and environmental factors that promote or undermine individual behavior related to health are ignored. Health promotion based on individual behaviors also leads to efforts that are most suitable to middle-class groups but not low-income populations (Green & Raeburn, 1990).

In recent years, health promotion efforts have begun to focus on levels three, four, and five of McLeroy's model—the mesosystem, exosystem, and macrosystem. The model proposed by McLeroy et al. assumes that changes made in the social environment (i.e., the mesosystem, exosystem, and macrosystem) will create changes in individual behavior. Community-based health promotion efforts directed at the mesosystem, exosystem, and macrosystem recognize that a person's behavior or lifestyle is highly influenced by the environment in which he or she lives and that a population's health status can be permanently improved by changing the social and physical environment (Thompson & Kinne, 1990). They also recognize
that effective participation of citizens in health promotion interventions is needed for achieving significant change in health status (Wallerstein & Bernstein, 1994).

Green and Raeburn (1990) promote sharing responsibility between individuals and the community health-care system to improve health by addressing all levels of McLeroy's model. Individuals need to manage their personal lifestyle and have control of their behavior to the degree possible. But more complex lifestyle issues that are linked to the environment need collective analysis, action, and control, by those who are impacted by the issues and the decisions made to address them (Kreuter, 1994; Israel, Checkoway, Schulz, & Zimmerman, 1994). Unfortunately, many health-care professionals believe that they are the experts on people's health needs and often are reluctant to involve people in identifying and naming their health-care problems (Wallerstein & Bernstein, 1994).

Community interventions

Improving use of and access to primary health care can occur at all five levels of the health promotion model proposed by McLeroy et al. (1988). However, focusing on community factors appears to be most useful in identifying and mitigating the system barriers families encounter when accessing services. McLeroy et al. (1988) gives the term "community" three distinct meanings. These three definitions also help to describe family interactions with the primary health-care system at both the mesosystem and exosystem levels.

Community as mediating structure. The first definition describes community as mediating structures, which are face-to-face primary groups to which family members belong. They include families, personal friendship, and co-worker networks, and neighborhoods. Mediating structures are what Bronfenbrenner (1986)
refers to as the mesosystem, which consists of relationships between the family and others settings in the community.

Health promotion programs use mediating structures as a vehicle to provide education within communities, such as, work-sites or schools. Health promotion efforts also strengthen the mediating structures so that they promote a child's health and well-being. Home-visiting programs that provide support and education for new parents are examples of efforts that strengthens families as mediating structures (Zimmerman, 1993). Initiatives that focus on mediating structures often center on changing individual life-styles, or McLeroy's first and second levels, and do not address larger social and environmental factors that impact health and well-being.

Community as coalitions. The second meaning for community refers to the relationships among organizations and groups within a defined area. Community as coalition most closely fits Bronfenbrenner's (1986) conceptualization of the mesosystem and exosystem, and levels two and three of McLeroy's (1988) model. A mesosystem is created when families interact with the agencies and organizations on an individual basis to meet their needs. But when organizations and organizations join together in a coalition, they create an exosystem with the potential to produce positive "community effects" related to improving access to health-care services (Garbarino et al, 1992). A coalition also may work to improve the quality of the interaction between families and agencies and organizations, or the mesosystem.

Coalitions are an important strategy for mobilizing and organizing community-based health promotion activities (Bracht & Gleason, 1990; Labonte, 1994) and other efforts designed to improve the well-being of children and families (Comer, 1993; Perkins et al., 1994). They can be an effective means for linking organizations
and groups with a shared vision to address community problems (Bracht & Gleason, 1990; Labonte, 1994; Vaughn, 1994). Many coalitions are formed when community-based organizations and agencies recognize that families are facing problems too complex for one group to address alone and that these problems are most effectively solved through organized action together (Vaughn, 1994).

The increased use of coalitions in health promotion also may stem from the growing fragmentation in communities caused by significant social, economic, and technological changes (Comer, 1993). The nonformal networks and linkages that once occurred naturally in communities and created a "safety net" for children appear to no longer exist. Perkins et al. (1994) indicate that coalitions are one means to rebuild the safety net in many communities.

Community coalitions are defined by Green and Raeburn (1990) as relatively small groups of people linked together for common goals or purposes. Their membership is usually quite fluid with organizations free to enter and leave. Because of this fluidity, effective coalitions require committed leaders who direct a great deal of effort toward interorganizational communication (Bracht & Gleason, 1990). Coalitions usually engage in a process of planned change that activates a community to use its existing structures and resources, both internal and external, to accomplish goals that were determined by the coalition members. This process includes community analysis, design and initiation of a program, its implementation and maintenance, dissemination of the program to other communities, and reassessment.

Community coalitions, especially those that cover a wide range of services or a large geographic area, often are made up the professionals who provide the health care and other support services to the community (Eisen, 1994). They rarely involve in the decision-making process the people who are the targets of their programs. As
a result, there is a tendency for these groups to be more oriented towards examining and coordinating services, that is, making the current system work better, and less committed to social action for their clients. A coalition of professionals makes coordination among its agencies and organizations easier but there is still a need to advocate for macro-level changes that ensure greater accessibility to services for all citizens.

**Community as power.** The third meaning of community characterizes communities as geographical or political entities with one or more power structures (McLeroy et al., 1988). Power structures identify community health problems, allocate resources to address them, and determine which issues are placed before the public. They also can actively or passively block effective program implementation when they perceive real or potential threats to their economic or political interests.

Unfortunately, the citizens with the greatest needs (e.g., the poor, unemployed, mentally ill, undereducated) often have the least access to community power structures. Therefore, these disenfranchised people are often left out of the process of defining problems and developing programs and are subsequently labeled by professionals as "hard to reach" (McLeroy et al., 1988). But these disadvantaged groups are often hard to reach because their limited resources leave them little time, energy, or resources for participating in the community.

Health promotion programs need to incorporate strategies that increase access of disenfranchised groups to larger community power structures. Programs based on empowerment principles are the most successful in reaching the disenfranchised community members (Eisen, 1994; Labonte, 1994). Three mutually-reinforcing principles are recommended by Eisen (1994) and Labonte (1994) for
empowering people: (1) gain the participation of the disenfranchised in their neighborhoods and communities; (2) address problems with comprehensive, instead of categorical, strategies; and (3) organize community members to gain control over their lives. McLeroy et al. (1988) also recommends establishing contacts among different community networks, providing incentives to support participation, and applying community organization principles (McLeroy et al., 1988). Labonte (1994) outlines specific empowerment strategies that include developing citizen leadership, conducting assessments in a manner that incorporates citizens' concerns, and including citizens on policy-making bodies (Eisen, 1994).

Health promotion at the community-level encompasses important strategies for mobilizing communities to change health-care systems. Interventions can be based on one, two, or all three of the conceptualizations of community described by McLeroy et al. (1988). Historically, the most often used approach has been to focus on mediating structures, like parents, work-sites, or churches, to deliver health promotion education. In recent years, more interventions have formed coalitions to plan actions designed to solve substantive community problems. These coalitions are made up of subsystems that comprise the primary health-care system in a community. Less common are interventions that mobilize and activate disenfranchised groups in communities to shift power in relationships and resources.

**Community Assessment**

Community assessment is an important first step for a community coalition in developing a health promotion intervention that improves access to primary health care for children and their families. Assessing needs can confirm that certain families are encountering barriers or have other unmet needs that inhibit access to primary health care. Assessment also can demonstrate that responses are needed
by the health-care system, i.e., agencies, organizations, or community segments with the capacity, responsibility, and/or resources to respond (Hobbs, 1987). This study operationalized "community" using McLeroy et al.'s second definition—community as a coalition of agencies and organizations that make up the primary health-care system. The importance of community assessment, key components of the community assessment process, resource issues, and the role of evaluation specialists in conducting community assessment are described in this section.

**Importance of community assessment**

Community assessment involves a set of activities that produces information to support decision making at the community-level (Bruner, Bell, Brindis, Chang, & Scarbrough, 1993). The product of community assessment provides critical data about the community and its population's strengths and needs. Strategies and actions can then be based on the best available data and not on misperceptions, biases, or misleading information. Assessment findings also show local coalitions the present status on issues, gives direction on actions to initiate, and provides a baseline for tracking the effectiveness of actions.

The process of conducting a community assessment helps citizens better understand the needs in their community and become engaged in working towards changing the situation (Bruner et al., 1993). The importance of the community assessment process has been demonstrated in several evaluations of the Planned Approach To Community Health (PATCH) program. PATCH was developed and tested by the Centers for Disease Control during the 1980s to assist state and local health planning groups and coalitions with developing, implementing, and evaluating community-based health promotion programs (Kreuter, 1992). An evaluation conducted in 1990 found that community ownership of health problems was
promoted by collecting and analyzing local data to support program planning and development (Kreuter, 1992). This data collection process also was reported to be the most difficult and taxing for local community coalitions. But communities who adequately completed data collection were better able to strengthen their requests for funding and other resources.

In another study conducted by Braddy et al. (1992), involving local leaders and citizens in community assessment was a key element of the PATCH process that supported community empowerment. The researchers defined empowerment as "helping people acquire power to address their own health matters rather than having to rely on institutions, officials, or professionals" (Braddy et al., 1992). Key people identified in the initial phase of program development formed the foundation for successful assessments. Empowerment was found to be promoted when these key community members acquired skills for identifying and evaluating local information about their community's health-related issues.

In a formative evaluation of the PATCH program, Steckler et al. (1992) found that volunteer participation in the community needs identification stage created a greater sense of community ownership for health promotion programs and increased community awareness of and interest in health issues. Qualitative data also suggested that going through the difficult process of data collection produced a greater sense of personal ownership among volunteers. Communities with smaller populations (under 25,000) were found to have a greater sense of ownership than larger communities.

**Development of community assessments**

Community assessment entails a process of identifying and defining needs, opportunities, and resources needed to initiate community-level health promotion
programs (Haglund et al., 1990). The process incorporates activities commonly found in formative evaluation studies including reviewing the research literature and conducting surveys (Dehar, Casswell, & Duignan, 1993). The intent of formative evaluation, and hence, community assessment, is to provide decision makers with information and feedback at early stages of program development when opportunities for influence are greatest (Dehar et al., 1993).

Haglund et al. (1990) recommends that a comprehensive community assessment include five components:

1. A demographic, social, and economic profile that analyzes community characteristics that impact health and health promotion activities;
2. A health risk profile that determines actual or perceived health risk levels from behavioral, social, and environmental sources;
3. A health outcomes profile that reflects local morbidity/mortality and disability levels for different diseases and conditions;
4. A survey of current programs that shows where efforts are being concentrated and where opportunities exist for more work; and
5. A specialized community studies to obtain additional information about targeted groups and their awareness levels and perceived needs.

Data are obtained for these five components by accessing existing sources of information with a health and social indicator approach and/or by collecting new information through the use of key informant approaches and systematic surveys (Bruner et al., 1993; Haglund et al., 1990). Census and local economic data resources are used to compile the demographic, social, and economic profile. A profile of health risk is compiled with new and existing information from local health screenings and behavioral risk factor surveys. A health outcomes profile incorporates data on age-specific death rates, mortality ratios, and unnecessary
deaths by age groups. A survey of community health programs develops a database through local contacts with the health department, health care and other service providers, hospitals, wellness programs, etc. Specialized studies often use surveys, interviews, and focus groups to collect information from consumers and service providers about their particular needs, perceptions, and awareness levels.

**Health and social indicator approach.** A health and social indicator approach compiles and makes inferences from descriptive statistics that are already available to the public in order to create a picture of the current situation (Liss, 1993, pp. 13-4). An indicator provides an indirect measure—"health care need is measured by measuring something else" (Liss, 1993, p. 15). This approach is based on the premise that certain social and health characteristics—population and housing characteristics, education, income—are related to important aspects of health. These indicators include mortality and morbidity rates, incidence of disease, immunization rates, low birthweight rates, infant mortality, and poverty rates. These data usually are gathered from reputable and reliable existing sources including the census, vital statistics records, relevant state departments, local school districts, and health-care providers.

The health and social indicator approach has both advantages and disadvantages as a technique for collecting assessment information. Social indicator measures from existing data sources are readily accessible in both paper or computer format, inexpensive to collect, and available on a continuing basis (Butler & Howell, 1980, p. 6). It costs less money and takes less time to gather and analyze existing data than to gather and analyze new data (Zill, 1993). Census data also serve as a standard against which to compare current users of services with the potential users. For example, if 15% of the families in a county have incomes below
the poverty level but a program designed to reach these families is reaching only one percent, there may be a need for either new services or a new location for services.

There are several drawbacks to the social indicator approach. A community coalition may experience some difficulty in raising concern about health-care accessibility because data from the census and vital statistics records are standardized and quite familiar to most people (Murrell, 1976). Sometimes limited data are available at the county or census-tract levels, limiting the inferences that can be made about local populations. These data also do not reveal individual values, beliefs, reasons, or experiences underlying the phenomena being studied (Butler & Howell, 1980, p. 6). In addition, a statistic may not closely represent the indicator that it is intended to measure, raising concerns about validity (Liss, 1993, p. 22). The user of existing data also lacks control over how data were collected and tabulated; data collected over time also may vary in quality (Voss, Tordella, & Brown, 1987). Social and health indicators can be used as baseline data upon which to assess program impact, but cause-and-effect relationships can not be assumed because the measures are too broad and intervening variables are too numerous and unpredictable (Murrell, 1976).

The social and health indicator approach is currently being applied in two national initiatives to determine and track the health status of United States citizens. The Committee on Monitoring Access to Personal Health Care Services appointed by the Institute of Medicine is developing a set of indicators for monitoring access to personal health care and is planning to use these indicators to assess the state of access at the national level (Millman, 1994, p. 1). Indicators are being organized around five objectives: (1) promoting successful birth outcomes; (2) reducing the incidence of vaccine-preventable childhood diseases; (3) early detection and
diagnosis of treatable diseases; (4) reducing the effects of chronic disease and prolonging life; and (5) reducing morbidity and pain through timely and appropriate care (Millman, 1994, pp. 5-15).

Especially relevant to this study are the indicators for objectives one and two. Indicators of whether or not the country is promoting successful birth outcomes include use of prenatal care, infant mortality, low birthweight, and incidence of congenital syphilis (Millman, 1994, pp. 49-69). Indicators for reducing the risk of preventable childhood diseases are immunization levels among preschool children and incidence of vaccine-preventable childhood diseases (Millman, 1994, pp. 69-78). Millman (1994, p.33) believes these indicators will help track how well the nation or a community is fulfilling its responsibilities for organizing and delivering health-care services.

The second initiative in which the health and social indicator approach is being applied is the Healthy People 2000 project sponsored by the Department of Health and Human Services. This national initiative is designed to significantly improve the health of all United States citizens by reducing the health disparities among citizens and achieving access to preventive services. Specific objectives related to education and community-based programs, maternal and child health services, immunizations, and clinical preventive services have been established to achieve these goals (DHHS, 1994). Each objective has a set of indicators that are being used to track improvement or decline in health status. Specific indicators include: the percentage of children up to 24 months, from 2 to 12 years, and from 13 to 18 years who receive recommended preventive services; the proportion of pregnant women who received prenatal care during the first trimester; the infant mortality rate; and proportion of infants who receive primary care services.
Consumer survey approach. An approach often used in community assessment to conduct specialized studies of target groups is a consumer survey (Bruner et al., 1993; Haglund et al., 1990). This approach is based on the assumption that some form of direct contact with people impacted by a project is needed to obtain a valid picture of a target group's health-care needs (Liss, 1993, p. 26). Consumer surveys with parents strengthen community assessments by providing additional in-depth information that complements health and social indicator data (Bruner et al., 1993).

Surveys of randomly selected households or a "population-based study" are the most effective means of obtaining valid and reliable information upon which to base decision making (Bruner et al., 1993). A variety of families' views need to be elicited in order to ensure that the information is representative of the total population. If a population-based study is not feasible due to cost and time limitations, Bruner et al. (1993) recommends conducting interviews with groups of parents associated with schools, churches, or preschool settings. With these site-based groups, assurances need to be made to select a representative group of parents using systematic sampling techniques (Lavrakas, 1987, p. 48).

Properly conducted surveys serve as an excellent means for obtaining information from target groups but are usually a poor method for informing the general public about health promotion initiatives (Johnson & Meiller, 1987). Information giving and interaction can be enhanced by involving the local survey sponsors and the public in the survey process. Johnson and Meiller (1987) recommend interaction with the community during both the presurvey phase and survey process. In the presurvey phase, the coalition or local planning group who is sponsoring the survey meets with the survey specialist to determine the need for the survey, to air concerns, and to agree upon an action plan. During the survey and
follow-up phases, the local planning group can work with the survey specialist to
develop the questionnaire, assist in drawing a sample, and participate in data
collection, analysis, and dissemination.

The level of involvement by the coalition in each phase will be determined by
the community context. For example, the local coalition may lack the interest or
volunteers to distribute or tabulate surveys. Ryan (1987) recommends that local
participation be especially strong during the follow-up or post-survey phase to
ensure that the results will have an impact on local decision making. The survey
specialists needs to present and interpret the findings with the coalition and other
interested citizens. A decision-making framework needs to be established that
supports the review and evaluation of alternative strategies and recommendations.

Resource issues in community assessment

Most coalitions have limited time and funds to conduct community
assessments and need to determine the proper balance of time and money to spend
on assessment. Bruner et al. (1993) suggest three levels of activity for community
assessment:

1. "Snapshots"—A basic inventory of existing data on health and social
   indicators, requiring a minimal investment of time and funds.

2. "Intermediate"—A basic inventory of existing data and a short survey of
   key community informants; this approach takes about four to six months
   to complete and costs about $4,000 to $15,000.

3. "Comprehensive"—A basic inventory of existing data and a systematic
   survey of service providers and/or consumers; this level takes about six
   to 12 months to complete and costs from $15,000 to $120,000.
The time and money spent on assessment will be valued by the coalition and the community to the degree that the information produced becomes a part of the decision-making process and relates directly to the coalition's goals. The resources also will be viewed as well-spent if the coalition and the community have confidence in the information collected. To increase confidence, Bruner et al. (1993) recommend that data collection methods and reporting be characterized as accurate, practical, timely, objective, unambiguous, and understandable.

Role of the evaluation specialist

The evaluation specialist forms a partnership with the coalition when conducting a community assessment. The evaluator brings systematic and reproducible approaches to identifying and refining community problems (Rossi & Freeman, 1993, p. 58). Dehar et al. (1993) posits that formative evaluation involves a wider range of roles than those traditionally held by evaluators. An evaluator's traditional role is described as a technician or methodologist, but in formative evaluation an evaluator assumes political and advisory roles as consultant, educator, and change agent. The evaluator is challenged to maintain the scientific rigor of the study methods and measurement while at the same time being flexible enough to accommodate the diverse needs and expectations of the community (Mittelmark, 1990).

To facilitate a smooth working relationship between the evaluator and local planning group several strategies are recommended. The study design needs to be negotiated between the local planning group, the survey sponsor (if different), and the evaluator (Worthen & Sanders, 1987, pp. 166-168). This negotiation includes clarifying the evaluation questions and objectives and developing a practical plan of work with realistic timelines (Mittelmark, 1990). The methods and procedures need
to be designed for the particular community and its climate in order to maximize the study's application to real-life problems. The data gathered in the assessment should be organized and presented in a manner that is appropriate and useful for the local planning group.

Community assessment provides an important first step for instigating health-care system change in communities. The process of community assessment includes compiling existing data on health and social indicators at the community level. In addition, a consumer survey may be conducted to obtain specialized information about targeted groups and their needs. Local coalitions need to determine the level of resources they are able to invest in assessment. Participation of the local planning group in assessment promotes ownership of community problems and greater use of information in program development and delivery. The evaluation specialist partners with the local planning group to plan, conduct, and disseminate results from a community assessment.

**Summary of Literature Review**

The ecological perspective as conceptualized by Bronfenbrenner (1986) was reviewed to explain the interaction between families and the health-care system. This perspective incorporates successive levels of children's environment that influence their parents' ability to access primary health care for them. Interactions among the family, the health-care system, and the community in which both are located determine the barriers encountered and ultimately the degree to which parents obtain needed services for their children.

Millman's (1993) conceptualization described the types of barriers—financial, personal, and structural—that parents encounter when obtaining health-care services for their children. Studies were presented that described the barriers that inhibit
parents' ability to access health-care services related to the primary health-care system, prenatal care, well-child and screening services, immunizations, and family-focused health education. No studies specifically applied Bronfenbrenner's ecological perspective to the interaction between families and the primary health-care system at the mesosystem and exosystem levels in order to identify barriers to accessing health-care systems.

Health promotion at the community-level incorporates various strategies for improving access to health-care systems for children and families. Community interventions can strengthen mediating structures, create or enhance community coalitions, and/or change power relationships and resource distribution. This study operationalized community as a coalition of agencies and organizations that make up the primary health-care system.

Assessment provides an important first step in creating community ownership for health-care accessibility problems and for identifying areas that need improvement. Methods for collecting data include the use of existing data to create a health and social indicator profile and a consumer survey to obtain input from parents. Community coalitions need to decide the kinds and levels of resources to invest in the assessment process. Evaluation specialists form partnerships with local planning groups in conducting a community assessment.

The purpose of this study was to develop a community assessment that determined the type and nature of problems experienced by families when accessing basic health-care services in the community. Existing data about the community's social and health status were compiled and a consumer survey collected information about parental perceptions of and experiences with the current health-care system. Furthermore, this study provided an opportunity to develop framework and methodology by which other local coalitions could conduct community assessments.
CHAPTER 3. PROCEDURE

Bronfenbrenner's (1986) ecological perspective provides a framework for examining the interaction between families and community subsystems. It was adapted as the theoretical basis for this study to determine the system barriers families experience when accessing primary health-care services for their children. The purpose of this study was to develop a community assessment that identified parental perceptions about the current health-care system and problems that they encountered when accessing services. A social and health status profile were compiled using existing data and a consumer survey was conducted.

Context for the Study

In response to growing concerns about the health status of children and its relationship to parent's ability to access services, Chickasaw County established a Healthy Foundations Project in early 1993 by a grant to the local hospital. Healthy Foundations was a project sponsored by the Iowa Department of Public Health to improve primary health care for children by improving health-care delivery systems. Grants were provided to community coalitions made up of health-care providers, parents, community leaders, school personnel, and representatives of other community agencies concerned with the health and well-being of pregnant women and children from birth to 21 years. Coalitions used a community-based planning process to evaluate current primary health care delivery systems for children, identify areas needing improvement, and develop plans to address these concerns.

In early 1993, the coalition in Chickasaw County completed an inventory of community services for basic health care and a review of the report from a 1991 community meeting in New Hampton about the issues and goals for health and health-care services for infants, young children, adolescents, and young adults.
They determined that a specialized study was needed to obtain additional information about the nature of problems that families encounter when accessing primary health care in the county. The Healthy Foundations facilitator in the county requested the assistance of the investigator at Iowa State University to conduct the community assessment.

A plan for the community assessment was formulated and approved by the local Healthy Foundations project and Iowa State University (Appendix A Flow Chart). The objectives for the community assessment were to:

1. Compile a health and social indicators profile using existing data about the population of Chickasaw County and its health status;
2. Determine parental perceptions and identify barriers to health-care services using a consumer survey; and
3. Develop recommendations for reducing barriers to primary health-care services in the county.

The community assessment was an evolving process in which the university researcher worked hand-in-hand with the local Healthy Foundations coalition. The process began by identifying existing information about the primary health care system in Chickasaw County.

**Community Assessment**

**A health and social indicator profile of the county**

The first step in the assessment process was to create a health and social indicator profile that incorporated existing data related to demographics, socio-economic status, and health status of the county's children and families. A health and social indicator profile involves compiling existing information about a community and its population that has already been collected for other purposes.
(Voss, Tordella, & Brown, 1987). The data incorporated into the profile were originally collected and tabulated by Census Services at Iowa State University, the Iowa Department of Public Health, the Iowa Department of Education, and the Iowa Department of Public Safety.

The consumer survey

The Healthy Foundations coalition determined that a consumer survey was needed to obtain information about the barriers that parents encounter when accessing health care services for their children in the county. Barriers vary by the type and nature of the health care services being provided. In two group exercises, coalition members identified the health care services for which they needed information and the barriers that families encountered when accessing these services. Of the fifteen areas of primary health care services that could be examined (Appendix B), these four areas were ranked as the most important to study: well-baby and well-child health care; community health education; emergency/sick child care; and immunizations.

A list of potential barriers that families encounter when accessing primary health care services for their children also were identified (Appendix C). Some of these barriers related to structures and socioeconomic status of families, including low income and poverty, single parenthood, working parents, lack of knowledge, and attitudes towards obtaining help. The coalition recognized that they could not change these families but that the health-care system could adapt and change to meet the needs of families who experience such barriers. The information obtained in these two exercises was consulted when developing the survey.

A telephone interview was selected as the most effective and efficient way to administer the consumer survey. Response rates for most telephone surveys range
from 65% to 80%, whereas response rates for mailed surveys can range from 40% to 50% (Frey, 1990; Lavrakas, 1987, p. 56). Census data showed that about 80% of Chickasaw County families with children have both parents or the only parent participating in the labor force (Burke & Goudy, 1991). Employed parents who experience time constraints are likely to be unwilling to complete a questionnaire mailed to their home. A mailed survey plagued by a low response rate would require a greater investment of resources in terms of time and money to follow up on non-respondents.

People without telephones are problematic for telephone surveys. They usually include those who are renting, have low incomes, and are under-educated—the very people often most in need of health-care services. Census data from 1990 showed that 95.6% of all households in Chickasaw County had telephone service. About two-thirds of the 143 households without telephones were renters. Lavrakas (1987) emphasizes that people without telephones are "hard-core isolates" and could probably not be reached by any method.

When developing the interview for the telephone survey, the goal was to obtain a completed interview from as many respondents as possible. Respondents needed to commit to participating in the interview in a truthful manner, providing responses that reflect their true feelings, knowledge, and behavior. Frey (1990) recommends that the length of time to conduct a telephone interview not exceed ten to twelve minutes because studies of telephone survey methodology have found that people begin to lose interest after about ten minutes. Questions need to be short with less demanding responses than mailed surveys and face-to-face interviews because the interviewer is not able to use visual aids to keep the respondent engaged in the interview.
Examples of consumer surveys conducted for other Healthy Foundations projects in Iowa were reviewed for content. Consultation about the structure and content of the interview was done with health education and research design specialists, and conceptual reviews were obtained from the Healthy Foundation coalition and health education specialists. The interview was pilot tested by interviewing five parents from the county who were not selected for the sample, and additional revisions were made to the interview.

The interview contained twenty-nine items that focused on these variables: well-baby and well-child health care; immunizations; sick or emergency child care; health insurance coverage; community health education; and general information about respondents and their families. Table 1 identifies these variables and their corresponding question numbers in the interview. See Appendix D for the complete interview.

<table>
<thead>
<tr>
<th>Variable of Interest</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well-baby and well-child health care</td>
<td>2, 3, 4, 5, 6, 7, 8</td>
</tr>
<tr>
<td>Immunizations</td>
<td>9, 10, 11</td>
</tr>
<tr>
<td>Sick or emergency child care</td>
<td>14, 15</td>
</tr>
<tr>
<td>Health insurance</td>
<td>16, 17</td>
</tr>
<tr>
<td>Community health education</td>
<td>18, 19, 20, 21, 22, 23</td>
</tr>
<tr>
<td>General information</td>
<td></td>
</tr>
<tr>
<td>Demographics</td>
<td>1, 26, 27, 28, 29</td>
</tr>
<tr>
<td>Income</td>
<td>24, 25</td>
</tr>
<tr>
<td>Labor force status of parents</td>
<td>12, 13</td>
</tr>
</tbody>
</table>

The Iowa State University Committee on the Use of Human Subjects in Research reviewed this study and concluded that there were no risks for the participants; rights and welfare of participants were protected by the confidentiality of data; and informed consent was obtained by appropriate procedures.
Sample for the Consumer Survey

A larger sampling pool than the desired number of completed interviews is needed when conducting a telephone interview. The size of a sampling pool was determined by using a four-step process proposed by Lavrakas (1987, p. 49). The sample pool is determined by identifying: (1) the desired final sample size; (2) the likely hit rate of working telephone numbers; (3) the proportion of households excluded by specific respondent criteria; and (4) the proportion of eligible respondents who will be lost due to refusal or unavailability. A final sample of 150 completed interviews of families with pregnant women and/or children birth to 21 years represented about 8.5% of the 1,800 families with children in the county (Burke & Goudy, 1991). Because current school district directories were used for identifying potential respondents, a hit rate of 50% or better could be expected. A small proportion of potential respondents on school district lists would not meet study criteria because they lived outside of the county. A typical telephone interview loses about 15% to 25% of respondents due to refusal or unavailability during the study period of time. Using these recommendations, it was determined that a sampling pool of 300 names was needed to avoid sampling a second or third time.

The sampling pool was identified by systematically sampling the 1993-1994 student directories for four school districts in Chickasaw County: New Hampton, Fredricksburg, Nashua, and St. Joseph's Parochial School in New Hampton.

To prevent over-sampling from any one school district these steps were followed:

1. The number of families living in Chickasaw County, as listed in each school district directory, was counted.

2. The numbers from each school district were added to determine the total number of families in four directories.
3. The percentage of families from each school district list was determined.
4. The number of families needed from each directory to generate a proportional sampling pool of 300 families was decided.
5. A systematic sample from each directory was drawn by first determining sampling interval and random start for each directory and then selecting a subsample by taking every kith element from and including the random start number.

Parents in the sample were sent a letter describing the survey and asking for their cooperation about two weeks before the telephone interviewing began (Appendix E). Families with preschool children were asked to have information about their children's immunization records available.

Table 2 shows the sampling framework for the consumer survey. A total of 164 parents were reached during the four-week field period from mid-February to mid-March. Twelve parents refused to complete the survey, and one parent was unable to complete the interview. The usable responses represent 92.1% (151) of the invited sample. This high response rate suggests that the potential sampling bias in the results is negligible.

Table 2. Sampling framework

<table>
<thead>
<tr>
<th>School district</th>
<th>Number Families in District</th>
<th>Proportion</th>
<th>Number Families Drawn</th>
<th>Desired Final Sample</th>
<th>Data Producing Sample</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Hampton</td>
<td>713</td>
<td>52%</td>
<td>156</td>
<td>78</td>
<td>80</td>
<td>53%</td>
</tr>
<tr>
<td>Nashua</td>
<td>318</td>
<td>23%</td>
<td>69</td>
<td>34</td>
<td>36</td>
<td>24%</td>
</tr>
<tr>
<td>Fredricksburg</td>
<td>247</td>
<td>18%</td>
<td>54</td>
<td>27</td>
<td>24</td>
<td>16%</td>
</tr>
<tr>
<td>St. Joseph's</td>
<td>91</td>
<td>7%</td>
<td>21</td>
<td>11</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1369</strong></td>
<td><strong>100%</strong></td>
<td><strong>300</strong></td>
<td><strong>150</strong></td>
<td><strong>151</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Data Analysis

In the health and social indicator profile, the data were organized by population characteristics, family formation and structure, income and poverty levels, employment, and infant and child health status. Inspection of these data by the coalition provided a general overview of how families were faring in the county. However, as is the case with most existing data, the analyses did not provide specific information about families' interaction with the current health care system or the barriers encountered when accessing the system.

The consumer survey was designed to obtain specific information about parents' interaction with the primary health-care system and the problems they encountered when accessing services. The statistical software program SPSS was used to generate frequencies and percentages for all variables in the survey.

A decision was made not to use a "shot-gun approach" in which variables with no theoretical basis or practical rationale were analyzed (Borg & Gall, 1989, p. 581). Data were examined for possible variables that appeared to affect accessibility to health care. These variables included household income, race and ethnicity, educational level, geographic location, and other variables. All were eliminated, except household income, because the sample, like the county's total population, was a relatively homogeneous group. Respondents reporting problems accessing health care were too few on which to conduct additional analyses that were meaningful. However, additional analyses appeared to be warranted in comparing families with incomes of less than $20,000 per year with families (n=31) whose incomes were $20,000 and over per year (n=107).
CHAPTER 4. FINDINGS AND DISCUSSION

Trend data from the last 20 years have indicated that an increasing number of children lack needed primary health-care services. Various factors have been previously studied to help explain the growing problems that families have in obtaining health care but few studies have evaluated the interaction between the family and community. The purpose of this study was to examine the barriers to accessing primary health care for children and their families in the community in which they live. The ecological perspective by Bronfenbrenner (1986) provided the framework for developing a community assessment that studied families' interactions with the primary health-care system. Existing data about health and social indicators were compiled to provide an overview of the community and a consumer survey was conducted to collect data about parental perceptions and needs related to the current health-care system in one Iowa county. The findings of the health and social indicator profile developed from the existing data sources about the county and its families are reported in the first section. The barriers to health care identified by respondents to the consumer survey are summarized in the second section. In the final section, the findings from existing data and the consumer survey are discussed, recommendations for improving the health-care system are outlined, and the community assessment process is evaluated to suggest recommended principles and guidelines.

Profile of Chickasaw County

The health and social indicator profile was developed with descriptive statistics available from the decennial census, vital statistics, and other public health records. These data helped to describe the exosystem level, or community context, of the ecological framework (Bronfenbrenner, 1986). In addition, these data began
to indicate the kind and nature of community-based barriers to primary health care in Chickasaw County. Data are reported for these areas: population, family formation, family structure, income and poverty, employment, and infant and child health.

Population

According to the 1990 Census, the total population of Chickasaw County was 13,295. Chickasaw County's population was designated as 72.5% rural in the 1990 Census; 20% of the population lived on farms (Goudy & Burke, 1992). Between 1980 and 1990, this predominantly rural county lost almost 14% of its population. Almost 100% of the county's population was designated as white, non-Hispanic in racial and ethnic origin (Burke & Goudy, 1991).

In Table 3, the percentage distribution of the population by age groups is compared with the percentage of people in these age groups across the state of Iowa. Note that the proportion of children and youth under age 21 and of persons 65 and older was greater in Chickasaw County than for the state as a whole. In Chickasaw County, the percentage of residents 65 and older increased from 13.5% in 1970 to 17.8% in 1990, whereas the percentage of residents under 18 decreased from 38.6% in 1970 to 28.1% in 1990 (Goudy & Burke, 1991).

Table 3. Age groups as a percentage of the population in Chickasaw County and Iowa

<table>
<thead>
<tr>
<th>Age groups</th>
<th>County</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 6 years</td>
<td>8.5%</td>
<td>8.4%</td>
</tr>
<tr>
<td>6-11 years</td>
<td>10.4%</td>
<td>9.1%</td>
</tr>
<tr>
<td>12-17 years</td>
<td>9.3%</td>
<td>8.3%</td>
</tr>
<tr>
<td>18-20 years</td>
<td>3.2%</td>
<td>4.7%</td>
</tr>
<tr>
<td>21-64 years</td>
<td>50.9%</td>
<td>54.9%</td>
</tr>
<tr>
<td>65 years and older</td>
<td>17.8%</td>
<td>15.3%</td>
</tr>
</tbody>
</table>
Family formation

Vital statistics collected by the Iowa Department of Public Health for Chickasaw County showed that in 1992 there were 630 marriages in Chickasaw County and 40 divorces (Goudy & Burke, 1992). Marriages and divorces are recorded in the county in which they occur and often show a rate of two marriages to every one divorce. However, the Little Brown Church in Nashua, Chickasaw County, has been a popular site for weddings. People from around the state come to Nashua to be married, resulting in a higher than average number of marriages.

In 1992, 166 births and 124 deaths were recorded. When compared to 1981, births decreased 35% and deaths decreased 23%. In 1991, 14.5% of the county's births were to unmarried women, compared to 5.4% in 1980. This was a percentage rate increase of 166% (Goudy & Burke, 1991).

Family structure

The 1990 Census showed that Chickasaw County had 1,802 families with related children in 1990. A family is defined by the Census Bureau as two or more persons who are related by birth, marriage, or adoption. Families with children made up 35.7% of the households in the county (Burke & Goudy, 1991). In Table 4, the family types in Chickasaw County are listed and compared to the proportion of family types in the State of Iowa. Chickasaw County had more married-couple family types than the state and fewer families headed by female householders.

Table 4. Family types in Chickasaw County and in Iowa, 1990

<table>
<thead>
<tr>
<th>Family Type</th>
<th>County</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married couple</td>
<td>86.0%</td>
<td>80.3%</td>
</tr>
<tr>
<td>Female heada</td>
<td>10.2%</td>
<td>15.9%</td>
</tr>
<tr>
<td>Male Heada</td>
<td>3.8%</td>
<td>3.8%</td>
</tr>
</tbody>
</table>

aNo spouse present in the household
Income and poverty

Family income data were collected during the 1990 Census and included the income of all persons living in the family age 15 and older (Goudy & Burke, 1992). In 1989, the median income of families with and without children was $28,348 in Chickasaw County, compared to $31,659 for Iowa. In Table 5, the proportion of families found in different income groups are reported for Chickasaw County and for Iowa. The 1990 Census found that almost 30% of the county's families had incomes under $20,000 (Goudy & Burke, 1992). A larger proportion of families in Chickasaw County had incomes below $20,000 per year when compared to the entire state (25.6%).

Table 5. Family\(^a\) income in Chickasaw County and Iowa, 1990

<table>
<thead>
<tr>
<th>Family Income</th>
<th>County</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $10,000</td>
<td>7.6%</td>
<td>8.7%</td>
</tr>
<tr>
<td>$10,000 to 19,999</td>
<td>22.0%</td>
<td>16.9%</td>
</tr>
<tr>
<td>$20,000 to 34,999</td>
<td>36.3%</td>
<td>30.9%</td>
</tr>
<tr>
<td>$35,000 to 49,999</td>
<td>20.6%</td>
<td>22.4%</td>
</tr>
<tr>
<td>Over $50,000</td>
<td>13.5%</td>
<td>21.1%</td>
</tr>
</tbody>
</table>

\(^a\)Includes families with and without children.

Poverty information from the 1990 Census showed that the poverty rate for children under 18 in the county was 11.2% in 1989, compared to 14% in the State of Iowa (Burke, Goudy, & Hansen, 1992). The numbers and percentages of the county's children under 18 years of age who were in poverty during 1989 are reported by family type in Table 6. Poverty status for children was determined by the poverty status of their family. During 1989, the poverty threshold for a three-person household was $9,885 and, for a four-person household, $12,674. The poorest families with children in Chickasaw County were single-parent families headed by women; over 45% of these families had incomes below the poverty level.
Table 6. Poverty rate of families with children by family type

<table>
<thead>
<tr>
<th>Family Type</th>
<th>County</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married couple</td>
<td>5.6%</td>
<td>6.3%</td>
</tr>
<tr>
<td>Female head&lt;sup&gt;a&lt;/sup&gt;</td>
<td>45.2%</td>
<td>45.1%</td>
</tr>
<tr>
<td>Male head&lt;sup&gt;a&lt;/sup&gt;</td>
<td>22.2%</td>
<td>19.0%</td>
</tr>
</tbody>
</table>

<sup>a</sup>No spouse present in the home.

During an average month in 1991, 4.2% of the Chickasaw County's population received food stamps, and 4.8% of the county's families with children received Aid to Families with Dependent Children benefits. Over 24% of the 2,468 students in the county received free or reduced-price school meals during the 1991-1992 school year (Goudy & Burke, 1992).

Employment

According to the 1990 Census, over 1,400 (84%) women with children under eighteen years of age were participating in the labor force (Burke & Goudy, 1991). Almost 84% of the county children lived in families where both parents or the only parent were participating in the labor force; this proportion was higher than the state average of 76%. Table 7 shows additional statistics from the 1990 Census related to work and family trends. Women with children under 6 and women with children 5 to

Table 7. Work and family data

<table>
<thead>
<tr>
<th>Percentage of:</th>
<th>County</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women with children under 6 in labor force</td>
<td>82.9%</td>
<td>71.1%</td>
</tr>
<tr>
<td>Women with children 5–17 in the labor force</td>
<td>86.6%</td>
<td>81.8%</td>
</tr>
<tr>
<td>Children in two-parent families where both parents worked</td>
<td>79.2%</td>
<td>73.4%</td>
</tr>
<tr>
<td>Children in single-parent families where only parent worked</td>
<td>83.6%</td>
<td>73.7%</td>
</tr>
<tr>
<td>Children in two-parent families where father only worked</td>
<td>18.7%</td>
<td>23.9%</td>
</tr>
</tbody>
</table>
17 had very high rates of labor force participation, surpassing the state percentages. Most children, no matter what type of family they lived in, were likely to have both parents or their only parent working outside the home.

**Infant and child health**

Table 8 presents indicators related to infant and child health for Chickasaw County and for the State of Iowa based on five-year cumulative data (1987-1991) from the Iowa Department of Public Health. Rates and percentages for these statistics often will be averaged over a three-to-five-year period to prevent unusual, year-to-year fluctuations in statistics among smaller populations like those in rural counties. The infant mortality rate of 19.6 per 1,000 births for the county was more than twice the state rate of 8.1 per 1,000 births and almost three times the Healthy People 2000 goal of 7.0 births per 1,000. Eighty-five percent of the pregnant women reported receiving prenatal care during the first trimester, which also fell short of the Healthy People 2000 goal of 90%. Both the low birthweight rate and birth rate to girls age 10 to 17 were below the state rates and low birthweight met the Healthy People 2000 goal. The suicide rate of 11.3 per 100,000 adolescents between 15 and 19 years old was below the state rate of 15.7 but did not meet the Healthy People 2000 goals of 8.2. Both children under 15 and young adults from 15 to 24 had higher rates of death from motor vehicle accidents than the state and did meet the Healthy People 2000 goals.

Population-based growth stunting and iron deficiency anemia data were collected by the Centers for Disease Control from children aged 5 and younger who were enrolled in the Women Infant and Children's Nutrition Program (IDPH, 1994). Population-based growth stunting was determined by identifying the percentage of children in the county whose height to weight-for-age ratios fell below the fifth percentile for all children of the same sex and age on standard growth charts.
Table 8. Health status indicators based on five-year cumulative data (1987-1991)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>County</th>
<th>State</th>
<th>Year 2000 goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant mortality per 1,000 births</td>
<td>19.6</td>
<td>8.1</td>
<td>7.0</td>
</tr>
<tr>
<td>Low birth weight per 100 births</td>
<td>4.5</td>
<td>5.3</td>
<td>5.0</td>
</tr>
<tr>
<td>Prenatal care in first trimester</td>
<td>85%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Birth rate to girls age 10-17 per 1,000</td>
<td>5.1</td>
<td>7.1</td>
<td>NA</td>
</tr>
<tr>
<td>Suicde rate for age 15-19 per 100,000 teens 15-19 years</td>
<td>11.3</td>
<td>15.7</td>
<td>8.2</td>
</tr>
<tr>
<td>Deaths from motor vehicle accidents per 100,000 people under 15 years</td>
<td>25.3</td>
<td>5.7</td>
<td>5.5</td>
</tr>
<tr>
<td>Deaths from motor vehicle accidents per 100,000 for people 15-24 years</td>
<td>56.7</td>
<td>37.5</td>
<td>33.0</td>
</tr>
</tbody>
</table>

Over 10% of the children in low-income families in Chickasaw County were found to have height to weight-for-age ratios that fell below the fifth percentile. The Healthy People 2000 goal for the United States is to reduce the incidence of growth retardation among low-income children aged five and younger to less than 10%. Iron deficiency anemia was measured by identifying the percentage of children aged 5 and younger who had hematocrit (HCT) values below the fifth percentile for the United States population. In 1991, almost 14% of the county children in low-income families showed an iron deficiency due to diets low in iron (IDPH, 1994). In Iowa, 7.7% of children from low-income families had low HCT values. The Healthy People 2000 goal is for less than 3% of the children aged one to four to show this deficiency.

According to a 1992 retrospective school immunization audit, 68% of two-year-old children in Chickasaw County were fully immunized (4 DPT, 3 POV, 1 MMR, and 1 HIB), compared to 51.7% in Iowa. Full immunization was defined as having met the recommended schedules for these vaccines. The Healthy People 2000 objective is to increase childhood immunizations to 90% of all two-year old children.
Community context overview

The health and social indicator profile provided a general overview of the community's demographic, socioeconomic, and health status. Almost three-fourths of Chickasaw County's population of 13,295 people lived in rural areas and almost 100% of the population was white. The county's child population had decreased and older adult population had increased since 1970. The number of marriages, births, and deaths recorded in the county decreased during the 1980s and early 1990s while divorces increased slightly. Births to unmarried women of all ages increased by over 150% during the same time period. For families with children, married-couple families predominated while single-parent families made up 14% of all families with children.

Almost 30% of families in Chickasaw County reported incomes of less than $20,000 during 1989. Over 11% of the county's children lived in families with incomes below the federal poverty level and almost 24% were eligible for free or reduced-price school meals. In 1990, 84% of the children also lived in families in which both parents or the only parent participated in the labor force.

Health status indicators revealed that 10% of the children in low-income families in Chickasaw County experienced growth retardation and 14% showed an iron deficiency. Only 68% of the county's two-year olds were fully immunized. The infant mortality rate of 19.6 per 1,000 births and the percentage of pregnant women receiving prenatal care during the first trimester at 85% did not meet the Healthy People 2000 goals. Children under age 15 and young adults age 15 to 24 died from motor vehicle accidents at a higher rate than the state as a whole.
Results from the consumer survey provided information to describe the mesosystem level, which is the interaction between families and the primary health-care system in Chickasaw County. The findings are presented in four areas: 1) general information about the sample and how it compares to the total population of Chickasaw County, 2) parental perceptions of the health care system in Chickasaw County, 3) barriers to health care services encountered by families with children, and 4) health education programs for parents to help them better meet their children's health care needs. Where data were available, frequencies and percentages are presented for the families with incomes under $20,000 per year and with incomes $20,000 and over per year.

Description of the sample

Almost 90% of the families in the sample of 151 families were married-couple families, and 10% were single-parent families with either a female or male household head. The 1990 Census showed that 86% of all Chickasaw County families were married-couple families and 14% were single-parent families. About 81% of the respondents were female and 19% were male; all respondents were parents.

The 151 families in the sample contained a total of 378 children 21 years of age and younger. The average age of the children in the sample was 11.0 years and the average number of children per family was 2.5 children. The 1990 Census showed that the average number of children per family in Chickasaw County was 2.37 children. Table 9 shows the age distribution of the children in the 151 families. When compared to the 1990 Census percentages, the sample had a smaller proportion of children under age six and from ages 19 through 21 years than the
Table 9. Age of children in the sample

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>Total sample</th>
<th>1990 Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 6 years</td>
<td>64 (16.9%)</td>
<td>1126 (26.4%)</td>
</tr>
<tr>
<td>6 to 18 years</td>
<td>301 (79.6%)</td>
<td>2800 (65.7%)</td>
</tr>
<tr>
<td>19 to 21 years</td>
<td>13 (3.4%)</td>
<td>336 (7.9%)</td>
</tr>
</tbody>
</table>

Two children age 22 were not counted in the totals.

total population for the county. These results would be expected because the sample was selected from a school-based population.

Just over 20% (thirty-one) of the families reported incomes below $20,000 per year and 71% (107 families) reported annual incomes of $20,000 and over. The remaining 8.6% (thirteen families) did not respond to the question about annual income. The 1990 Census showed that almost 30% of the county's families had incomes below $20,000 in 1989; these data are for families both with and without children. They were collected in spring 1990 and reflected annual family income during 1989. The sample appeared to have a smaller proportion of families with incomes below $20,000 per year than the total county population. However, caution needs to be used in interpreting these differences because the census data were collected four years before the telephone survey was done and because the census data did not differentiate between families with children and those without children.

Table 10 presents the educational level of the respondents. Ninety-eight percent of the sample had received at least a high school diploma. Almost 40% of the respondents had obtained a post-secondary degree, i.e., an associate degree, bachelor's degree, or graduate degree. A larger proportion of respondents with incomes less than $20,000 had high school degrees or less than did those with incomes of $20,000 and more—54.9% as compared to 44.8%.
Table 10. Educational attainment

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some high school</td>
<td>3 (2.0%)</td>
<td>2 (6.5%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>High school grad, GED</td>
<td>67 (44.4%)</td>
<td>15 (48.4%)</td>
<td>46 (43.9%)</td>
</tr>
<tr>
<td>Some college</td>
<td>22 (14.6%)</td>
<td>5 (16.1%)</td>
<td>17 (15.9%)</td>
</tr>
<tr>
<td>Associate degree</td>
<td>32 (21.2%)</td>
<td>7 (22.6%)</td>
<td>23 (21.5%)</td>
</tr>
<tr>
<td>Bachelor's degree</td>
<td>22 (14.6%)</td>
<td>1 (3.2%)</td>
<td>16 (15.0%)</td>
</tr>
<tr>
<td>Graduate degree</td>
<td>5 (3.3%)</td>
<td>1 (3.2%)</td>
<td>3 (3.8%)</td>
</tr>
</tbody>
</table>

Table 11 shows the proportion of respondents living in town, on a farm, or in rural areas of the county for the total sample, for those with incomes below $20,000 per year, and for those with incomes $20,000 and more per year. A larger proportion of families with incomes of less than $20,000 lived on farms. This difference may be due in part to reduced farm income during 1993 from weather-related crop losses.

Table 11. Where respondents lived

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>In town</td>
<td>79 (52.3%)</td>
<td>12 (38.7%)</td>
<td>58 (54.2%)</td>
</tr>
<tr>
<td>On a farm</td>
<td>38 (25.2%)</td>
<td>12 (38.7%)</td>
<td>23 (21.5%)</td>
</tr>
<tr>
<td>Rural, non-farm</td>
<td>34 (22.5%)</td>
<td>7 (22.6%)</td>
<td>26 (24.3%)</td>
</tr>
</tbody>
</table>

Some differences between the sample of 151 families and the total county population were evident. A larger proportion of families in the sample were headed by married couples than in the total population. The sample also had a smaller proportion of children under age six and from ages 18 to 21; the difference in age groups should be expected because school district lists were used to obtain the sample. A larger proportion of respondents had post-secondary education than the total population. The sample also contained a smaller proportion of low income families than in the total population.
Parental perceptions of the primary health-care system

The findings reported in this section provide information about the interaction of families with the primary health-care system in Chickasaw County. Almost all respondents (98.7%) reported taking their children to a family doctor for health care. Of the families with more than one child, 90% reported that the same doctor provided care to all their children. Just over 13% of the respondents took their children to specialists and 4% reported using the hospital emergency room during the last year. Forty-five percent of the sample indicated that they did not take their children to the doctor for regular check-ups. The reasons for not obtaining well-child health care were not explored with respondents.

Seventy percent of the respondents said that their health care providers were located in Chickasaw County. Another 30% reported taking their children to health care providers (usually specialists) in Floyd County; Bremer County; Cerro Gordo County; Howard County; Black Hawk County; Mitchell County; Rochester, Minnesota; LaCrosse, Wisconsin; and Iowa City, Iowa. Few parents reported the need to drive to these other counties or states as problematic. One respondent commented that visits to specialists in Mason City gave the family an opportunity to shop and eat out.

Almost 93% of the parents reported that their children's health-care providers adequately answered questions concerning their children's health. Four respondents reported that health-care providers gave inadequate answers to their questions; the providers' explanations of symptoms or problem situations were reported as unsatisfactory.

Almost 87% of the respondents related that they did not have any problems obtaining health care services for their children. But there were 20 respondents (13%) who reported difficulty in obtaining services. The responses of these 20
parents and other barriers to accessing primary health care services are discussed in the next section.

**Barriers to health-care services**

Twenty families reported that they were unable to obtain primary health-care services for their children. In Table 12, the health care services that these 20 parents were unable to obtain for their children and the reasons that parents gave for being unable to obtain these services are reported.

<table>
<thead>
<tr>
<th>Health Care Services</th>
<th>Number Unable to Obtain Services</th>
<th>Income Less than $20,000a</th>
<th>Income $20,000 and Morea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental appointment</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Eyeglasses</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Regular checkups</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Doctor's appointment for illness or injury</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Counselor appointment</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Child care</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Screening for development</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Emergency room care</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Prescription medicine</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Immunization</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Reasons**

- Couldn't come during clinic hours
- Wait too long for an appointment
- Poor service
- Not available in county
- It cost too much
- Didn't have time to wait in doctor's office.
- No insurance
- Lack of child care

aSome respondents did not report income.
Fourteen respondents reported time-related reasons—not able to come during clinic hours, waiting too long for appointments, and not having time to wait in the doctor's office—for not being able to obtain services. Five parents reported that lack of insurance and cost prevented them from obtaining services.

**Immunizations levels.** Only two parents reported that their children did not have recommended immunizations. One parent reported that she was not able to get immunizations because the child was sick and the other parent reported that she did not have time.

On Table 13, the distribution of providers of immunizations is shown for the total group of families with children under age five, for families with incomes under $20,000, and for families with incomes $20,000 and over. Eighty percent of 51 respondents who had children five and younger obtained their immunizations from the public health department and another 18% obtained them from their family doctor. The public health department clinic seemed especially important for parents with incomes under $20,000; nine of the 11 respondents obtained vaccinations from the public health department.

<table>
<thead>
<tr>
<th>Table 13. Providers of immunizations&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Family doctor</td>
</tr>
<tr>
<td>Public health department</td>
</tr>
<tr>
<td>Child health clinic</td>
</tr>
<tr>
<td>Hospital</td>
</tr>
</tbody>
</table>

<sup>a</sup>One family reported two different sources of immunizations.
Parental work involvement. Work status of respondents and their spouses are given in Table 14 for the total sample, for families with incomes under $20,000, and for families with incomes $20,000 and over. Parents in the sample were heavily work-involved; 85% of the respondents and if married, their spouses, were involved in the labor force or farming.

### Table 14. Work status of respondents and their spouses

<table>
<thead>
<tr>
<th>Work status</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondent</td>
<td>Respondent</td>
<td>Respondent</td>
</tr>
<tr>
<td></td>
<td>Spouse/</td>
<td>Spouse/</td>
<td>Spouse/</td>
</tr>
<tr>
<td></td>
<td>Partner(^a)</td>
<td>Partner(^a)</td>
<td>Partner(^a)</td>
</tr>
<tr>
<td>Full time,</td>
<td>72</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>days</td>
<td>(47.7%)</td>
<td>(32.3%)</td>
<td>(35.5%)</td>
</tr>
<tr>
<td>Full time,</td>
<td>9</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>nights</td>
<td>(6.0%)</td>
<td>(3.2%)</td>
<td>(6.5%)</td>
</tr>
<tr>
<td>Part time,</td>
<td>34</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>days</td>
<td>(22.5%)</td>
<td>(6.5%)</td>
<td>(21.5%)</td>
</tr>
<tr>
<td>Part time,</td>
<td>4</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>nights</td>
<td>(2.6%)</td>
<td>(2.8%)</td>
<td>(2.8%)</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>(9.9%)</td>
<td>(12.9%)</td>
<td>(29.0%)</td>
</tr>
<tr>
<td>Not employed</td>
<td>17</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(11.3%)</td>
<td>(2.6%)</td>
<td>(7.5%)</td>
</tr>
</tbody>
</table>

\(^a\)4 had missing responses and 9 were not applicable

Fourteen percent of the respondents reported that their work or their spouses' work made it difficult for them to get their children to health care appointments. Fifteen percent reported that they had difficulty finding someone to care for their sick children so that they can go to work or stay at work.

If parents indicated problems were created by their work schedule in taking children to health care appointments and caring for sick children, they were asked to describe those problems. Here are some of the parents' comments in regards to:

- Farm field work
  - "Springtime is sometimes hard because of field work."
  - "Difficult to leave farm chores."
• "No one is around and living on a farm--(child care) is not accessible."
• "I can't get off work, and my husband is in field." 

Difficulties in scheduling appointments
• "I work 40 miles from home."
• "I have to take off work to get my children to their appointments because of clinic hours."
• "Extended clinic hours would be helpful."

Obtaining child care for sick children
• "My sitter does not like to sit when my child is sick."
• "After-school daycare would not take my daughter with strep."
• "If my relatives are busy, it is difficult to find someone to watch my sick kids."
• "Finding someone to come in and care for a sick child is a BIG PROBLEM!"

Financial issues. The methods families used to pay for health-care services and health insurance premiums are reported in Table 15. Almost 83% of the sample indicated that they paid for health care expenses with a combination of insurance and personal funds. Those families with health care insurance (N=125) were asked how they paid the insurance premiums. Almost 60% reported that they and their employer shared payment of the premiums, and another 17.6% reported that the family paid the entire premium. A larger proportion of low-income families with health insurance paid their own premiums than did families with higher incomes.
Table 15. Payment for family's health care and health insurance premiums

<table>
<thead>
<tr>
<th>Payment of health care</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance</td>
<td>125 (82.8%)</td>
<td>11 (35.5%)</td>
<td>102 (95.3%)</td>
</tr>
<tr>
<td>Personal funds</td>
<td>124 (82.1%)</td>
<td>19 (61.3%)</td>
<td>94 (87.9%)</td>
</tr>
<tr>
<td>Medicaid or Title 19</td>
<td>12 (7.9%)</td>
<td>11 (35.5%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (1.3%)</td>
<td>1 (3.2%)</td>
<td>1 (0.9%)</td>
</tr>
</tbody>
</table>

Payment of health insurance premiums

| Employer pays all      | 29 (23.2%)   | 1 (9.1%)                 | 28 (27.4%)             |
| Employer pays part     | 74 (59.2%)   | 3 (27.3%)                | 63 (61.8%)             |
| Family pays all        | 22 (17.6%)   | 7 (63.6%)                | 11 (10.8%)             |

Use of public assistance programs. Respondents were asked to indicate which public assistance programs they were using at the time of the interview. In Table 16, the numbers of respondents who used various public assistance programs are shown. Thirteen of the 31 families with incomes of less than $20,000 per year (42%) were using one or more public assistance programs. These 13 families used a total of 36 programs for an average of 2.76 programs per family. Two respondents indicated that they used a public assistance program but reported incomes of more than $20,000 per year. One family in the group of 13 families who used public assistance programs reported using six different programs, while six families reported using only one or two programs.

Ten families were using free or reduced-price school meals and nine families were using food stamps. General assistance and Social Security Insurance were the most under utilized, but this level usage should be anticipated considering the strict eligibility criteria for both programs.
Table 16. Use of public assistance programs

<table>
<thead>
<tr>
<th>Income Level</th>
<th>AFDC</th>
<th>General Assistance</th>
<th>Food Stamp</th>
<th>SSI</th>
<th>Medicaid</th>
<th>School meals</th>
<th>WIC</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $10,000</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>$10,000 to $20,000</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td>6</td>
<td>10(^a)</td>
<td>5(^a)</td>
<td>38</td>
</tr>
</tbody>
</table>

\(^a\)One respondent reported using this program but had an income greater than $20,000.

Family-focused health education

In Table 17, the topics that respondents expressed interest in learning more about through classes and other health related activities are reported. More than 50% of the respondents identified raising teenagers and dealing with stress as topics that would be of interest. The percentages for these two topics were

Table 17. Topics for classes or other health-related activities

<table>
<thead>
<tr>
<th>Topic</th>
<th>Total Sample</th>
<th>Income Less than $20,000(^a)</th>
<th>Income $20,000 and More(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising teenagers</td>
<td>88 (58.3%)</td>
<td>18 (58.1%)</td>
<td>64 (59.8%)</td>
</tr>
<tr>
<td>Dealing with stress</td>
<td>87 (57.6%)</td>
<td>17 (54.8%)</td>
<td>64 (59.8%)</td>
</tr>
<tr>
<td>Talking with kids about alcohol and drug abuse</td>
<td>72 (47.7%)</td>
<td>10 (32.3%)</td>
<td>57 (53.0%)</td>
</tr>
<tr>
<td>Teen suicide and depression</td>
<td>69 (45.7%)</td>
<td>12 (38.7%)</td>
<td>54 (50.5%)</td>
</tr>
<tr>
<td>Fitness, exercise and nutrition</td>
<td>68 (45.0%)</td>
<td>10 (32.3%)</td>
<td>54 (50.5%)</td>
</tr>
<tr>
<td>Talking with kids about sexuality</td>
<td>64 (42.4%)</td>
<td>7 (22.6%)</td>
<td>53 (49.5%)</td>
</tr>
<tr>
<td>Raising school-age child</td>
<td>62 (41.1%)</td>
<td>11 (35.5%)</td>
<td>43 (40.2%)</td>
</tr>
<tr>
<td>Raising preschoolers</td>
<td>20 (13.2%)</td>
<td>5 (16.1%)</td>
<td>13 (12.1%)</td>
</tr>
<tr>
<td>Selecting child care</td>
<td>12 (7.9%)</td>
<td>4 (12.9%)</td>
<td>8 (7.5%)</td>
</tr>
<tr>
<td>Infant care</td>
<td>3 (2.0%)</td>
<td>1 (3.2%)</td>
<td>2 (1.9%)</td>
</tr>
<tr>
<td>Breast feeding</td>
<td>2 (1.3%)</td>
<td>1 (3.2%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>Caring for elderly parents</td>
<td>1 (0.7%)</td>
<td>0</td>
<td>1 (0.9%)</td>
</tr>
</tbody>
</table>

\(^a\)Some respondents did not report income.
consistent for low-income and higher-income families. However, families with incomes greater than $20,000 expressed greater interest in topics related to talking to kids about substance abuse and sexuality. Few respondents expressed interest in classes on infant care or breastfeeding a baby. This lack of interest is probably due to the nature of the sample, which was selected from school district lists.

On Table 18, the sample's preferred methods for learning about health care are given. The top six methods chosen by the total sample were methods that can be used by an individual in their home or some other location of their choosing and at their convenience. They were: bulletins or pamphlets, books, television, video tapes, newsletters, or newspapers. Only 32.5% chose one-day workshops, and 25.2% chose a class that meets once a week for two or more weeks as preferred

<table>
<thead>
<tr>
<th>Method</th>
<th>Total Sample</th>
<th>Incomes Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulletin or pamphlet</td>
<td>94 (62.3%)</td>
<td>19 (61.3%)</td>
<td>64 (59.8%)</td>
</tr>
<tr>
<td>Books</td>
<td>89 (58.9%)</td>
<td>18 (58.1%)</td>
<td>64 (59.8%)</td>
</tr>
<tr>
<td>Television</td>
<td>75 (49.7%)</td>
<td>17 (54.8%)</td>
<td>51 (47.7%)</td>
</tr>
<tr>
<td>Videocassette tapes</td>
<td>74 (49.0%)</td>
<td>9 (29.0%)</td>
<td>58 (54.2%)</td>
</tr>
<tr>
<td>Newsletter</td>
<td>70 (46.4%)</td>
<td>13 (41.9%)</td>
<td>50 (46.7%)</td>
</tr>
<tr>
<td>Newspaper</td>
<td>68 (45.0%)</td>
<td>12 (38.7%)</td>
<td>51 (47.7%)</td>
</tr>
<tr>
<td>Individual consultation</td>
<td>52 (34.4%)</td>
<td>9 (29.0%)</td>
<td>35 (32.7%)</td>
</tr>
<tr>
<td>One-day workshop</td>
<td>49 (32.5%)</td>
<td>6 (19.4%)</td>
<td>39 (36.4%)</td>
</tr>
<tr>
<td>Radio</td>
<td>39 (25.8%)</td>
<td>7 (22.6%)</td>
<td>28 (26.2%)</td>
</tr>
<tr>
<td>A class that meets once a week for 2 or more weeks</td>
<td>38 (25.2%)</td>
<td>9 (29.0%)</td>
<td>27 (25.2%)</td>
</tr>
<tr>
<td>Audio cassettes</td>
<td>31 (20.5%)</td>
<td>4 (12.9%)</td>
<td>26 (24.3%)</td>
</tr>
<tr>
<td>Recorded telephone service</td>
<td>16 (10.6%)</td>
<td>3 (9.7%)</td>
<td>12 (11.2%)</td>
</tr>
<tr>
<td>Magazine</td>
<td>6 (4.0%)</td>
<td>1 (3.2%)</td>
<td>4 (3.7%)</td>
</tr>
<tr>
<td>Support group</td>
<td>1 (0.7%)</td>
<td>0</td>
<td>1 (9.3%)</td>
</tr>
<tr>
<td>Computer database</td>
<td>1 (0.7%)</td>
<td>0</td>
<td>1 (9.3%)</td>
</tr>
</tbody>
</table>
methods for learning about health care. A smaller proportion of low income families selected videocassette tapes, newspapers, and one-day workshops than did higher incomes families. This difference may be due to financial issues related to owning a videocassette player or paying for a newspaper subscription.

Respondents were asked to indicate how much they were willing to pay for health-related classes or activities that required a fee. The median dollar amount that the sample was willing to pay was $10.00. One-third of the respondents indicated they would pay $5.00 or less; one-third said they would pay $6.00 to $10.00; and the remaining one-third was willing to pay more than $10.00. Table 19 reports the amounts respondents are willing to pay by income groups. A higher proportion of respondents with incomes under $20,000 indicated that they would be willing to pay $5.00 or less for classes than those respondents with incomes of $20,000 or more per year.

Table 19. Amounts respondents willing to pay for classes and other health-related activities

<table>
<thead>
<tr>
<th>Dollar Amount</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More*</th>
</tr>
</thead>
<tbody>
<tr>
<td>$5.00 or less</td>
<td>33.8%</td>
<td>41.9%</td>
<td>32.4%</td>
</tr>
<tr>
<td>$6.00 to $10.00</td>
<td>33.1%</td>
<td>32.2%</td>
<td>33.4%</td>
</tr>
<tr>
<td>Over $10.00</td>
<td>33.1%</td>
<td>25.9%</td>
<td>34.2%</td>
</tr>
</tbody>
</table>

*Two missing cases

Table 20 reports the times that respondents were available for classes and other health-related activities. Almost 75% of the sample gave "evening" as the preferred time for classes. A smaller proportion of families with incomes less than $20,000 per year indicated "evening" and "late afternoon" as preferred times and a larger proportion indicated "mornings" and "by appointment" as preferred times than families with incomes of $20,000 and more.
Table 20. Preferred times for participating in health-related activities

<table>
<thead>
<tr>
<th>Time of Day</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evening</td>
<td>112 (74.2%)</td>
<td>18 (58.1%)</td>
<td>82 (76.6%)</td>
</tr>
<tr>
<td>Weekends</td>
<td>23 (15.2%)</td>
<td>4 (12.9%)</td>
<td>15 (14.0%)</td>
</tr>
<tr>
<td>Morning</td>
<td>23 (15.2%)</td>
<td>7 (22.6%)</td>
<td>14 (13.1%)</td>
</tr>
<tr>
<td>Late afternoon</td>
<td>18 (11.9%)</td>
<td>2 (6.5%)</td>
<td>15 (14.0%)</td>
</tr>
<tr>
<td>By appointment</td>
<td>14 (9.3%)</td>
<td>5 (16.1%)</td>
<td>8 (7.5%)</td>
</tr>
<tr>
<td>Afternoon</td>
<td>11 (7.3%)</td>
<td>3 (9.7%)</td>
<td>6 (5.6%)</td>
</tr>
<tr>
<td>Lunch time</td>
<td>5 (3.3%)</td>
<td>1 (3.2%)</td>
<td>3 (2.8%)</td>
</tr>
<tr>
<td>Only during the</td>
<td>4 (2.6%)</td>
<td>3 (9.7%)</td>
<td>1 (0.9%)</td>
</tr>
<tr>
<td>winter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (1.3%)</td>
<td>0</td>
<td>1 (0.9%)</td>
</tr>
</tbody>
</table>

Table 21 shows where respondents learned about health-related educational programs. Two-thirds of the respondents found out through the newspaper and 57% from their children's school. One-third of the respondents learned about programs by word-of-mouth. There are some differences between the low income and higher income groups. A smaller proportion of families with incomes less than $20,000 per year used the newspaper but a larger proportion used their children's school and the local Shopper.

Table 21. Where respondents found out about health-related educational programs

<table>
<thead>
<tr>
<th>Method</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>103 (68.2%)</td>
<td>19 (61.3%)</td>
<td>74 (69.2%)</td>
</tr>
<tr>
<td>Children's school</td>
<td>86 (57.0%)</td>
<td>21 (67.7%)</td>
<td>60 (56.1%)</td>
</tr>
<tr>
<td>Word of mouth</td>
<td>51 (33.8%)</td>
<td>10 (32.3%)</td>
<td>37 (34.6%)</td>
</tr>
<tr>
<td>Doctor's office or hospital</td>
<td>43 (28.5%)</td>
<td>11 (35.5%)</td>
<td>29 (27.1%)</td>
</tr>
<tr>
<td>Radio</td>
<td>32 (21.2%)</td>
<td>8 (25.8%)</td>
<td>22 (20.6%)</td>
</tr>
<tr>
<td>The Shopper</td>
<td>28 (18.5%)</td>
<td>8 (25.8%)</td>
<td>19 (17.8%)</td>
</tr>
<tr>
<td>From the Extension office</td>
<td>22 (14.6%)</td>
<td>2 (6.5%)</td>
<td>20 (18.7%)</td>
</tr>
<tr>
<td>Library</td>
<td>10 (6.6%)</td>
<td>2 (6.5%)</td>
<td>8 (7.5%)</td>
</tr>
<tr>
<td>Other</td>
<td>9 (6.0%)</td>
<td>3 (9.7%)</td>
<td>10 (9.3%)</td>
</tr>
<tr>
<td>Work</td>
<td>3 (2.0%)</td>
<td>0</td>
<td>1 (0.9%)</td>
</tr>
</tbody>
</table>
Respondents were asked to identify the reasons that they were unable or unwilling to participate in health-related classes and activities. In Table 22, the summary of these responses is given for the total sample, for families with incomes of less than $20,000 per year, and for families with incomes of $20,000 and greater. "Not enough time" was the most frequent response for all groups. A larger proportion of families with low incomes gave needing dependent care as a reason than the group with higher incomes. A larger proportion of higher-income families gave "inflexible work schedule" and "other commitments" as reasons than did families with low incomes.

Table 22. Reasons for not participating in health-related activities educational programs

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Total Sample</th>
<th>Income Less than $20,000</th>
<th>Income $20,000 and More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough time</td>
<td>68 (45.0%)</td>
<td>15 (48.4%)</td>
<td>44 (41.1%)</td>
</tr>
<tr>
<td>Inflexible work schedule</td>
<td>36 (23.8%)</td>
<td>6 (19.4%)</td>
<td>26 (24.3%)</td>
</tr>
<tr>
<td>Other commitments</td>
<td>36 (23.8%)</td>
<td>5 (16.2%)</td>
<td>29 (27.1%)</td>
</tr>
<tr>
<td>Too far to drive</td>
<td>18 (11.9%)</td>
<td>3 (9.7%)</td>
<td>15 (14.0%)</td>
</tr>
<tr>
<td>Need dependent care</td>
<td>11 (7.3%)</td>
<td>4 (12.9%)</td>
<td>7 (6.5%)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (2.0%)</td>
<td>2 (6.5%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Parent-community interactions

In summary, the findings from the consumer survey showed that the sample of 151 families were different in several respects from families in the total county population. The sample contained a larger proportion of families with married couples, a smaller proportion of children under age six and from 18 to 21, and a larger proportion of respondents with post-secondary education than the total population. The sample also contained a smaller proportion of low-income families than the total county population.
Almost all parents reported using the same family physician for their children's basic health care and the majority of these providers were located in the county. Just over 50% of parents took their children to the doctor for well-child checkups. Only four respondents said that their health-care providers inadequately answered their questions during health-care visits. Eighty-seven percent of the respondents reported that they did not have problems obtaining health-care services for their children.

About 13% of the families in the sample experienced difficulties in accessing primary health care services for their children. Fourteen respondents gave time-related reasons for not being able to obtain services. Families with low incomes did not appear to have more difficulty obtaining services than families with higher incomes. A majority of the respondents and, if married, their spouses, were involved in the labor force and 15% reported difficulties keeping health-care appointments and/or caring for sick children.

Children under six years of age were fully immunized, and parents were obtaining their immunizations primarily from public health department clinics. Most respondents had health insurance either through a private insurance company or from Medicaid. However, the majority of families with low incomes were not utilizing at all or under utilizing the public assistance programs for which they appeared to be eligible. Only 42% of the families with low incomes were using one or more public assistance programs.

Parents in the sample expressed interest in receiving health-related education and information. The topics of greatest interest were those related to parenting school-age children and teenagers and to dealing with stress. The most popular methods involved individual, self-study activities using print and video media. Group activities like classes and one-day workshops proved to be less popular choices but
when participating in these types of activities, parents overwhelmingly preferred the evening. The income level of the family was related to the amount they were willing to pay for a class. Most families with low incomes were not as willing to pay over $5.00 for a class or activity. Newspaper and children's school were the most common ways that respondents learned about classes. The reasons parents gave for not participating related to the time constraints caused by involvement in work and family responsibilities.

Interpretation of Findings

The theoretical perspective for this study was provided by Bronfenbrenner’s ecological framework (Bubolz & Sontag, 1993). According to this framework, the family interacts with multiple levels in the environment to fulfill the family's basic functions related to physical subsistence, economic support, and nurturance of family members including children (Bronfenbrenner, 1986; Bubolz & Sontag, 1983). The environment in which the family lives influences the family's ability to fulfill these basic functions. Of special interest in this study was the influence of the community (i.e., exosystem) and of the interaction between parents and the community-based primary health-care system (i.e., mesosystem) on parents' ability to meet their children's health care needs. In addition, an objective of this study was to develop recommendations for conducting community assessments by local coalitions who want to enhance the well-being of children and families.

Implications of the health and social indicator profile

Existing data about Chickasaw County were used to examine the exosystem and determine possible "community effects" that arise from the community and influence the family's ability to access primary health care (Garbarino et al., 1992).
These data showed that Chickasaw County had a population that was primarily white, and that was composed of a growing number of older adults and a decreasing number of children. The homogeneous racial composition of the population indicated that language and cultural characteristics were not an important barrier for families even though other studies have found that these characteristics created barriers to health care in more diverse communities (Millman, 1993, pp. 34-43). The changing age distribution suggested that the primary health-care system in Chickasaw County was serving fewer children under 18 years and more adults 65 and older.

Census data showed that almost 75% of Chickasaw County's population lived in rural areas and 20% of the population lived on farms during 1990. The rural nature of the county suggested several areas for which to conduct additional study. The county may lack specialized health-care services, which often are not available in rural counties, creating transportation problems for residents who need to travel to health-care specialists in larger metropolitan areas. Farm families in Chickasaw County may have experienced additional barriers because the farming cycle did not allow them to participate in special clinics and programs during peak work periods.

Part of the decreases in the births, marriages, and deaths in Chickasaw County between 1981 and 1992 were expected because of the 14% population loss during the 1980s. However, the number of marriages decreased by 31% and the number of births by 35%. This finding suggested that the population lost between 1980 and 1990 may have been predominantly young people at the life stages of marriage and childbearing. The lower death rate also suggested that older people in the county were living longer. This older group of adults had different health-care needs than families bearing and raising children. This finding, along with the
changes in age distribution, indicated that the primary health-care system in the county will be faced with balancing the different health needs of these two groups.

The proportion and number of births to unmarried women significantly increased and the number of divorces increased slightly during the same time period that the total number of births in Chickasaw County decreased. It was not known from these existing data if these unmarried women, who were having and/or raising children on their own, had the emotional and financial support of the children's fathers. These single parents may have had a more difficult time accessing primary health care due to time constraints and low income and may forego needed preventive services.

Despite the increases in divorces and unmarried births, the majority of families in Chickasaw County were headed by married couples in 1990; only 14% were headed by a female or male parent with no spouse present in the household. This finding suggested that most children in the county still lived in families with two parents available to meet their needs. Some of the problems anticipated from the growing number of single mothers may be limited to a small group of families in the county. However, this situation did not make the negative impacts any less serious for the parents and children who find themselves in this situation.

The median family income of families in Chickasaw County was lower than the median income of families in the State of Iowa. In addition, a larger proportion of families in the county had incomes below $20,000 per year than families in the entire state. Conclusions were difficult to make based on these data because the statistics include both families with children and families without children. The existing data did not provide information about the differences in incomes between the two types of families. It was not known if families with children had lower or higher median
incomes or if more families with children had incomes less or more than $20,000 than families without children.

Almost one-quarter of Chickasaw County children received free or reduced-price school meals because their family incomes were at or below 150% of the federal poverty level. Over 11% of the children under 18 lived in families with incomes below poverty; almost 50% of single-mother families with children had incomes below the poverty level in 1989. These findings suggested that in Chickasaw County some families with incomes just above or below the poverty level may have encountered problems accessing health care. Previous studies have shown that people with low incomes or in poverty experienced more barriers to accessing health care than people with higher incomes. These barriers included: health-care providers refusing to take patients on Medicaid due to inadequate reimbursements policies and bureaucratic red tape (NCFR, 1993); having to spend 50% more time traveling to and waiting to see health-care providers (Bronfenbrenner et al., 1983); negative community attitudes toward public assistance programs (Jensen & Eggebeen, 1994); and prohibitive costs for program fees and materials (Spoth & Redmond, 1993a).

The majority of children in Chickasaw County were living in families where both parents or the only parent participated in the labor force. This finding suggested that a significant number of parents in the county may encounter barriers to health care because of work schedules and commitments. Working parents have been found to experience these problems when obtaining health care for their children: inconvenient clinic hours; employers who did not give leave for children's health-care appointments; and inappropriate use of emergency room services for children's mild illnesses or well-child health care (NCFR, 1993). In addition, working
parents have had difficulty obtaining child care for sick children because their regular care provider will not take sick children (Dowswell & Hewison, 1993).

Health status indicators showed that key Healthy People 2000 goals were not being met for a portion of Chickasaw County's children and families. The only objective achieved in the county was the low-birth-weight infant rate of 4.5 per 100 births; this figure was below both the state rate of 5.3 and the year 2000 goal of 5.0 per 100 births. But the infant mortality rate was almost 20 infant deaths per 1,000 births, which was far above both the state rate and the Healthy People 2000 goal. The high rate of infant mortality suggested that some pregnant women and infants in Chickasaw County were not receiving proper preventive and support services.

Existing data showed that 85% of pregnant women received prenatal care services during the first trimester, which fell short of the Healthy People 2000 goal of 90%. Both the infant mortality rate and the prenatal care percentage provided important indicators of the quality of a community's maternal care system, the health care of newborns, and following-up during the first year of life with well-child services (IDPH, 1994; Millman, 1991, p. 63).

Children from low-income families were found to not meet two important Healthy People 2000 goals related to health and nutrition. Over 10% were found to have height-to-weight ratios that fell below the fifth percentile on standard growth charts. The Healthy People 2000 goal is to reduce the incidence of growth retardation to less than 10% of children from low-income families. Almost 14% of children from low-income families were found to have iron deficiency anemia. The Healthy People 2000 goal is for no more than 3% of children age one to four to exhibit an iron deficiency. These findings suggested that some children from low-income families in the county were not having their basic needs met. Both of the statistics for population-based growth stunting and iron deficiency anemia have been
found to reflect a community's ability to provide children from low-income families with supplemental food, primary health care, and other public assistance programs (IDPH, 1994). These indicators also have been shown to indicate the effectiveness of linkages among community health and social support programs which serve children.

Retrospective data from school district records showed that only 68% of two-year-old children in Chickasaw County were fully immunized, which was below the Healthy People 2000 goal of 90%. The low immunization rate in the county may have indicated that some children were not receiving the proper preventive and support services. Low immunization rates have been found to relate to the presence of barriers to other preventive health-care services in a community (Millman, 1993, p. 70). The immunization status of a community has been used by public health officials to determine the access of children and families to preventive services, the coordination of health-care services, and the effectiveness of outreach and education programs (IDPH, 1994). Although the existing data on immunizations did not indicate the reasons behind the low rate, previous studies have suggested a number of system barriers to obtaining immunizations. Health-care providers in the county may not be administering all vaccines at a single visit, may be reluctant to give vaccines to a mildly ill child, may not notify parents of the need for vaccines, or may even be reluctant to administer vaccines due to liability and cost issues (Millman, 1993, p. 74).

Especially troublesome were the statistics related to the suicide rate among teenagers from 15 to 19 years and deaths from motor vehicles for children under 15 and young adults 15 to 24. The suicide rate among teenagers age 15 to 19 was 11.3 per 100,000, which exceeded the Healthy People 2000 objective of no more than 8.2 suicides per 100,000. The high incidence of suicide among youth have
been linked to the need for intervention programs directed at reducing socioeconomic and emotional stress, for improved detection and treatment of depression, and for counseling and support programs for high-risk adolescents in the community (IDPH, 1994). Mental health services were identified as an area of primary health care in the county that needed additional study by the coalition.

Deaths from motor vehicles for children under age 15 was 25.3 deaths per 100,000 and, for young adults from 15 to 24, 56.7 per 100,000. All these statistics exceeded the Healthy People 2000 goals. Rural areas historically have had higher death rates from motor vehicles accidents among children than non-rural areas because people in rural areas use personal automobiles to meet their transportation needs and, as a result, drive more (IDPH, 1994). A broad range of community-level programs and policies have been found to decrease the rate of motor vehicle fatalities. These measures included: promoting the use of safety restraint systems in vehicles for children; requiring helmets for cyclists; and discouraging the use of alcohol and the operation of motor vehicles (IDPH, 1994).

These demographic, socio-economic, and health status indicators identified potential "community effects" that created personal, structural, and financial barriers to primary health care for children and families in Chickasaw County. The rural nature and changing age distribution of the county population may have created structural and personal barriers related to the unavailability of specialized services, the need to travel out of county for services, and negative community attitudes toward public assistance programs. The majority of county families were headed by married couples but a growing number were being formed and headed by single women who may have needed additional emotional and economic supports from the community. Almost one in four families had low incomes, indicating that these families may have had problems paying for health care and obtaining public...
assistance. The majority of two-parent and single-parent families had both parents or the only parent participating in the labor force, suggesting that parents may have had difficulties making children's health-care appointments, caring for sick children, and attending health education programs. Health status indicators suggested that a group of pregnant women and children were not receiving the proper preventive, intervention, and support services. However, whether or not these issues created specific barriers to health care for families in Chickasaw County could not be inferred from these existing data but only by additional study.

General suggestions about the community context, or exosystem, in which children and families live in Chickasaw County and the types of barriers to primary health care that these families might experience were indicated by these data. In addition, these data could be tracked over time to determine if the community or exosystem was improving or deteriorating on key social and health indicators. An advantage of using these existing data was their ready availability, saving time and money in gathering and analyzing new data (Zill, 1993). Conducting a community assessment using existing data has been recommended as a strategy for local coalitions with limited time and funding (Bruner et al., 1993).

However, using existing data to determine the barriers to health care had several limitations. Limited data were available at the county level, which did not permit making specific inferences about the local situation (Murrell, 1976). The existing data also did not show parental experiences with the issues under study related to the primary health care-system in the county and the ways that the accessibility of the system could be improved for families (Butler & Howell, 1980, p. 6). In addition, data from other sources were collected for purposes different from this study and may not have been carefully collected and tabulated, raising questions about their validity and reliability (Voss et al., 1987).
Barriers to primary health care for children and their families

The interface and linkage between families and the primary health-care system are described by Bronfenbrenner (1986) and others as the "mesosystem" (Bubolz & Sontag, 1993). The stronger and more positive the linkages between the family and the health-care system, the less likely the family will encounter barriers and children's health-care needs will be met (Garbarino & Abramowitz, 1992). A primary health-care system characterized as family-friendly and family-centered is believed to be the highest quality mesosystem (NCFR, 1993). This study examined the interaction between families and the primary health-care system in Chickasaw County in order that system changes could be made to strengthen the linkages.

The majority of the sample in this study reported having a family doctor who cared for their children and few reported using emergency room services. About 13% of the sample reporting using health-care specialists for their children. Most families appeared to have a stable, regular source of health care provided by a family physician, which has been identified as an important aspect of increasing access to primary health-care services and for minimizing inappropriate use of emergency room services (NCFR, 1993).

Only about half of the respondents said that they took their children to the doctor for well-child visits. The reasons for not using well-child care were not explored with respondents. As a result, it is not known whether the reasons stem from a lack of knowledge about the need for regular well-child visits, the cost, and/or a lack of time (Dowswell & Hewison, 1993; Mack, 1989). Regular visits to a physician and developmental and health screenings have been found to be critical in detecting children's health problems before they become serious and negatively impact children's development (Walker, 1993).
About 30% of the sample indicated that some of their health-care providers were not located in Chickasaw County. No parents reported that lack of transportation prevented them from accessing health-care services for their children and few parents described having to drive out of the county for visits to specialists as problematic. In other studies, the location of health-care services has been found to create structural barriers for parents when services were not available in the community and parents did not have a reliable source of transportation (Millman, 1993, p. 39).

The perceptions of the parents in this study reflected generally positive attitudes toward the primary health-care system in the county. This finding was not surprising given the fact that most respondents reported a regular, stable source of primary health care. Gibbons (1990) found that parents who had seen the same physician for the last five health-care visits reported higher satisfaction levels with the care.

Most parents in the sample reported that their health-care providers gave satisfactory explanations about their children's health. Only four respondents in this study reported that their health-care provider did not adequately answer their questions. Previous studies have found that treating parents as full partners in their children's care by providing clear and unbiased information was an important aspect of family-centered care (NCFR, 1993). The parents in this sample appeared to be receiving unbiased, clear information from health-care providers and, as a result, reported few difficulties related to receiving adequate answers to their questions.

Twenty families in this study reported problems in obtaining health-care services for their children. The majority of the reasons for problems were related to time—being unable to come during clinic hours, having to wait too long for an appointment, and not having time to wait in the doctor's office. These problems may
be related to the time and location of services. By making services available at convenient times or in convenient locations for parents in the community, time problems may have been minimized. Parents in this sample did not appear to have problems with other aspects of family-friendly care. They did not report any problems knowing about when and where services were offered or about where to get information about services. When specialized care was needed for a child, parents seemed to be able to obtain the referrals needed from the primary care provider.

All but two of the children under age 5 in the sample were current on their immunizations. This finding contradicted the findings from the retrospective school immunization audit which showed that only 68% of two-year olds were fully immunized in 1992 (IDPH, 1994). The discrepancy possibly could be attributed to the reliability of the existing data (Voss et al., 1987). Immunization audits are conducted by Iowa Department of Public Health officials (M. Anderson, personal communication, April 3, 1995). Twenty-five student records are randomly selected from a school district's first-grade enrollment and their immunization records evaluated to determine if students received their vaccinations according to the recommended schedule. A sample of 100 records for four school districts serving about 2,500 children may have been too small to draw accurate conclusions about immunization levels in the county (Goudy & Burke, 1992). In addition, over 80% of the sample reported receiving their children's vaccinations from the public health department clinic. Immunization levels have been raised in many communities by offering free or inexpensive vaccinations through special clinics offered by public health departments (Lamsam, 1993; Lugo, 1993; Orenstein, 1990).

The majority of parents in this sample appeared to be highly involved in work and family responsibilities and for some parents this created problems in accessing
health care. Almost 15% of respondents reported that their work or their spouses' work posed difficulties in taking children to health care appointments and another 15% experienced problems finding someone to care for sick children so they could go to work. Comments recorded from respondents also showed that parents' work schedules created problems when taking children to health-care appointments and caring for sick children. These findings verified another study of parents who reported that they had difficulty leaving work to take children to health-care appointments and that their child care arrangements for sick children were often informal and easily broke down (Dowswell & Hewison, 1993). In addition, the nature of the farm work cycle appeared to inhibit parents' ability to access care during peak farming periods. Weinert and Long (1987) also found that farmers often had difficulty accessing health-care services during peak farming times and recommended not offering special clinics or programs at these times.

The majority of respondents in this study had health insurance coverage, primarily through their employers, and used a combination of personal funds and insurance to pay for health-care services. Financial barriers related to inadequate health insurance coverage that does not cover preventive care services has been found in past studies to inhibit the use of primary health care (NCFR, 1993). Insurance plans that require copayments or large deductibles and do not cover pre-existing conditions also limited access (Millman, 1993, p. 37). Respondents in this study were not asked to describe the types of services or the level of copayments and deductibles in their insurance coverage. Therefore, conclusions could not be drawn about financial barriers created by limited health insurance coverage.

The respondents with low incomes appeared to be under-using or not using at all public assistance benefits for which they were eligible. There may have been a
number of possible reasons for the under-utilization of public assistance programs. The rural nature of the population in Chickasaw County may have been a factor. Historically, people in rural areas have had lower utilization of these services than people in urban areas (Jensen & Eggebeen, 1994). In many rural communities the dominant attitude towards people who receive benefits has been that they lack motivation and self-reliance. Informal social supports provided by neighbors, friends, and family members have been more prevalent in rural communities and a substitute for more formal services (Weinert & Long, 1987). A lack of knowledge about public assistance programs also has been found to prevent families from accessing support services for which they are eligible (Zimmerman, 1993, p. 6). Furthermore, Patrick et al. (1988) found that low-income groups in rural areas needed coordinated health and social interventions to reduce inequalities in health status.

Respondents' preferences on program features for family-focused education support Spoth and Redmond's (1993a, 1993b) conclusion that information on program preferences can help professionals avoid erroneous conclusions about consumer needs and to develop strategies that enhance recruitment. The current study yielded useful information about sources to inform parents about educational programs that may have gone otherwise unnoticed. Almost two-thirds of parents learned about health education programs from the newspaper and their children's school and another one-third through word of mouth.

Almost 60% of the respondents selected parenting their teens and dealing with stress as topics that would be of most interest to them. This finding was not surprising given the nature of the sample. Respondents and their spouses appeared to be heavily involved in work and family responsibilities, which could have been creating a high level of personal stress. In addition, many families were either currently parenting teenagers or would have teenagers in the near future. These
parents may have been anticipating the challenges of parenting adolescents and seeking parenting information to help them.

The top six methods preferred by respondents for learning about health-care and other family-focused topics were methods that can be used in one's own home and/or at one's own convenience—bulletins or pamphlets, books, television, video tapes, newsletters, and newspapers. This finding further supported the idea that most families were experiencing time constraints related to work and family responsibilities. Classes and workshops often require a greater investment of time and energy than most independent-learning methods and may not be offered at convenient times and locations for working parents. Spoth and Redmond (1993b) found that program time demands were a barrier that prevented many parents from enrolling in family-focused prevention education. Holding classes at parents' worksite may not be effective either because parents had identified their worksite as the least preferred place for parenting education programs (Spoth & Redmond, 1993a).

Respondents were willing to pay a median fee of $10.00 for health education programs but families with low incomes were unwilling to pay more than $5.00. Having to pay more than $20.00 for program fees and materials was identified by Spoth and Redmond (in press) as a barrier to enrolling in parenting skills programs.

The high work involvement of the sample created several barriers to participating in programs. Almost half of the respondents reported a lack of time and another 25% each identified inflexible work schedules and other commitments as barriers to participation. In addition, the majority of respondents preferred attending health-related programs during the evening hours, if they were to participate in a class or workshop. The respondents and their spouses, for the most part, were not available during the daytime hours and appeared reluctant to give up weekends for
educational activities. When preferences for program features were determined for a class for parents of school-age children, meeting times during weeknights was given as the most important feature by parents (Spoth & Redmond, 1993a).

Responses about preferences for program features may have been different if parents were responding to the features of a specific educational program rather than giving general preferences. For example, Spoth and Redmond (1993a) found that parents were willing to commit up to five weeks, one evening each week, to attend a parenting skills program designed to prevent substance abuse among children. If parents in the current study were being asked about their potential participation in a specific skills program on raising teens, multi-week classes or one-time workshops may have had preference over independent-learning methods. In addition, not enough time and inflexible work schedule may not have been cited as the most frequent reasons for not participating in programs if the program content met a specific need that respondents had.

Several variables that were identified in the examination of existing data as negatively impacting access to health care did not emerge as issues in the consumer survey. The rural nature of Chickasaw County did not appear to create transportation problems for respondents who needed specialized health-care services that were outside of the county. Single parents made up too small a proportion of the sample to conduct meaningful statistical analysis. Immunization rates were higher among the sample than indicated from the retrospective audit of school records. There were more similarities than differences between the two income groups—those with incomes less than $20,000 and those with incomes of $20,000 and greater. Families with low incomes did not report any more problems accessing health-care services for their children than families with higher incomes.
However, the findings of the consumer survey verified several barriers that were suggested by the existing data. Families who appeared to be eligible for public assistance programs were not utilizing them, which confirmed a potential barrier from the existing data. Rural communities have historically had lower utilization of public assistance programs and this lower utilization stemmed from negative community attitudes toward social welfare programs (Jensen & Eggebeen, 1994; Weinert & Long, 1987). Both the existing data and the sample for the consumer study showed a high level of labor force participation among parents. Time constraints and inflexible work schedules were found to pose problems for some parents in the consumer study. But the majority of parents did not report problems with taking children to health-care appointments and caring for sick children because of work. Parental work schedules did appear to influence their participation in family-focused health education.

The consumer survey produced valuable data about the mesosystem, i.e., interface between the family and the health-care system in Chickasaw County. Findings probably are applicable to similar rural counties in Iowa. However, there were several limitations to this study stemming from the use of a survey approach. The sample under-represented families with children from birth to five and from 18 to 21 years. Conclusions and inferences can be made about families with school-age children with a relatively high degree of confidence but can be done with less confidence for families with preschool children and post-secondary young adults. In addition, thirteen respondents declined to give income data to the interviewers. It is not known if this group of respondents was different from the group which did give income data. Lastly, the use of a telephone interview designed to take 10 to 12 minutes to administer did not permit in-depth questioning or lend itself to Likert-type response items. The decision was made to achieve the highest possible response
rate, which resulted in sacrificing some volume and depth of information. All three of these limitations were openly discussed with the Healthy Foundations Coalition and it was determined that the limitations did not compromise the usefulness of the information for the coalition's work.

Recommendations for the community coalition

The findings of the community assessment revealed several areas of the primary health-care system in Chickasaw County that needed improvement. The system needed to better accommodate the needs of parents who were balancing work and family responsibilities. Human services agencies and the health-care system needed to work collaboratively to promote effective use of public assistance programs among low-income families. The local coalition should rethink how it offers health education activities to families in the community in order to reduce the barriers to participation by working parents.

Recommendations for improving the primary health care system are given for reducing the barriers to health care for working parents and low-income families, and for reducing the barriers to family-focused health education. In addition, other recommendations for improving key health status indicators related to infant mortality, accidental deaths, and suicide are given.

To reduce the barriers to primary health-care services for families in which both parents or the only parent participate in the workforce, the following recommendations were suggested:

1. Maintain and support the current primary health care system in Chickasaw County. Families appeared to be generally satisfied with the system and experienced few problems in accessing health care services.
2. Continue working towards providing family-centered services. Develop and offer in-service training to health care providers, the schools, employers, and human services staff about the current status of families in Chickasaw County, the delivery of family-centered service, and the needs of working parents.

3. Involve more health care providers and others in the community-based health-care planning process. Keep the Healthy Foundations Coalition active to address emerging issues related to health care reform and to families with children.

4. Work with primary health-care providers to study the feasibility of extending clinic hours to accommodate the needs of working parents who have difficulty making health care appointments during "traditional" hours of service.

5. Provide training to child-care providers about issues related to caring for sick children. The child-care information and referral agency should work collaboratively with the hospital to explore the feasibility of establishing a system of care for sick children.

To reduce the barriers to primary health-care services for low-income families, these strategies were recommended:

1. Develop a communication campaign to promote the use of public assistance programs among low-income families in the community so that these families can better meet their needs for adequate food, shelter, education, and health care.

2. Work with the school systems to increase usage of free or reduced-price school meals among eligible families. A special letter about the program
can be addressed to all parents in the district, and information can be distributed during fall registration.

3. Promote use of the Women, Infants, and Children Nutrition Program through the public health department's immunizations clinics. Printed materials and one-on-one consultation can encourage parents to apply for benefits.

4. Complete the Service System Organization Indicators Worksheet from the Healthy Foundations Manual (IDPH, 1993) with key health-care providers, school personnel, and human services staff in the county. Determine if referral patterns between health and human service agencies are in place so that low-income families are effectively served.

To minimize the barriers to participating in family-focused health education programs, these recommendation are made:

1. Continue to offer health-related educational activities that incorporate a variety of program formats. However, recognize that fewer parents have the time or energy to participate in group workshops and classes. Experiment with independent learning methods using print and video media.

2. Create a library of resource kits containing videotapes and printed materials on health-related topics of interest to parents. Make these kits available to parents through the public library, Extension office, the local medical clinic, schools, or daycare centers. Either no or very nominal fees should be charged for their use so that all parents can afford to use them. Promote the availability of the kits through the school system and the local newspaper.
3. Offer educational activities aimed at helping parents and youth to reduce their stress levels. Assist the schools in developing a plan to mobilize an effective response when a teen suicide occurs.

4. Mount a communication campaign to reduce motor vehicle fatalities among children and youth by promoting the use of safety restraints for younger children, seat belt use for all people, and helmets for cyclists.

To improve the community's statistics on health status indicators, it is recommended that the coalition:

1. Track health status indicators for the county to determine if problem areas are improving or worsening. The local coalition should pay special attention to indicators related to iron deficiency anemia, infant mortality, youth suicides, and motor vehicle fatalities among children and youth.

2. Continue current immunization efforts through the public health department. This program appears to be reaching most families with children ages five and under. Develop a backup plan for the community in the event that funding for immunizations is reduced or eliminated.

3. Develop a more reliable system for tracking immunization rates in the county. The current method of retrospectively studying school records may not be the best approach for tracking immunizations.

4. Conduct a more in-depth study on parents' interaction with mental health services in the county and develop strategies for improvement. This area of the primary health-care system was identified as a high priority by the coalition but resources were not available to study it.

The local coalition needs to prioritize and select those strategies that seemed most feasible and to develop an action plan to implement the strategies. All recommendations are designed to be possible alternatives for the group to consider,
add to, or delete. These findings and recommendations should help the coalition to improve the "family-centeredness" of health care services and to reduce system barriers that parents encounter when accessing the health care system. The children of Chickasaw County ultimately will benefit from these changes in terms of enhanced development and well-being.

**Evaluation of the community assessment process**

This study developed and conducted an assessment process based upon recommended principles and guidelines identified in the evaluation and health promotion literature. The goal in developing the assessment was to create a process that applied technically-rigorous procedures while remaining responsive to the needs of a community-based coalition. The purpose of this section is to evaluate or critique the assessment process against these principles and guidelines.

Community assessments were identified by the Iowa Department of Public Health (1994) as an important first step in planning health-promotion efforts that reduce the barriers to health care in communities. Formal assessments that are properly conducted have the potential to mobilize communities to action. This community assessment was commissioned by the Healthy Foundations Coalition in Chickasaw County to determine the kinds of barriers that families in their county encountered when accessing health care for their children. The coalition's intended to use the information generated by the assessment to identify areas of the primary health-care system that needed to be improved and to plan strategies for their improvement.

To produce the kind of information that motivates change at the community level, the community assessment needed to incorporate an ecological perspective. Traditionally, health-promotion efforts at the community level have focused on
changing individual lifestyles or behaviors rather than changing people's environment, i.e., the systems and subsystems. McLeroy et al.'s (1990) ecological perspective for health-promotion efforts recognized that the social environment, which includes the mesosystems and exosystem, also has implications for people's health status. As a result, this assessment incorporated an analysis of both the exosystem through the use of existing data and the mesosystem (i.e., interface of families and the health-care system) with data collected from a consumer survey.

Haglund et al. (1990) recommends that a comprehensive community assessment incorporate five components: a demographic, social, and economic profile; a health risk profile; a health outcomes profile; a survey of current programs; and specialized community studies of target groups. The current study used the health and social indicator profile for the demographic, social and economic profile and a health outcomes profile. The consumer survey provided specialized information about families with children.

However, this study did not include a health risk profile and a survey of current programs. The local coalition choose not to develop a health risk profile, which assesses individual lifestyle and behavior characteristics, because of their interest in system change and not individual change (Haglund et al., 1990). The coalition also had previously attempted an inventory of preventive, intervention, and support services that made up the primary health-care system in the county. However, the inventory was never completed by the coalition coordinator and the coalition selected not to complete it as a part of this assessment process. The omission of the program inventory created a weakness in the community assessment because this inventory would have provided critical "exosystem" information about the availability of health-care services in the county (Haglund et al., 1990).
Participation by key stakeholders and citizens, especially those who will be impacted by the assessment, are critical to a community assessment's effectiveness in leading to system's change. Previous studies have shown that when planning groups involved community leaders and citizen in the assessment process, community ownership of problems and mobilization to solve them were enhanced (Braddy et al., 1992). In this study, members of the Healthy Foundations Coalition participated in the assessment process. This coalition was made up primarily of the professionals who provided health-care and other support services and not the parents who were the targets of the project. Strategies were needed to gain the meaningful participation of the people that the coalition was trying to reach—the "disenfranchised" who experience the greatest barriers to health care (Eisen, 1994; Labonte, 1994). Parent representation could have been supported by providing child care, holding meetings during the evening hours, and paying stipends to low-income parents.

Johnson and Meiller (1987) recommended that local planning groups be involved in all phases of the assessment process. The Healthy Foundation Coalition was very involved during the presurvey phase by determining the evaluation questions and developing an action plan for the assessment. During the survey phase, an ad hoc committee worked with the evaluation specialist to develop the interview and draw the sample. They had little involvement in data collection and analysis. In the follow-up phase, coalition members received the assessment findings and strategized ways to disseminate the information and begin action planning.

Local situations will determine the level of involvement by members of community coalitions during the different phases of the assessment process. The group in Chickasaw County was not interested in getting involved in the technical
aspects of data collection and analysis. This lack of involvement was partially due to the changing membership of the coalition; only three or four people made up a consistent core for the coalition. Like many community-based coalition organizations frequently entered and left coalition activities (Bracht & Gleason, 1990).

Unfortunately, the fluid membership of the Healthy Foundations Coalition became problematic during the study. Towards the end of data analysis it became apparent that a core group of only four members was not large enough to do meaningful action planning based on the assessment findings. The evaluator requested assistance from a community development specialist to work with the group in recruiting new members and building group rapport. One year after the study's completion the coalition only had been successful in identifying action strategies but had not been begun to carry the strategies out.

Members of the coalition in this study concurred that the technical aspects of data collection and analysis were not their expertise and that they did not have the time to learn these processes. As a result, the Healthy Foundations Coalition worked with an outside evaluator to plan and conduct the assessment process. An evaluation specialist provided the coalition with systematic and reproducible approaches for identifying community problems (Rossi and Freeman, 1993, p.58).

The evaluation specialists for this study found that in addition to a technical role, political and advisory roles as consultant, change agent, and educator were often assumed when working with the local coalition (Dehar et al., 1993). The purpose and content of the assessment was not determined and driven by the evaluation specialist but by the local coalition. The negotiation involved in developing the assessment required skills in helping a group come to agreement. At times, the coalition needed education about research methodology in order to
understand and make decisions about the assessment process. Mittelmark (1990) posited that an evaluator often is challenged to maintain high scientific standards for a study while being flexible enough to serve the different needs and expectations of the community stakeholders.

Several strategies that have been found to support a smooth working relationship with a local planning group were used in this community assessment. The assessment process was discussed carefully with the coalition members and negotiated between the coalition coordinator and evaluator (Worthen & Sanders, 1987, pp. 166-8). A formal agreement was formed and signed between the university and the Healthy Foundations Project in Chickasaw County. This agreement included the general evaluation questions, objectives, a plan of work with timelines, products of the evaluation, and the budget (Mittelmark, 1990). The evaluator met face-to-face with the group three times and kept in regular contact by telephone throughout the entire process. Lastly, the data from the assessment were organized and presented to the group in a slide presentation, a written report, and a two-page executive summary (Dillman, 1987). The coalition coordinator also was given two media releases to put in the county newspapers and organizational newsletters.

The Healthy Foundations Coalition in Chickasaw County had funds to pay for the services of an evaluation consultant who conducted the community assessment; many local coalitions do not have these resources. Three levels of activities for community assessment are recommended by Bruner et al. (1993) to accommodate different resource needs. In level one, the coalition creates a "snapshot" of the community by compiling a basic inventory of existing data on health and social indicators. This approach is within the capacity of most coalitions, requiring a minimal investment of time and funds. At level two, a basic inventory of existing data
is compiled and a short survey of key community informants conducted. This approach takes about four to six months to complete and costs about $4,000 to $15,000. The third level involves a comprehensive assessment that includes a basic inventory of existing data and a systematic survey of service providers and/or consumers. This level takes about six to 12 months to complete and costs from $15,000 to $120,000.

The Healthy Foundations Coalition in Chickasaw was able to conduct a comprehensive assessment for just over $6,000, which is a "bargain" compared to guidelines set forth by Bruner et al. (1993). However, the coalition still had to make choices about the amount of information they could afford to collect. Some coalition members were very interested in knowing more about access to mental health services for children and families in the county. When the group prioritized about areas to study in the community assessment, mental health services was among the top five areas. But the coalition decided that they lacked the resources to conduct an adequate analyses of this area of service and decided not to do additional study at the time.

In summary, this community assessment applied a number of the recommended principles of and guidelines for community assessment identified in the evaluation and health promotion literature. An ecological perspective was used to study the mesosystem and exosystem that make up the primary health-care system in Chickasaw County. The assessment incorporated technically sound and rigorous methodology for collecting, tabulating, and analyzing data. The evaluation specialist worked closely with the coalition's core group to plan and conduct the assessment, and to disseminate information about the assessment.

The community assessment could have been improved in several ways. The lack of participation by citizens and parents in the assessment process was
especially critical; an effort needed to be made to incorporate their involvement. This study focused on developing a health and social indicator profile and conducting a consumer survey and did not complete an inventory of current programs, which would have provided critical data about the current health-care system. The fluid membership of the coalition created problems for the evaluator in carrying out the assessment plan. A community development specialist brought in earlier in the assessment process could have strengthened the coalition. It then may have been possible to increase the coalition's members involvement throughout the assessment, particularly during data collection and analysis.
CHAPTER 5. SUMMARY AND RECOMMENDATIONS

A family's ability to access primary health care is critical for children's well-being and development. However, a growing number of children are experiencing barriers to obtaining basic health-care services because their parents are poor, lack health insurance, live in communities with inadequate services, and/or are overburdened with work and family demands. Evidence of growing problems with health-care accessibility are shown in the negative trendlines related to increasing rates of infant mortality, adolescent and unmarried pregnancies, low birth weight, preventable communicable diseases, and inadequate prenatal care.

In response to these troublesome trends, community-based coalitions composed of providers of health care and other support services have begun to take collective action to reduce the community barriers to primary health-care services for children and their families. Parents alone do not have the capacity to create a more accessible health-care system, because a complex group of issues influence their ability to access basic services for prenatal care, well-child health care, immunizations, and family-focused health education. Communities need to work together to create a more family-centered, family-friendly, and community-based system of primary health care. An important first step to reducing barriers and increasing accessibility is for community coalitions to obtain reliable and accurate information upon which to base their action planning.

The purpose of this study was to develop and conduct a community assessment to determine the problems and barriers associated with accessing primary health care for children and families in Chickasaw County, Iowa. The study also attempted to develop a framework and methodology by which other local coalitions can conduct community assessment.
Bronfenbrenner's (1986) ecological perspective on the interaction between the family and the environment was adapted as the framework to help explain the barriers to primary health-care services. Interactions between the family and the health-care system (the mesosystem) and the community (the exosystem) determine the degree to which parents obtain needed services for their children. Personal, financial, and structural barriers emerge from the mesosystem and exosystem as parents seek to obtain health care for their children. Additional information on barriers to health care was provided by Millman (1993) and from a review of empirical studies about accessing primary health care, prenatal care, well-child health care, immunizations, and health education. Financial barriers identified were: lack of, or inadequate health coverage; cost of programs; and unstable funding. Structural barriers were: unavailability of services in the community; transportation problems; insensitive practices for working with families; inconvenient program features; community attitudes about seeking help; and lack of interagency coordination. Personal barriers were: lack of education; low income or poverty; personal attitudes; and parental labor force participation.

The community assessment process was developed in consultation with a local coalition in Chickasaw County and involved two phases of data collection. In the first phase, existing data about the county's population, families, income and poverty levels, and infant and child health were collected and incorporated into a health and social indicator profile for the county. The local coalition inspected these data and gained a general overview of the status of Chickasaw County families. But the analyses did not provide specific information about families' experiences with accessing primary health-care services. The coalition selected a consumer survey to determine parental perceptions of the current health care system, the barriers
encountered by parents when accessing the system, and the health education needs of parents.

A telephone interview was conducted with families who had children in school and were living in Chickasaw County. The interview contained twenty-nine questions that elicited information about well-child health care, immunizations, sick or emergency child care, health insurance coverage, family-focused health education, and general information about the sample. The interview pool was selected using systematic sampling from the student directories for four public and private school districts in the county. During the four-week field period, a systematic of 164 parents was reached by telephone and 151 parents completed interviews.

The data in the health and social indicator profile were collated by population, family formation and structure, income and poverty, employment, and infant and child health status. For the consumer survey, frequencies and percentages were generated for all variables. Selected variables related to income, race, education, and geographic location were examined to determine the need for further analyses. Of these variables, only household incomes appeared to warrant additional analyses. Families with incomes of less than $20,000 per year (n=31) were compared to families whose incomes were $20,000 or more per year (n=107).

Analyses of the health and social indicator profile revealed several potential community effects that created barriers for families when obtaining health care. The rural nature of the population suggested that specialized health-care services may not have been available, that residents spent more time traveling to services, and that community attitudes toward public assistance programs possibly were negative. Families who farmed also were thought to face additional barriers to participating in special clinics and programs during peak work periods in the farming cycle. Although most families with children were headed by married couples in the county,
a growing number were being formed by unmarried women having children; these women may have a more difficult time accessing health care because of time and money constraints. In the majority of families, both parents or the only parent were heavily involved in work roles, which may have resulted in problems related to taking children to health care, caring for sick children, and participating in educational programs. About one-quarter of the county families had low incomes or were poor, suggesting that these parents had problems paying for health care and accessing support services. Health status indicators showed that the community was not providing some children and pregnant women with the proper preventive, intervention, and support services. However, the existing data did not provide specific information about families’ experiences with the primary health care system in the county and about ways to improve the system so families could have better accessibility.

The findings from the consumer survey showed that parents had generally positive perceptions about and attitudes toward the primary health care system in the county. Almost all parents reported taking their children to a family doctor for their basic health care, and the majority of the families' health care providers were located in the county. Most families with two or more children used the same doctor for all their children. But just over half of the parents took their children to the doctor for checkups when their children were not sick. Only a few respondents reported that their health care providers gave inadequate answers to their questions about their children's health and health care. Almost 87% related that they did not have any problems obtaining health care services for their children.

Twenty families experienced difficulties accessing primary health care services for their children. Families with low incomes did not appear to have more difficulty obtaining services than families with higher incomes. Most families in the
sample were involved in work and family responsibilities, which created difficulties in scheduling health care appointments, caring for sick children, and participating in health education. Contrary to the existing data, almost all parents reported immunizing their children under five years according to recommended time schedules and were obtaining immunizations from public health department clinics. Most respondents had health insurance either through a private insurer or from Medicaid and reported using a combination of personal funds and insurance to pay for health-care costs. However, the majority of families with low incomes were not utilizing at all or were under-utilizing public assistance programs for which they appeared eligible. Less than half of the families with low incomes used one or more public assistance programs. The most often reported preferences for program features were: information on stress management and raising teens; individual-learning methods rather than group classes; a moderate cost for fees and materials; and classes during the evenings.

The findings from the community assessment helped to identify four areas of the primary health-care system in the community that needed improvement. The system needs to better accommodate the needs of families where both parents or the only parent was involved in the labor force. Agencies that provide support services and the health-care system should strive to work collaboratively to urge the effective use of public assistance programs among low-income families. The local coalition should rethink how health education activities are offered in the community to better meet the needs of working parents. Health-care providers need to continue tracking health status indicators with negative trendlines and develop strategies to improve these outcomes.

Recommendations for improving the primary health care system are given for reducing the barriers for working parents, for low-income families, and to accessing
community health education. Health-care providers and clinics need to determine the feasibility of extending clinic hours to accommodate the schedules of working parents. Communication campaigns promoting the use of public assistance programs should be developed and conducted by agencies and the schools. Resource kits for parents on parenting and health-related topics need to be assembled and made available to parents at no or low cost through the library, schools, or Extension office.

Recommendations also are identified for improving the health status indicators related to immunizations, infant mortality, deaths from motor accidents, and suicides. Current immunization efforts through the public health department need to be continued and a more reliable system for tracking immunizations should be developed. The use of car safety restraints and helmets for cyclists should be promoted among parents and children. A more in-depth study of mental health services in the county, especially for children, needs to be conducted.

The importance of these findings is threefold. First, the results identify important community and system barriers in Chickasaw County that may have otherwise gone unnoticed by the local coalition. These barriers include the low utilization of public assistance programs, the large proportion of families with working parents, and traditional methods of offering family-focused health education. The findings also prevent the coalition from focusing on issues that are not as critical, such as immunization rates and financial barriers caused by lack of health insurance. Second, the findings of this study are generalizable to other rural counties in Iowa and useful in identifying community barriers to primary health care in those counties.

Finally, the findings and recommendations pointed to important ways that the primary health-care system could be changed to better accommodate the needs of
parents and to become more "family-friendly." Many service providers have tended toward changing individuals or families to accommodate the system rather than changing systems to better support families.

This community assessment applied principles of and guidelines for conducting assessments from the health promotion and program evaluation literature. The assessment was conducted to produce reliable and objective information about the community-based primary health-care system and families interaction with the system. An ecological perspective provided the theoretical basis for the assessment, focusing on the mesosystems and exosystems. Technically sound and scientifically rigorous methodology was used to collect, tabulate, and analyze data. An evaluation specialist provided technical support and assisted the coalition with planning the assessment and using the results. The assessment could have been improved by using these principles and guidelines: incorporating citizen and parental participation in the assessment process; completing an inventory of current community programs; and strengthening the group dynamics of the coalition.

An important objective of this study was to develop recommendations for conducting future community assessments by local coalitions interested in improving the well-being of children and families. The primary recommendation from this study is that local coalitions need to use an ecological perspective when conducting community assessments. The focus should not be on individual lifestyles or family issues alone but also on the community and the families' interactions with community systems. Meaningful participation by the people affected by the assessment also needs to be incorporated throughout the entire assessment process. Coalitions need to develop strategies to enhance the participation of the underserved and disenfranchised.
Another important recommendation is that local coalitions deal with internal conflict and strengthen group dynamics as they embark on the assessment process. Otherwise, the group may not have the organizational capacity to support the assessment process, conduct action planning, and carry out recommended strategies. Outside assistance should be sought from an organizational or community development specialist if the coalition is experiencing problems with lack of focus or conflict among members, or lacks the expertise in conducting assessments.

Local coalition also should determine the level of resources they have to invest in the assessment during its planning stages. At minimum, an assessment should tap existing data sources to create a "snapshot" of the community and the issue under study. If additional funds are available, a survey of key informants or a consumer/provider survey should be conducted. Ideally, a coalition should seek to do the most scientifically rigorous and comprehensive study that they can afford.

The use of outside evaluators is recommended if the coalition has funds available; evaluators can provide technically-sound methods for collecting and analyzing data that enhance the believability of the assessment in the community. But the coalition still needs to determine the purpose of an assessment and the evaluation questions the assessment intends to answer, and to work closely with the consultant throughout the assessment process. A formal agreement between an evaluator and coalition should be negotiated, written, and signed by all parties. This agreement should spell out the purpose of the assessment, evaluation questions, plan of work, timeliness, evaluation products, and the budget.

The exploratory nature of this study requires that additional studies be undertaken to further develop the recommendations for conducting community assessments and to verify the findings about barriers to primary health care for
children and families. A suggestion for a follow-up project is to use the assessment process from this study with another Healthy Foundations Coalition and to incorporate parent or citizen participation throughout the process. The purpose of the study would be to determine the influence of parental participation on the way the assessment is conducted, on the findings generated by the assessment, and on the use of the results in action planning.

Another suggestion is to conduct a community assessment using a qualitative research methodology not only to verify the validity of the findings for this study but also to determine other possible variables that influence the interaction between parents and the health-care system. It also would be important to determine the influence of this methodology on the assessment process.

Local coalitions spend a large amount of resources in terms of staff time and salaries to identify and address community problems. Replication of the community assessment process is important to ensure that they have the most effective processes and methodologies available to support their action planning.
REFERENCES


Dutton, D. B. (1982). *Children's health, access to services, and quality of care*. Stanford University: California School of Education. (NTIS No. PB83-232652)


APPENDIX A. FLOW CHART FOR HEALTHY FOUNDATIONS NEEDS ASSESSMENT PROJECT
1. **Identify steering committee of 5-8 Healthy Foundation members to advise needs assessment process.**

2. **Assess needs.**
   - a. Construct and present county profile to Healthy Foundations Committee. (October 19, 1993)
   - b. Identify health care service areas that committee wants additional information about. (October 19, 1993)
   - c. Develop telephone interview. (November - January, 1993)
   - d. Select sample of 150 families with children from school district mailing list. (January 1994)
   - e. Conduct telephone interviews. (February - March 1994)
   - f. Analyze data and prepare written and oral report. (March - May 1994)
   - g. Present oral and written reports to committee. (June 1994)

3. **Decide highest priority problem.**

4. **Develop and institute prevention plan.**

5. **Monitor and evaluate progress.**

6. **Redefine goals and operation of Healthy Foundation Committee.**

*Iowa State University completes these activities. Remaining activities are work of Healthy Foundations Committee*
APPENDIX B. BARRIERS TO HEALTH CARE FOR CHILDREN AND YOUTH IN CHICKASAW COUNTY: WHAT DO WE NEED TO KNOW?
Barriers to Health Care for Children and Youth in Chickasaw County
What Do We Need to Know?

Barriers to health care services vary by the type and nature of the service being provided. This survey will help determine which health care services the Healthy Foundations Committee needs more information about in order to reduce the system barriers.

Below are listed 15 areas of health care services that could be assessed. Members of the Healthy Foundations Committee in Chickasaw County were asked to rank the importance of each area. They placed the number "1" by the five most important service areas to examine, a "2" by the next five most important areas, and a "3" by the five least important areas. This ranking was done completed at the October 19, 1994.

The results of the ranking are given below. Those areas with the lowest values were the highest priority of the committee.

1. 13 Community health education
2. 18 Treatment for minor illness and injuries
3. 19 Emergency care
4. 18 Care for chronic illness
5. 23 Family planning
6. 19 Obstetrical/prenatal care
7. 10 Well-baby/well-child health care
8. 18 Immunizations
9. 19 Prescription drugs
10. 25 Alcohol/substance abuse prevention
11. 15 Mental health (psychiatric care and counseling)
12. 20 Domestic assault, child abuse and dating assault
13. 21 Dental care
14. 21 Vision and hearing care
15. 15 Emergency and sick child care
APPENDIX C. BARRIERS TO HEALTH CARE SERVICES: SUMMARY OF BRAINSTORMING ACTIVITY
Barriers to Health Care Services
Summary of Brainstorming Activity, October 19, 1993

List of potential barriers:

1. Not knowing what services are available.
2. Transportation: for children; unreliable transportation; lack of money for gas.
3. Not able to reach families for follow-up
4. Frequent moving
5. Not able to take off of work to get children to doctor
6. Parents work out of town
7. Working parents have time constraints
8. Lack of knowledge about healthy behaviors (e.g., breast feeding)
9. Working mothers
10. Too proud to get help
11. Single parents
12. Special needs children
13. Poverty
14. Agency hours
15. Are we doing things to perpetuate dependency?
16. Sick or emergency child care

Notes about brainstorming responses:

- Some of the barriers are personal that the committee can not address but the health care system can adapt to or change to meet the needs of people who have these barriers.

- The intent of the needs assessment is barriers erected by the health care system that can be minimized or eliminated.

Summarized by Karen Shirer, program evaluator.
APPENDIX D. BARRIERS TO HEALTH CARE SERVICES FOR CHILDREN AND FAMILIES IN CHICKASAW COUNTY: TELEPHONE INTERVIEW
INTERVIEWER: Please read the following introduction.

Hello. This is _________ calling from Iowa State University in Ames. We are conducting a survey of Chickasaw County families about the health care concerns of children.

Is this the _________ residence? (IF WRONG NUMBER: TERMINATE THE CALL WITH SOMETHING LIKE: "Sorry to have bothered you.")

How are you doing this (evening, morning or afternoon)?

Early this month a letter describing the survey was sent to your home. Did you receive it?

If Yes: PROCEED WITH THE REMAINDER OF THE INTRODUCTION.

If No: "I am sorry it did not reach you. The letter was to inform you of this call and the nature of the study." PROCEED WITH INTRODUCTION.

Your name and telephone number was selected at random from the student directory provided by the _________ school district. This survey is being conducted for the Healthy Foundations Project in Chickasaw County. You are one of 150 families from Chickasaw County selected to respond to this telephone survey. Please keep in mind that your answers will be kept in the strictest confidence. The interview should take about 10 minutes. Please feel free to ask questions at any time and you may withhold your response to any item if you wish. Okay?

Do you live in Chickasaw County?

___a. Yes, proceed with interview

___b. No, END INTERVIEW TELLING THE RESPONDENT THAT WE ARE ONLY INTERESTED IN CHICKASAW COUNTY RESIDENTS.

I will be asking questions about health care for your children and any problems you may have in meeting their health care needs. Are you the person in your family who has primary responsibility for your children's health care?

___a. Yes, proceed with interview.

___b. I share the responsibility with my children's other parent.

___c. No (IF NO, ASK TO SPEAK TO THE PERSON WHO IS. REDO INTRODUCTION.)
1. What are the ages of your children that are living with you?
   ___a. Child #1 (Youngest)
   ___b. Child #2
   ___c. Child #3
   ___d. Child #4
   ___e. Child #5
   ___f. Child #6 (Oldest)

2. Who do you take your children for health care? (CHECK ALL THAT APPLY)
   ___a. To our family doctor
   ___b. To the hospital emergency room
   ___c. To specialists
   ___d. To some other place. Please specify______________________________
   ___e. I don't know or can't say where I would go

3. Are all your children's health care providers located in Chickasaw County?
   ___a. Yes
   ___b. No. Please specify which provider and where it is located____________________
      ________________________________________________________________
      ________________________________________________________________

4. IF RESPONDENT HAS MORE THAN ONE CHILD, ASK: Does the same doctor provide care to all of your children?
   ___a. Yes
   ___b. No. (Please explain)__________________________________________
       ________________________________________________________________

5. Do you take your child to the doctor or clinic for regular health check-ups even when they are not sick?
   ___a. Yes
   ___b. No

6. Are your questions about your children's health adequately answered by your children's health care providers (such as, family doctor, physician assistant or nurse)?
   ___a. Yes
   ___b. Sometimes
   ___c. No (Please explain) __________________________________________
7. I am going to read a list of health care services that children commonly use. Which services have you been unable to get for any of your children?
   ___a. Regular checkups
   ___b. A visit to a doctor for an illness or injury
   ___c. A visit to a dentist
   ___d. New eyeglasses
   ___e. A visit to a counselor
   ___f. Prescription medicine
   ___g. Screening for my child's development
   ___h. Immunizations
   ___i. Emergency room care
   ___j. Child care
   ___k. Other ________________________________
   ___l. I've not had a problem getting health care services. (GO TO QUESTION 9)

8. Why were you not able to obtain the service? (INDICATE THE LETTER FROM QUESTION 10 WHICH APPLIES TO THE REASON FOR NOT OBTAINING THE SERVICE.)
   ___a. I didn't know where to go for the service.
   ___b. I was afraid to go to a doctor.
   ___c. I had transportation problems.
   ___d. I didn't have anyone to stay with my other children.
   ___e. It cost too much money.
   ___f. I didn't have insurance for the service.
   ___g. The type of treatment needed was not available in the county.
   ___h. I had to wait too long to get an appointment.
   ___i. I was concerned about confidentiality.
   ___j. I couldn't come during the clinic hours.
   ___k. I didn't have time to wait in the doctor's office.
   ___l. Other ________________________________

If the family has preschool children, complete questions #9 through 11. If not, go to question 12.
I have several specific questions about your preschool children's immunizations. I hope you had an opportunity to check your children's immunization records for this interview.

9. Where do your children receive immunizations?
   a. Family physician
   b. Public health department
   c. Child health clinics (e.g., WIC clinics)
   d. Other (Please specify)________________________

(PROMPT RESPONDENT IF NECESSARY FOR QUESTION 10.)

<table>
<thead>
<tr>
<th>Age</th>
<th>Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 months</td>
<td>1st Diphtheria Tetanus Pertussis (DTP)</td>
</tr>
<tr>
<td></td>
<td>1st Oral Polio Vaccine (OPV)</td>
</tr>
<tr>
<td></td>
<td>1st Haemophilus Influenza B (HIB)</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B (HB) (optional)</td>
</tr>
<tr>
<td>4 Months</td>
<td>2nd DTP, 2nd OPV, 2nd HIB, 2nd HB</td>
</tr>
<tr>
<td>6 Months</td>
<td>3rd DTP, 3rd OPV, 3rd HIB, 2nd HB</td>
</tr>
<tr>
<td>12 - 15 Months</td>
<td>1st Measles, Mumps, Rubella (MMR), 4th DTP, 4th HIB</td>
</tr>
</tbody>
</table>

10. Does your ___ year old have the recommended immunizations? (Repeat for each child under 5.)

   a. Yes (go to question 12)
   b. No (go to question 11)

   Child 1 (youngest) Age __________ Child 2 Age __________ Child 3 Age __________

11. What prevented you from getting your child immunized? (CHECK ALL THAT APPLY)
   a. I didn't have time.
   b. I am afraid of serious side effects.
   c. I don't have child care for my other children.
   d. I have a religious objection to immunizations.
   e. I don't take my child to the doctor unless he or she is sick.
   f. I didn't get shots because my child was sick.
   g. I postponed appointments because I didn't want my child to have a fever.
   h. I could not afford it.
   i. I didn't want to fill out all the paperwork
   j. Getting an immunization requires an exam first.
   k. Other, please specify ____________________
12. Are you working?
   ___ a. Full-time days
   ___ b. Full-time nights
   ___ c. Part-time days
   ___ d. Part-time nights
   ___ e. Not employed
   ___ f. Other ________________________________

13. Do you have a spouse or partner living with you who is employed?
   ___ a. Full-time days
   ___ b. Full-time nights
   ___ c. Part-time days
   ___ d. Part-time nights
   ___ e. Not employed
   ___ f. Other ________________________________

14. Does your work schedule or your spouse/partner's work schedule make it difficult for you to get your children to their health care appointments?
   ___ a. No
   ___ b. Sometimes
   ___ c. Yes
      IF YES OR SOMETIMES: Describe the kind of difficulties you have.
      ___________________________________________________________________
      ___________________________________________________________________

15. Do you have difficulty finding someone who will care for a child when he or she is sick, so that you or your spouse/partner can go to work or stay at work?
   ___ a. No
   ___ b. Sometimes
   ___ c. Yes
      IF YES OR SOMETIMES: Describe the kind of difficulties you have.
      ___________________________________________________________________
      ___________________________________________________________________
I have several questions about your family's health insurance coverage.

16. How do you pay for your family's health care? (Check all that apply.)
   __a. by health insurance
   __b. by personal funds
   __c. by Medicaid or Title 19
   __d. by some other way (please specify) ____________________________
   ____________________________

17. If you have health insurance, how are the premiums paid?
   __a. Employer pays all.
   __b. Employer pays part; I pay part.
   __c. I pay for my own health insurance.

Educational programs in the community can help parents better meet their children's health care needs.

18. I am going to read a list of possible topics that classes and other health related activities might focus on. Please indicate which topics you would be most interested in. (Check all that apply.)

   FOR RESPONDENTS WITH PRESCHOOL CHILDREN, READ ITEMS a through f.
   FOR RESPONDENTS WITH SCHOOL-AGE CHILDREN AND ADOLESCENTS, READ ITEMS f through m.
   FOR RESPONDENTS WITH BOTH PRESCHOOL AND SCHOOL-AGE CHILDREN, READ ALL ITEMS.
   __a. pregnancy questions
   __b. infant care
   __c. breast feeding your baby
   __d. raising your preschooler
   __e. selecting child care
   __f. raising your school-age child
   __g. raising your teen-ager
   __h. talking with children and teen-agers about sexuality
   __i. teen suicide and depression
   __k. dealing with stress
   __l. talking with your children and teenagers about alcohol and drug abuse
   __m. fitness, exercise and nutrition
   __n. other ____________________________
   ____________________________
19. I am going to read a list of methods that people use to learn about health care. Please indicate which methods you prefer. (CHECK ALL THAT APPLY.)

___a. books
___b. newsletter
___c. newspaper
___d. bulletin or pamphlet
___e. a class that meets once a week for 2 or more weeks
___f. one-day workshop
___g. individual consultation
___h. audio cassettes
___i. radio
___j. videocassette tapes
___k. recorded telephone service
___l. television
___m. other (please specify)_________________________________________

20. If classes and other health related activities you were interested in required a fee, what is the most you would be willing to pay for the class or activity?

$________ (indicate dollar amount)

21. Given your work and family responsibilities, what times are you available for classes and activities?

___a. morning
___b. lunch time
___c. afternoon
___d. late afternoon
___e. evening
___f. by appointment
___g. weekends
___h. other_________________________________________
22. How do you find out about health-related programs offered by local organizations?
   ___a. newspaper
   ___b. The Shopper
   ___c. radio
   ___d. at the doctor's office or hospital
   ___e. at the library
   ___f. from the Extension office's newsletter
   ___g. word of mouth
   ___h. my children's school
   ___i. a brochure mailed to my home
   ___j. other, please specify ____________________________

23. Why would you be unable or unwilling to participate in health related classes and activities? (CHECK ALL THAT APPLY.)
   ___a. inflexible work schedule
   ___b. not enough time
   ___c. too many other demands to make health a priority right now
   ___d. need dependent care (child or elder)
   ___e. other commitments
   ___f. too far to drive
   ___g. other ____________________________

Now I would like to ask some questions about you and your family. This information is used for research purposes and is kept strictly confidential.

24. What is your approximate take-home pay received by all members of your household during 1993? Include wages, dividends and interest, business or farm income, and child support payments. (MARK APPROPRIATE RANGE.)
   ___a. less than $10,000 each year
   ___b. $10,000 to $19,999
   ___c. $20,000 to $29,999
   ___d. $30,000 to $39,999
   ___e. $40,000 to $49,999
   ___f. $50,000 and over
25. Does anyone in your household currently receive public assistance?
   _____a. Yes
   _____b. No

   If yes, what kind of assistance?
   _____a. Aid to Families with Dependent Children (AFDC)
   _____b. General Assistance from the County Relief Office
   _____c. Food stamps
   _____d. Supplemental Security Income (SSI)
   _____e. Medicaid
   _____f. Free or reduced-price school meals
   _____g. Subsidized child care
   _____h. Women, Infant and Children program

26. What is the highest level of education you have achieved?
   _____a. Grade School
   _____b. Some High School
   _____c. High School Graduate, GED
   _____d. Technical School/Associate Degree
   _____e. Some College
   _____f. College Graduate
   _____g. Masters or Doctorate degree

27. Where do you live?
   _____a. in town (please specify ________________)
   _____b. on a farm
   _____c. rural, non-farm

28. Indicate the respondent's gender.
   _____a. male
   _____b. female

29. What is your marital status?
   _____a. married
   _____b. not married

THANK YOU FOR YOUR ASSISTANCE. WE GREATLY APPRECIATE HAVING THE OPPORTUNITY TO TALK WITH YOU.
APPENDIX E. PREINTERVIEW CONTACT LETTER
February 1, 1994

Name
address

Dear :

During the month of February one of our interviewers will be calling your home in connection with a survey of Chickasaw County families about the health care concerns of children. This survey is being conducted for the Healthy Foundations Project in Chickasaw County by Iowa State University.

Your name and telephone number were randomly selected from your children's school district directory. We are writing this letter because some individuals prefer knowing in advance about a request for an interview. When our interviewer in Ames, Iowa calls he or she will ask to speak to the person in your family who has primary responsibility for your children's health care. The interviewer will ask you or another member of your household to provide answers to survey questions over the phone.

In addition, the survey asks several questions about children's immunizations. If you have one or more preschool children, please check their immunization records. We are interested in knowing if your children up to age five have all the immunizations they need and where they receive their immunizations.

The interview should last only 10 to 15 minutes. Naturally, all your responses, or those of another member of your household, will be confidential, and your participation is strictly voluntary. Your name or any other identifying information will not appear in the final report provided to the Healthy Foundations Project. We would be glad to provide you with a summary report of our findings, if you request it.

Your participation will be greatly appreciated since this is a very important study. If you have any questions, please call me at 515/294-7501.

Sincerely,

Karen Shirer
Project Director
**Recommended Immunization Schedule**

The following is a list of when immunizations should be given to children who are under the age of 24 months.

<table>
<thead>
<tr>
<th>Age</th>
<th>Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 months</td>
<td>1st Diphtheria Tetanus Pertussis (DTP)</td>
</tr>
<tr>
<td></td>
<td>1st Oral Polio Vaccine (OPV)</td>
</tr>
<tr>
<td></td>
<td>1st Haemophilus Influenza B (HIB)</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B (HB) (optional)</td>
</tr>
<tr>
<td>4 Months</td>
<td>2nd DTP</td>
</tr>
<tr>
<td></td>
<td>2nd OPV</td>
</tr>
<tr>
<td></td>
<td>2nd HIB</td>
</tr>
<tr>
<td></td>
<td>2nd HB</td>
</tr>
<tr>
<td>6 Months</td>
<td>3rd DTP</td>
</tr>
<tr>
<td></td>
<td>3rd OPV</td>
</tr>
<tr>
<td></td>
<td>3rd HIB</td>
</tr>
<tr>
<td></td>
<td>2nd HB</td>
</tr>
<tr>
<td>12 - 15 Months</td>
<td>1st Measles, Mumps, Rubella (MMR)</td>
</tr>
<tr>
<td></td>
<td>4th DTP</td>
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<tr>
<td></td>
<td>4th HIB</td>
</tr>
</tbody>
</table>