

## REVIEW ARTICLE

# School Health Centers and Primary Care for Adolescents: A Review of the Literature

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## Introduction

In 1991, the Office of Technology Assessment concluded that school-based health centers (SBHCs) are "the most promising recent innovation to address the health and related needs of adolescents" (1). Numerous researchers and government studies report that these centers increase adolescents' access to health services (1-5). Although the past 25 years have seen a rapid growth in school health centers (SHCs), from the first in 1970 (6) to a reported 623 sites nationally in fall 1994 (7), these centers are still not operating extensively in the United States. Data from the Center for Population Options (2) reveal that 418 SBHCs operated during the 1991-1992 school year. Of these, 330 were in high schools, providing services to 270,000 students, or approximately 2% of the estimated 13.2 million U.S. students enrolled in grades 9-12 during the same year (8). National health care reform proposals, including legislation proposed by President Clinton and Senator Kennedy in 1994, supported an expanded role for SHCs as an integral

part of an improved health care system of services for children and adolescents (9,10). Direct federal funding for such centers became available in 1994 from the Bureau of Primary Care and the Maternal Child Health Bureau, HRSA, without enactment of proposed health care reform legislation. In 1994, \$11.9 million in federal Maternal and Child Health (MCH) Block Grant funds and \$25.2 million in state revenues were used to support SBHCs (8).

School-based health centers are located in schools or on school grounds. School-linked health centers (SLHCs) are located near the school and have a formal relationship with the school. Effective SLHCs often station health center staff at the school at specified times each week (11). SHCs include both SBHCs and SLHCs. Most national research studies focus on SBHCs alone, as opposed to SLHCs. The term "school health centers" was chosen for this review because, when possible, data on both SBHCs and SLHCs are included. Most often, SHCs serve only the children and adolescents enrolled in school, but some extend services to family members, students from other schools, or the larger community (2).

Early SHCs were pediatric (medical) models of care which used nurse practitioners as clinic leaders, managers, and in expanded clinical roles (i.e., primary care) (12). In addition to providing traditional school health services such as health screening, referral, and health education/counseling, SHCs provide medical diagnosis and treatment services. Most SHCs strive to provide comprehensive primary care health services, although several SHCs have focused on reproductive health care (11,13). In recent years, the SHC model has encompassed an even broader

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range of medical services, including mental health care, and has created linkages with community-based organizations serving adolescents (14,15). SHCs are increasingly identified as an important nexus for a variety of innovative health programming efforts (14).

Considerable diversity exists in the range of services, staffing, and organization provided in SHCs. To promote their continued development, it is useful to provide criteria to guide the processes of planning, implementing, expanding, and measuring the impact of services provided. Prior attempts to evaluate SHCs often have focused on health outcomes such as teen pregnancy and health behaviors of adolescents enrolled in the centers. More recent health policy efforts have assessed the degree to which SHCs provide comprehensive or "essential" services, and have focused on defining "comprehensiveness" of SHC services (14,16,17).

The purpose of this review was to assist policy makers, program managers, SHC clinicians, and researchers in assessing the ability of SHCs to meet the primary care needs of adolescents. If SHCs are to become an important part of the primary care system, they should be judged by the same standards as other primary care systems. Evaluating the ability of SHCs to provide primary health care services of high quality to their target population is essential. The Maternal and Child Health Bureau (18) defines primary care as follows:

Primary care for children and adolescents can be defined as personal health care delivered in the context of family, culture and community whose range of services meets all but the most uncommon health needs of the individuals and families being served. In addition, primary care is the integration of services that promote and preserve health; prevent disease, injury and dysfunction; and provide a regular source of care for acute and chronic illnesses and disabilities. Primary care serves as the usual entry point into the larger health services system and takes responsibility for assuring the coordination of health services with other human services. The primary care provider incorporates community needs, risks, strengths, resources, and cultures into clinical practice. The primary care provider shares with the family an ongoing responsibility for health care.

This review uses Starfield's model of primary care (19) as a conceptual framework to begin to assess the strengths and weaknesses of SHCs as primary care sites for adolescents. Research findings on SHCs are summarized with respect to the seven defining attributes of primary care: first contact, continuous,

comprehensive, coordinated, community-oriented, family-centered, and culturally competent care (Table 1).

### *First Contact Care*

School health centers eliminate many access barriers faced by adolescents. SHCs are conveniently located on or near school campuses. They often provide services free of charge or at minimal charge and address age-specific and cultural needs, including a variety of physical, emotional, and social health issues (1,3). SHCs are usually located in underserved, low-income communities and often reach populations that are especially vulnerable to health care problems. During 1991-1992, 39% of students using SHCs were uninsured and 28% were covered by Medicaid, compared with national figures which show that 17% of adolescents are uninsured and 15% receive Medical Assistance (2,20).

In terms of use, SHCs successfully deliver health care to needy youth (21). Between 58 and 75% of students eligible to receive services at SHCs enroll (2,22-24). A total of 72% of those enrolled actually use SHC services (2). Students with certain health problems are more likely to join and use SHCs (25-28). In a study of Baltimore SHCs, factors independently predicting enrollment in SHCs included having one more chronic health conditions, taking one or more special education classes, having best friends who were enrolled, and being a member of a team or club (27).

School health centers are a sole source of care for students in some communities (6) but clearly supplement care for other students (29). Many students served by an SHC have no other regular source of care and would otherwise rely on a local emergency room for their medical care (30,31). In New York City for example, 38% of students in public schools with SHCs reported they would not have sought help for a problem if the center had not existed (32). The evaluation of the national Robert Wood Johnson (RWJ) Foundation 1987 demonstration project found that SHCs supplemented community care and also increased the overall frequency of visits (29). Youths enrolled in the SHCs were significantly more likely to have visited a health care provider during their senior year than their national counterparts (71% vs. 63%) (29).

Centers often must restrict their hours of operation owing to tight budgets, resulting in access problems for youth (3,33). Many centers are not open during evening hours, weekends, or school vacations, limiting both the provision of first contact and

**Table 1. Primary Care Attributes**


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**First contact care:** "First contact" care is the usual entry point into the expanded health care system. The primary care provider is responsible for guiding the client to the most appropriate source of care. Within the system, the provider is contacted for all nonreferred health care needs so that an informed judgment is made and guidance is given regarding the most appropriate source of care.

**Continuous care:** "Continuous" care refers to the longitudinal use of a regular source of care over time, regardless of the presence or absence of disease or injury. It involves a patient-provider relationship based on established trust and knowledge of the patient and his or her family. Within the system, a "health care home" is established for each child and adolescent. This home is the repository of a unified record of all health care that is provided.

**Comprehensive care:** "Comprehensive" care provides a continuum of essential personal health services that promote and preserve health, prevent disease, injury, and dysfunction, as well as provide care for acute and chronic illnesses and disabilities. Primary care is inclusive of the many dimensions of health beyond physical components, including the social, environmental, spiritual, developmental, and intellectual aspects of health. It directly provides services needed by a substantial proportion of the population and arranges referral for services to meet needs that are relatively uncommon or rare in that population.

**Coordinated care:** "Coordinated" care is the linking of health care events and services. It requires the establishment of mechanisms to transfer information and the incorporation of that information into the plan of health care. Primary care has the responsibility and obligation to transfer information to and receive it from other resources that may be involved in the care of children and adolescents; and, to lead in the development and implementation of an appropriate plan for management and prevention. Coordination ensures that the more narrowly focused perspectives of the specialists are combined into a holistic view.

**Community-oriented care:** "Community-oriented" care takes into account the needs of a defined population. Delivery of primary care services is based on an understanding of community needs and the integration of a population perspective into clinical practice. Primary care providers are responsible for supporting public health roles and activities through epidemiologic awareness and reporting of specific health problems identified in the course of delivering personal health care services. Primary care providers contribute to and participate in community diagnosis, health surveillance, monitoring, and evaluation conducted as a routine function of public health agencies. Community-oriented care assures that the views of community members are incorporated into decisions involving policies, priorities, and plans related to the delivery of primary care.

**Family-centered care:** "Family-centered" care recognizes that the family is the major participant in the assessment and treatment of a child or adolescent. As such, families have the right and responsibility to participate individually and collectively in determining and satisfying the health care needs of their children and, in most instances, adolescents. Being family centered means that policies regarding access, availability, and flexibility take into consideration the various structures and functions of families in the community being served. Finally, it means that primary care needs to understand the nature, role, and impact of a child's health, illness, disability, or injury in terms of the family's structure, function, and dynamics.

**Culturally competent care:** "Culturally competent" care incorporates cultural differences into the provision of health care. Services should be acceptable to all of the groups of people in the community who may be distinguished by common values, language, world view, heritage, and institutions or beliefs about health and disease. A mechanism should be in place to represent the views of these groups and incorporate them into decisions involving policies, priorities and plans related to the delivery of services.

**Source:** Maternal and Child Health Bureau. Primary care for children and adolescents: Definition and attributes. Rockville, MD, U.S. Department of Health and Human Services, Health Resources and Services Administration, 1994. (18)

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continuous care (1). McKinney and Peak (2) found that although 85% of SBHCs were open Monday through Friday, only 3% provided services on Saturday, and slightly over half (55%) of centers were open during the summer. Seventy percent of these centers try to refer students to some source of after-hours or emergency care.

### *Continuous Care*

More than 86% of visits to the RWJ School-Based Adolescent Health Care Program were by returning patients (unpublished data, 1994). Those students who visit a clinic  $\geq 15$  times/year have been found to have a significantly higher percentage of mental

health-related visits and demonstrate more high-risk behaviors such as alcohol use, sexual activity, and family and peer relationship problems than users of those same clinics who visit three times a year or less often (34), suggesting that continuous care is reaching those most in need.

The ability of SHCs to provide continuous care is frequently threatened by turnover of both staff and students. SHCs often lack salaries competitive with other health care settings, such as hospitals or HMOs (3). Centers sometimes fill gaps in staffing by serving as rotation sites for physicians from nearby medical schools (35). Similarly, midlevel health care professionals who are usually the primary staff members of SHCs are in short supply throughout the United

States (3,9). It is not surprising, therefore, that SHCs with stable sources of funding and trained personnel are more successful operating as "health care homes" for adolescents (4,6,29,35).

One intrinsic limitation of the model of the school-based health center is their inability to serve adolescents who transfer, dropout, or do not attend school. Kirby et al. (35) found "most clinics serve only their student population, but some are also open to dropouts (16%), children of students (15%), other family members of students (11%), and adolescents in the broader community (9%)." This limitation may be ameliorated as SHCs become more integrated with community systems of care (35).

### Comprehensive Care

Elements of essential school health services and service components have been described extensively (1,4,16,17,36,37). A survey of 202 SHCs found that the majority provide a broad spectrum of services to meet the physical, mental, and social health needs of adolescents (Table 2).

The reasons adolescents visit school health centers are diverse. Among 24 SHCs funded by the RWJ Foundation during the 1991–1992 school year, 29% of visits were for acute illness or injury; 18% were for mental health problems; 15% were for physical examinations; 18% were for immunizations, nutrition counseling, and dental care; 10% were for reproductive health, sexually transmitted diseases, and family planning; 6% were for chronic disease management; and 4% were for skin problems (38). A study of New York City SHCs found that 44% of visits were for acute or chronic medical problems and 17% were for gynecologic or sexuality related issues (39). In Baltimore City, Borenstein found the most common diagnoses for students visiting high school SHCs to be for reproductive health needs or problems (28%) and mental health issues (12%), whereas in middle school SHCs 30% of all diagnoses were for mental health problems and 11% were for reproductive health problems (40). Millstein found that mental health problems are often discovered during SHC visits by adolescents who attend for other complaints (31). Although SHCs appear able to provide a wide range of services, adequacy of services has not been evaluated in relationship to the actual needs of the populations served.

Many SHCs are unable to provide a full range of reproductive health care services on-site because of political, community, or school opposition. Although

**Table 2.** Services Provided in SHCs Serving Secondary School Students, 1991–1992 (%)

	School-based Health Centers	School-linked Health Centers
<b>Medical services</b>	(n = 123)	(n = 74)
Injury treatment	95.9*	86.5
Physicals	89.4	83.8
Immunizations	82.9	69.3 <sup>†</sup>
Sports physicals	82.8*	80.0 <sup>†</sup>
Laboratory tests	81.8*	78.4
Prescriptions	81.1	80.0
Pregnancy tests	78.0	67.6
Chronic illness management	69.9	70.3
Medications dispensed	68.3	60.3 <sup>‡</sup>
Gynecologic exams	64.2	52.7
Human immunodeficiency virus tests	29.3	35.1
Prenatal care	20.3	31.1
Pediatric care of infants	14.9 <sup>§</sup>	28.4
Dental Services	13.8	10.7 <sup>†</sup>
<b>Reproductive health and family planning services</b>	(n = 105)	(n = 64)
Family planning counseling	81.9	74.2 <sup>  </sup>
Diagnosis/treatment of sexually transmitted diseases	65.0	56.8
Follow-up for birth control users	63.9	61.9 <sup>¶</sup>
Prescriptions for birth control methods	35.2	39.7 <sup>¶</sup>
Diaphragm fitting and prescriptions	30.5	25.0
Condoms	29.5	31.3
Oral contraceptives	15.5 <sup>#</sup>	26.6
Norplant insertions	1.0	6.3
<b>Other services</b>	(n = 194)	(n = 194)
Nutrition education	95.9*	94.3**
Substance abuse health education	89.9 <sup>††</sup>	86.8 <sup>‡‡</sup>
Relationship counseling	89.2	77.8
Family counseling	74.8 <sup>§§</sup>	61.1 <sup>§§</sup>
Substance abuse counseling	76.5	58.9
Psychological counseling	64.7 <sup>   </sup>	46.5 <sup>   </sup>

\* n = 122; † n = 75; ‡ n = 73; § n = 121; || n = 66; ¶ n = 63; # n = 103; \*\* n = 70; †† n = 119; ‡‡ n = 68; §§ n = 193; ||| n = 192. Source: McKinney DH, Peak GL. School-based and school-linked health centers: Update 1993. Washington, DC, Center for Population Options, 1994 (2).

more than three quarters of SHCs offer counseling for birth control, only 37% offer prescriptions for oral contraceptives, 30% offer condoms, 20% offer oral contraceptives, and only 3% offer Norplant<sup>®</sup> (2).

The scope of services provided by an SHC is often a function of funding, provider availability, and politics. According to Brellocks and Fothergill (17), the "two primary reasons for variations in service capacity are: 1) different levels of community sup-

port for provision of reproductive health services at school sites, and 2) the amount of dollars that are available to support the program."

Provider availability may predict the scope of services offered, especially among SHCs in rural areas (33). According to McKinney and Peak, nurse practitioners and physicians' assistants were much more likely to be employed as full-time staff members among SHCs in urban areas than in rural areas (2). Similarly, nurse practitioners and physicians assistants were much more likely to be employed full-time among SHCs which serve combined primary and secondary grades and which were in operation for at least 5-9 years. Presence of full-time or part-time staff may also reflect demand for services (i.e., the number of students enrolled in the school or seeking services).

### *Coordinated Care*

Coordination of care is generally a challenge for all primary care providers and is not unique to school health centers or the adolescent population (19). Coordination is hindered when patients use multiple, unconnected providers. Given their proximity to students, SHCs are an excellent source of initial and follow-up care; however, their ability to coordinate with other community providers (33) is less well established.

Hyche-Williams et al. (41) found that 90% of SHCs surveyed by the Center for Population Options are able to refer their students to other community health care services. Only about 50% of students referred by RWJ-supported SHCs are actually seen by the referred-to provider, largely because of their unwillingness to treat uninsured youth (42,43). Marks and Marzke (44) identified several difficulties that arise when referring adolescents from SHCs to other sources of care. These include adolescents' difficulty in obtaining transportation, SHCs' difficulty receiving information back from community providers on laboratory results or diagnoses, and lack of availability of providers in poor and underserved communities.

A number of school health centers have created strategies to enhance coordination. For example, many SHCs in the RWJ School-Based Adolescent Health Care Program operate as satellite offices of larger medical institutions in the community, a factor critical to the success of coordinating referrals for clients who need outside care (38). Many states have recently adopted guidelines for SHCs which set

standards for referral and linkage to community-based services to ensure a continuum of care beyond the SHCs' scope of services and hours of operation (7). Other SHCs use data management information systems to improve patient record keeping. For example, the Hartford Primary Care Consortium has implemented a city-wide computerized and linked clinical information system among hospital outpatient departments, community health centers, schools, and individual practices (45). School Health Online, an information management program developed at the University of Colorado, collects data on health indicators, use, referral and follow-up, and program outcomes (15).

Managed care presents a different set of challenges to SHCs. To date, little coordination exists between SHCs and managed care organizations (46). Within a single SHC, students may be enrolled in one of many managed care plans. The General Accounting Office (3) reported that "managed care providers are often reluctant to incorporate school-based health centers into their networks because of concern that they lack control over the care provided." In addition, capitation rates may pose financial risks to both managed care organizations and SBHCs, and reimbursement arrangements may be complicated by the need to "split the rates" when other providers or facilities provide the backup for 24-h coverage (3). Legal issues may also create barriers to coordination between SHCs and managed care organizations. For example, SHCs may not meet managed care provider practice guidelines, and managed care providers are legally accountable for patient care provided within their network (46).

Some SHC programs have successfully coordinated services with managed care organizations. Some managed care organizations offer SHCs as primary care sites (7). Zimmerman and Reif (47) reported a successful integration of SHCs into managed care in St. Paul, Minnesota. This integration assures confidentiality of both the billing statements and clinical data of students who are referred for care. The St. Paul model also uses protocols and criteria for on-site and referral care, including a tracking system that health plans can use to review referrals (47). Several state health departments are working to develop relationships between SHCs and managed care organizations (7). In some states, SHCs have joined managed care provider networks and share in the primary care capitation payments; in others, SHCs have established reimbursement mechanisms for specific services to a managed care provider's patient (7). In Rhode Island, Oregon, and

Connecticut, state health care financing administrations have required service and financial coordination between SHCs and managed care plans (7).

### *Community-Oriented Care*

School health centers are often most successful when they closely involve the community in planning and advising. Most SHCs have advisory boards that include parents, members from local health departments, private sector organizations, and youth service organizations (31,33). A process evaluation of SHCs supported by the RWJ Foundation (44) concluded that "Foundation-imposed requirements [for community involvement] proved to be good methods for managing controversy. . . . Probably the most successful strategy was to involve parents of students in the affected schools in the planning process and ask them to act as advocates." The Foundation also required that each community form an advisory committee to guide the planning effort, and that students obtain a signed consent form from their parents before receiving services. Rienzo and Button's investigation of five sites that faced SHC opposition also found that the strategies considered most important (by proponents of school health) in gaining public support included a "broad-based, quality needs assessment," public education (through meetings and structured hearings), and involving key community leaders, medical providers, school personnel, parents, and students (48).

Community perspective and participation are particularly important to the process of developing a needs assessment. The Center for Population Options (49) described community needs assessment, including comparison of local morbidity and mortality with state and national averages, identification of local health service providers, and identification of service gaps and barriers, as "one of the most crucial components in designing a [SHC]."

### *Family-Centered Care*

School health centers are unique in that they aim to meet the health care needs of children and adolescents without disrupting other family members. SHCs eliminate the need for parents to leave work or to provide transportation. Because they do not provide care to other family members, however, there is decreased opportunity to gather information from family members when assessing health needs or developing strategies for management.

Limited data suggest that SHCs and the services they provide are very popular with parents and families. Despite significant controversy encountered by SHCs, most parents and communities strongly support them, especially those closely involved in the planning of the centers (23,50,51).

School health centers are challenged to respect both the confidentiality of their clients and the rights of parents to be informed of a child or adolescent's well-being. State laws, supported in Supreme Court decisions, recognized the developing need for adolescent autonomy in receiving health care services (52). Hyche-Williams and Waszak (41) reported that most SHCs require written parental consent before they accept students as patients. Nevertheless, law permitting, many centers offer emergency services (57%), family planning (43%), and treatment for sexually transmitted diseases (47%) without parental consent. Consent forms used in the RWJ School-Based Adolescent Health Care Program (38) allow parents to exclude any services they do not want their children to receive; however, < 10% of parents did so.

Many SHCs find mechanisms for involving families, in addition to their membership on advisory boards. The Denver School-Based Health Centers distribute parent newsletters, organize teen theater troupes that introduce difficult topics to parents through skits and discussion, and hold seminars on family communication (38). Telephone contact with parents which may occur around the need for medical treatment and referral care can be an important way of improving care and building support with individual parents (50).

### *Culturally Competent Care*

School health centers provide care for culturally diverse populations. During the 1992-1993 school year, racial and ethnic minority students accounted for 86% of the visits to the 24 SHCs supported by the School-Based Adolescent Health Care Program (28). A 1993 survey by McKinney and Peak (2) found that 44% of users of centers surveyed were African-American, 31% were white, 19% were Hispanic, 3% were Asian/Pacific Islander, and 2% were Native American, a racial distribution similar to that of the schools' population.

A shortage of bilingual/bicultural nurse practitioners and mental health professionals exists in many communities (33). Unfortunately, few studies have assessed the cultural competence of SHCs. Further study in this critical area is needed.

### *Summary and Implications for MCH Research and Policy and Program Development*

This assessment of the potential strengths and weaknesses of SHCs suggests that they can play an increasingly vital role in the delivery of primary care to adolescents. SHCs have been shown to reduce many of the access barriers to health care faced by adolescents, especially those who are medically underserved, of low income, and in high-risk situations. SHCs provide a variety of services to adolescents, aiming to meet multiple physical, mental, and social needs. In addition, as administrators and staff of SHCs work to develop new programmatic responses to the changing health care environment, some are developing mechanisms, such as data management systems, to improve coordination with other community primary care providers. SHCs, through various planning, governance, and programmatic initiatives, also have evolved into unique community-based service providers. However, as described here, SHCs are limited in their ability to function as health care homes to adolescents because of limited operating hours, staff turnover, and problems coordinating care with other community providers.

An urgent need remains to review both the models for providing SBHCs and the research designs that can be used to evaluate them. A primary care perspective provides only one framework to examine SHCs. Because SHCs have diverse functions—as focal points for expanded health activities in schools, as multiservice centers incorporating social services, education, delinquency prevention, and so forth, and as parts of targeted health promotion interventions—it is possible to pursue other frameworks to analyze their effects on health, social, educational, and economic outcomes.

As evidenced by the sources used in this review, outcome evaluation data, which might present a case for the effectiveness of these centers, are limited (1,53). Consequently, researchers have had difficulties attempting to uncover the effects of SHCs. Moreover, it is not clear what outcomes should be expected from these centers. Although reductions in school absenteeism, alcohol consumption, smoking, sexual activity, and pregnancy have been found in some schools with SHCs, these findings have not been consistent or well researched (1). Prior evaluation research also has suffered from a variety of methodologic limitations (29,54–56). These include lack of baseline data, use of inappropriate or inadequate comparison groups, failure to consider self-selection in enrollment and use of health centers,

substitution of the SHC for community-based providers, inadequate sample size, failure to consider the prevalence of existing conditions or problem behaviors, inadequate conceptual frameworks, and poor fit between intervention intent and outcome measures. Quasiexperimental, time-series designs may have serious limitations given small effect sizes, low to moderate prevalence, and rapid turnover in the student body. Future evaluation efforts should consider longitudinal cohort designs (although these may suffer from rapid turnover as well) and randomized designs where possible and appropriate (55).

Debates about state and national health reform have generated increased public scrutiny about the accessibility and quality of health care services and, like the other players in the delivery system, SHCs should be evaluated according to objective criteria. A comparison of SHCs with other primary care providers to adolescents is beyond the scope of this review. In an age of managed care and competing primary care systems, such comparisons will be forthcoming. Future evaluation efforts will require a sizable commitment of resources to support the development of data collection, or management information systems, to guide health policy and program planning. These data should specifically describe the needs and characteristics of the adolescents and their families, including measures of health status and health outcomes, service use, reimbursement methods, and indicators to describe the extent to which SHCs fulfill the attributes of primary care.

The policy and research questions included in Table 3 represent only a sample of the criteria that may be developed to evaluate the role that SHCs may play in a primary health care system. Primary health care facilities are rarely able to serve the diverse health care needs of adolescents independently. Therefore, the success of SHCs will rely ultimately on their ability to establish a unique and sustainable niche within the larger health care delivery system. Communities that have successfully implemented SHCs are often those which have demonstrated the ability to maximize a stable mix of support from both public and private sources, ranging from state and federal grants, foundation support, and reimbursement from private insurance and Medicaid. With the emergence of managed care networks, especially among those serving Medicaid populations, it is particularly important that policy makers facilitate productive relationships between SHCs and the financiers of health care.

**Table 3. Research Questions for Primary Care Provided in School Health Centers (SHCs)****First contact care**

- Does the availability of an SHC enhance adolescents' entry into the health care system?
- What displacement effects occur between community-based and school-based primary care?
- Does the use of SHCs reduce hospitalization and the use of emergency rooms by adolescents?
- How do student attitudes influence enrollment and use of the clinic?
- Do SHCs improve access to health care for adolescents with specific health problems? (Are children with specific health problems/conditions more likely to receive care?)

**Continuous care**

- What policies can be enacted to enhance the ability of SHCs to function appropriately as "health care homes"?
- How does the quality and continuity of care provided in SHCs compare to care provided in community-based settings?
- How does the continuity of care provided in SHCs effect health outcomes?
- Is compliance with medication or follow-up care improved in SHCs?
- Is the management of chronic illness enhanced in SHCs?

**Comprehensive care**

- What services are considered "essential" by adolescents, their families, and health care providers?
- To what extent does the SHC provide those essential services?
- How does failure to provide essential services (i.e., reproductive health) by SHCs compromise health care and/or adolescent willingness to use clinics?
- Do comprehensive SHC programs or do targeted SHC programs have the greatest impact on specific health outcomes?
- In what ways do SHCs influence health promotion among adolescents; for example, is contraceptive continuation improved among youth served by SHCs?

**Coordinated care**

- What services are better provided on-site in SHC and which are better provided by referral?
- How do SHCs develop adequate referral systems with other community health care and social service providers?
- Which financial and/or organization models of SHC will best facilitate coordinated care?
- How will SHC operate in the expanding system of managed primary care?
- What federal, state, or local incentives will promote coordination between SHC and community-based managed care organizations?

**Family-centered care**

- How can SHCs best foster appropriate family involvement in the health care of their adolescents?
- How can SHCs enhance family support for adolescent health promotion and disease prevention?
- How do parents feel about SHCs?

**Community-oriented care**

- In what manner does the SHC assess community needs and priorities?
- How and to what extent does the SHC involve the community in its planning efforts?

**Culturally competent care**

- What ethnic differences exist in acceptance and use of clinics?
- How well do SHCs address cultural differences in providing health care services? Are there significant differences between SHCs and other parts of the health care delivery system?
- What outreach strategies are most appropriate to serve youth from various racial, ethnic, and cultural backgrounds?

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