SCHOOL-BASED PRIMARY CARE: A CLINIC PLAN FOR BIG TIMBER, MONTANA

by

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Abstract

Children and adolescents have complex health care needs that require a comprehensive approach to health care delivery. School-based primary care clinics are successful in providing comprehensive youth health care services. There is only one school-based clinic in Montana. Youths in Montana have health care needs similar to other youths across the country. The lack of health care resources and geographical isolation, characteristic of many rural Montana areas, complicates the ability to adequately address the comprehensive health care needs of children and adolescents.

This paper presents a school-based primary care clinic plan for the school population of Big Timber, a city of 1,500, located in rural Montana. The plan is based on the Community Oriented Primary Care (COPC) process. The community is involved in the plan through the development of a planning task force. Areas addressed in the plan include identification of a sponsoring agency, utilization of a nurse practitioner as the primary health care provider, identification of clinic services, discussion of regulations, estimation of clinic utilization, budget estimation, budget funding, a clinic floor plan, consent issues, and, policy and procedure development. A plan for evaluating the clinic, including quality assurance, is presented.

Recommendations are made that school-based clinics be considered as a means to deliver health care services to youth in sparsely populated areas, such as Montana. Nurse practitioners are recommended as the most appropriate primary care providers for such clinics.

Chapter 1

STATEMENT OF PROJECT PURPOSE

The purpose of this project is to present a plan for the development of a school-based clinic in Big Timber, Montana, utilizing a nurse practitioner as the primary care provider. The plan is directed at the delivery of primary care services to all children in the public school system, which includes a grade school (Kindergarten-8th grade) with a population of 344 students, and a high school (grades 9-12) with a population of 190 students.

Big Timber faces new challenges within the next four years with the seemingly inevitable opening of a platinum and palladium mine in the mountains to the south of the town. The impact of the mine is expected to double the population of the city of Big Timber from the current estimated population of 1,500, to an estimated population of 3,000 when the mine is operating at maximum capacity. This increase is expected to result in an additional 195 grade school students and 95 high school students attending schools in Big Timber. Plans are in place for the Stillwater Mining Company to contribute funds to construct a middle school, and remodel and expand the grade school and high school (Shurtliff, 1995).

Now is a good time to consider the benefits of school-based primary care in the Big Timber schools. Many residents of Big Timber perceive their community to be facing great change in the future. This perception lends itself to more active involvement and concern of community members. There may be less opposition to new ideas, as some

new ideas may be perceived as necessary and possibly even desirable (Lewin, 1948).

This paper will present a basic plan for school-based primary care in Big Timber. The plan will focus on the current school population and resources as they now exist, with the understanding that the resources within the community may change in the future, requiring that the plan be adapted to reflect those changes. Components of the plan are based on the Community Oriented Primary Care (COPC) process, and include: (a) population definition, (b) population assessment, (c) program development, and (d) program monitoring and evaluation (Nutting, 1986).

Background of the Project

Health Care Needs of Adolescents and Children

Many significant health problems are the result of behaviors and health habits established during childhood and adolescence. Childhood is a time of emotional and physical development. Early childhood screening and detection of emotional disorders, learning disorders, developmental delays, visual impairment, speech impairment, and chronic illness is crucial to optimal achievement in school, healthy physical development, the development of a healthy self-esteem, and the prevention of serious complications (U.S. Department of Health and Human Services [USDHHS], 1991).

Adolescence is also a period of major development. Transition from childhood to adulthood takes place at this time. For many teenagers, adolescence is a time of great confusion. The nature of the relationships with other family members, especially parents, undergoes a process of change as the adolescent attempts to achieve independence.

Relationships with peers become increasingly more important in influencing behavior. Adjusting to these changing relationships can be very stressful for the adolescent and family members.

Because of the stress related to the developmental tasks of adolescence, many teenagers are at risk for depression, suicide, loneliness, and psychological disorders, such as anorexia and bullemia. Many adolescents feel invulnerable during this period and demonstrate risk-taking behavior such as unprotected sexual activity, which may result in undesired pregnancy or sexually transmitted disease. Smoking, substance abuse, and driving a motor vehicle too fast, often under the influence of drugs and/or alcohol, are other risk-taking behaviors demonstrated by youths (Kirby, 1985).

With the onset of adolescence also comes puberty and other potential problems, such as acne, growth disorders, and menstruation. These physical changes require adjustment to an altered body image. During this period, adolescents often require support from others surrounding them, such as family members, peers, health care providers and members of the school system (Dougherty et al., 1992).

Current Health Status of Children and Adolescents

Clearly, given the complexity of their health care needs, children and adolescents require comprehensive health care that extends beyond treatment of acute medical problems. How healthy are the children and adolescents of America today? Child safety legislation and education, such as the requirement of car seats for infants and young children, has significantly decreased the incidence of preventable accidental death in this

age group. However, according to the Department of Health and Human Services (1991), childhood emotional, psychological and learning disorders are on the increase, as are some chronic physical conditions, such as speech and hearing impairments. The rate of child deaths related to violence has also increased. Child abuse, physical and emotional, continues to be a problem, with cases often going unreported. Lead poisoning remains a significant threat to the cognitive and physical development of America's children. In addition, only 70-80% of the country's children are adequately immunized by the age of two years (USDHHS, 1991).

The health of adolescents is also significantly threatened in today's world. Although adolescents appear to be healthy, if health is defined as the absence of acute illness, there has been a decline in their well-being. Adolescents are the only age group to have seen a rise in mortality rates in the past 20 years. Suicide rates of adolescents have increased dramatically in the past 40 years. The homicide rate for adolescent males and females has also increased. This age group continues to abuse alcohol, tobacco, and other substances. Rates of Human Immunodeficiency Virus (HIV) infection and other sexually transmitted diseases among adolescents have risen, as has the birth rate of children born to adolescent females. Eating disorders and physical inactivity are also a significant problem for this age group (Uphold & Graham, 1993; Kaplan, 1995).

It is interesting to note that, despite the increased threat of mortality and morbidity, adolescents are less likely to visit medical clinics than any other age group (Klein & Sadowski, 1990). Approximately one third of the children ages six years to 16 years have not seen a medical provider in the past year. An estimated 15% of the nation's

children have no regular source of health care (Council on Scientific Affairs, 1989).

The health of children and adolescents in Montana reflects many national trends for these age groups. Montana high school students use cigarettes with frequency similar to other adolescents across the country. They are less likely to wear seatbelts than their peers across the nation. The use of smokeless tobacco by Montana youth (23%) exceeds the national average (11%) by 12%. Montana youth also demonstrate rates of alcohol use similar to national rates. Eighty-four percent of Montana youth report having had at least one alcoholic beverage in their lifetime, as compared to 81% for youth nationwide. Montana's youth are only sightly less sexually active than other youth in the nation. Forty-seven percent of Montana's youth report having had sexual intercourse at least once, as compared to the national rate of 53%. Montana youth are as likely to use condoms during intercourse as their national counterparts. The rate of condom use is 54% among Montana youth and 53% nationwide (Montana Office of Public Instruction [MOPI], 1995). This information suggests that Montana's adolescents demonstrate, with some exception, risk-taking behaviors similar to other adolescents across the nation (MOPI, 1995).

Additional data further describes the health of Montana's youth. The number of child deaths (ages one year-14 years) in Montana rose from 49 in 1990 to 104 in 1993. The number of teen violent deaths, including accidents and suicide, also rose from 56 to 66 during the same period. Montana ranks an alarming fifth in the nation in the rate of completed suicides. This is further evidence that Montana youth are not immune to the behaviors and risks that plague children nationwide (Healthy Mothers, Healthy Babies-

The Montana Coalition [HMHB-MC], 1995).

The youth of Sweet Grass County, of which Big Timber is the only city, are not without problems and needs. The percent of children in special education in the county rose from 8.9% in 1990, to 10.6% during the 1993-1994 school year. The number of children placed in foster homes nearly doubled from six in 1990 to 13 in 1994. The birth rate to single teens rose from 6.3% in 1990 to 8.3% in 1993 (HMHB-MC, 1995). Sweet Grass County also has the highest therapeutic abortion rate (36.9%), among women age 19 years and younger in the state of Montana (Montana Family Planning Program, 1994). Clearly, the risks associated with being a youth in today's society reach into even the more isolated areas of the country, such as a small town in rural Montana.

Identified Barriers to Health Care

A number of barriers to receiving health care have been identified for children and adolescents. Approximately 8.4 million U.S. children have no health insurance (Nudel, 1992). In Montana, it is estimated that 14.9% of the population lives in poverty and that 15.3% have no health insurance (Census & Economic Information Center, as cited in HMHB-MC, 1995). Even if children are covered by health insurance, many of the health services they require, such as health education, health promotion, developmental screening and mental health counseling, are often not reimbursed by insurance companies. The focus of health insurance and many traditional health care services is often problem oriented, rather than directed at health promotion. Thus health care for many children and adolescents becomes fragmented and crisis-oriented (Uphold

& Graham, 1993; Dougherty et al., 1992; Kirby, 1990).

An increase in the number of mothers in the work force and an increase in the number of single parent families may also serve as a barrier to children receiving health care. In Montana, 66.2% of children under 18 years of age have both parents or their only parent in the work force. In Sweet Grass County, that estimate is 76.9% (Census and Economic Information Center, as cited in HMHB-MC, 1995). Parents may have trouble finding the time to seek health care for their children because of their many other responsibilities. This further contributes to crisis-oriented health care for children and adolescents (Dougherty et al., 1993). In rural areas this problem is compounded by the time required away from work to drive long distances to a health care facility.

Many health care needs of today's youth center around sensitive issues. Because of this, youth may experience difficulty in confiding their needs to health care providers. Many health care providers feel they lack the education and skills to appropriately deal with these needs and to communicate effectively with youths. This discrepancy between health care provider and client serves as another barrier to adequate health care (Dougherty et al., 1992).

Providers specialized in adolescent and child health care may be especially difficult to find in many areas of a state like Montana. Montana is a large state with a small population. Many counties, including Sweet Grass County, are designated 'frontier' areas, meaning their population is less than six people per square mile (Elison, as cited in Lee, 1991). The population simply is not dense enough to attract specialized providers to these areas.

The city of Big Timber currently has one general practice physician and a physician's assistant providing care to the community. Big Timber's school system is fortunate to have a school/pediatric nurse practitioner as their school nurse. However, her current job description does not allow her to deliver mid-level primary care services in the schools.

The Role of School-Based Clinics

How are the needs of adolescents and children to be met in an attempt to provide appropriate and effective universal health care to these age groups? One answer to this difficult question may be school-based primary care clinics. Educators and health care providers alike have become increasingly aware that health and learning go together. Students today are arriving at school burdened with complex health and mental health problems. School is an ideal place to observe the development and behavior of these children in order to recognize problems that contribute to poor ability to learn. If these problems are identified and treated, academic performance and general well-being may improve. (Committee on School Health, 1993; Kaplan, 1995; Uphold & Graham, 1993).

Another benefit of school-based clinics is that services are easily accessible to the population served. The need to take time off from school or work for transportation to and from a health care clinic is eliminated. In addition, because the clinic is located at the school, there is increased opportunity for the development of trust between the students and the health care provider. This is especially important for adolescents (Kirby, 1985; Lyons, 1987; Uphold & Graham, 1993).

Examples of the benefits of school-based clinics can be found in the literature. In Denver, suspensions related to drug dealing in the schools were reduced by 80% with implementation of a compulsory treatment program attended by students who, along with their parents, sign a contract agreeing to attend the program. Participation in the treatment program allows the student to stay in school. The Denver school-based clinics also report clinic utilization by approximately 70% of the students. These students average three visits a year to the clinic, clearly demonstrating use of the clinics by youths. Authorities in Denver estimate that at least half of these students would otherwise have inadequate resources for health care (Goldsmith, 1991).

In a Washington state study, data suggests that the users of a school-based clinic included high-risk students. The report also gave evidence that clinic users had greater access to the physical and mental health care they needed than those who did not use the clinics. This suggests that school-based clinics are meeting the needs of high risk youth (Balassone, Bell, & Peterfreund, 1991).

In another example demonstrating the benefit of school-based clinics, there was a significant reduction in the number of inappropriate emergency department visits made by children who had school-based clinic services available to them in Cambridge, Massachusetts. Prior to the school-based clinics, children did not have access to medical care, except through the emergency department. This often resulted in expensive and fragmented care. The addition of school-based clinics served to control some of these costs and to provide more comprehensive and consistent care to the children (Overview of school-based health clinics, 1987).

School-based clinics can provide an effective alternative to traditional health care systems in meeting the needs of children and adolescents. The benefits of comprehensive and consistent care may be even more significant in sparsely populated areas such as Montana. Geographic isolation and a shortage of qualified health care providers in sparsely populated areas is an added constraint influencing the availability and quality of health care services.

Significance of the Project to Nursing

The development of school-based primary care is significant to nursing. The school nurse is the only contact with the health care system for many children. In addition, many school-based clinics employ nurse practitioners as the clinic's primary care provider (Uphold & Graham, 1993). Nursing focuses on family and community, emphasizing health teaching, counseling and health promotion using a holistic approach. Nurses are experienced and educated in case management, integrating and coordinating recommendations from other disciplines. These skills contribute to the ability of nurses to provide comprehensive health care. This ability suggests that nurses may be the most important primary care providers in the school-based clinic setting (Igoe & Giordano, 1992; Uphold & Graham, 1993).

Goal

Only one school-based clinic currently exists in the state of Montana. Primary care practice in the school setting should be considered as a means to increase

availability and accessibility of primary care services to the school-age youth of Montana. The availability of primary care providers within the state to staff school-based clinics will increase with the graduation of the first class of family nurse practitioner students from Montana State University in 1996. As a result, the development of school-based primary care services in the state of Montana will be a more realistic and attainable prospect. The goal of this project, in addition to providing a school-based plan for Big Timber, is to serve as a basic planning guide for other health care providers interested in exploring the possibility of a school-based clinic in their community.

Chapter 2

REVIEW OF THE LITERATURE

History and Development of School-Based Clinics

The concept of school-based health is not new in the United States (Kaplan, 1995). The first school health programs were begun in New York City in 1892, with the primary goal being the identification of children with contagious diseases. From the early 1900's to the late 1960's, school health programs expanded, with the primary emphasis on communicable disease control and health screening (Kaplan, 1995). Nurses were the primary health care professionals working in the schools with children and families during this time (Velsor-Friedrich, 1995).

In 1967, the Cambridge Massachusetts Health Department established one of the first school-based clinics, offering medical services to public school children in kindergarten through eighth grade (Nudel, 1992). Seven years later, in 1975, a nurse practitioner staffed clinic opened in a Cambridge high school. Findings reported by these clinics indicated that school-based clinics provided a comprehensive and affordable means to increase youths' access to health care (Lear, Gleicher, St. Germaine, & Porter, 1991).

The first school-based clinic offering health services to high school students was established at the West Dallas Youth Center at Pinkston High School in Dallas, Texas in 1970. The clinic offered services provided by nurse practitioners, physicians, social

workers, nutritionists, and health educators, in an attempt to provide comprehensive care to disadvantaged youth (Lear et al., 1991; Nudel, 1992). In 1973, the Maternal and Infant Care Program of St. Paul-Ramsey Medical Center in St. Paul, Minnesota, opened a health clinic in the Mechanic Arts High School. Establishment of this clinic was the result of concern over the rising incidence of teen pregnancies. Both the clinic in St. Paul and the clinic in Dallas reported that their school clinics were an effective and workable means to increase students' access to health care (Lear et al., 1991; Nudel, 1992).

In 1986, the Robert Wood Johnson Foundation (RWJ) launched the School-Based Adolescent Health Care Program. The purpose of this program was to develop access to health care for aggregates of adolescents at greatest risk for untreated physical and mental health problems. Funding was provided for school-based adolescent health centers targeting areas with the greatest need, more specifically, youth attending large inner city schools (Keenan, 1991).

A report on 23 clinic sites funded by the RWJ Foundation indicated that the clinics provided a foundation for intervention in high-risk problem areas. Data collected demonstrated that the clinics served many of the students in the schools where they were located, and had multiple contacts with these students. After two years of operation, 71% of the schools' students had parental consent to visit the clinics. Repeat visits to the clinic were made by 81% of the students, with an average of 3.7 visits per student. The clinics were also reported to have provided care to a diverse population of both male and female students. Thirty-seven percent of the students using the clinics were males, and 63% were females. In addition, data showed that health services and education focused on

many pertinent adolescent problems, further substantiating the ability of school-based clinics to address high-risk problem areas of youth and adolescents. Students were most commonly seen for acute illness and injury (26%), followed by mental health related visits (21%), and physical exams, including immunizations (12%) (Lear et al., 1991).

As documentation of the positive influence of school-based clinics on the health of youths has become more evident, school-based clinics have grown in number across the country. The number of school-based health clinics in the United States increased from an estimated 50 clinics in 1985, to an estimated 500 clinics in 1993 (Yates, 1994). The majority of these clinics are located in high schools or middle schools, with approximately one third serving elementary school children. Services and scope of practice vary, depending on the specific needs of the school population each clinic serves (McKinney & Peak, 1994).

Utilization of the school-based clinic model to address the health care needs of children and adolescents has emerged from recognition that the health of today's children and adolescents has deteriorated (Dougherty, et al., 1992). There is general agreement that the ability of children to learn is impeded by unmet physical and mental health needs, and by health-compromising behavior (Committee on School Health, 1993; Hawkins & Catalano, 1990; National Health & Education Consortium, 1995; Kaplan, 1995). There also exists a "growing recognition of the link between low basic skills and school dropout, poverty and early childbearing" (Dryfoos, 1988, p. 193).

Preventing health problems requires more than providing education and services to young people. It requires an honest appraisal of the ways in which the

> environments in which young people develop can be organized to promote the healthy development of drug-free, disease-free and productive citizens. Schools are clearly an important part of the environment of the developing child (Hawkins & Catalano, 1990, p. 178).

While, early in their history, school-based clinics most often served specific aggregates of high risk youth, Dryfoos and Klerman (as cited in Palfrey, McGaughey, Cooperman, Fenton & McManus, 1991) report that school-based clinics are now being integrated into the mainstream health care system. Joel (1994) argues that any school is a potential base for primary care services if they define their role as "enhancing the child's ability to learn" (p. 7). She further states that linking schools and primary care services is "just common sense" (Joel, 1994, p. 7), and is comparable to health care benefits in the workplace. Lear, et al. (1991) concur, stating that schools provide a most accessible setting for school-age youth, making the delivery of comprehensive health care services in the schools "most attractive" (p. 456) in the attempt to meet the health care needs of the school-age population.

Former U.S. Surgeon General C. Everrett Koop (as cited in Terwilliger, 1994) advocated health care for all children. He stated that health care must be accessible to be effective. For health care services to be accessible, they must meet four criteria. These criteria include being available, community-based, affordable, and culturally acceptable (Koop, as cited in Terwilliger, 1994). Terwilliger (1994), in her article, which included a summary on the development and accessibility of a rural school-based clinic in Pennsylvania, reported that 98% of the Pennsylvania school's students were enrolled in

the school-based clinic program. Of these children, 99% used the clinic for sick-child and/or well-child care. She concluded that school-based clinics are accessible; as they are community-based, affordable, available and culturally acceptable, meeting the criteria given by U. S. Surgeon General Koop (Terwilliger, 1994).

Kaplan (1995) cautions that while school-based clinics can positively influence the health of their clients, many of the psycho-social problems treated are deeply rooted in our society and will not be resolved easily. School-based clinics alone will not solve these problems. "For SBHCs [school-based health clinics] to be successful, they must be part of a comprehensive school and community approach that incorporates a continuum of primary, secondary, and tertiary health education, carefully planned interventions, and effective and coordinated physical and mental health service delivery" (p. 199).

Common Characteristics of School-Based Clinics

In the literature review, certain common characteristics of school-based clinics emerge. These characteristics include involving the community in the planning process, evaluating the needs of the community and school population to be served, determining services based on needs assessment, utilizing a team approach in the provision of care, and considering sponsorship by a community health care agency. Budgeting and utilization estimates are also discussed. The section that follows contains a review of these characteristics.

Involving the Community

Rienzo (1994) writes of the need to obtain community approval by approaching the school board and other key community figures early in the planning process of a school-based clinic. Parental and student involvement is crucial for the approval and success of the clinics. Many school-based clinics utilize an advisory board consisting of parents, students, school board members, and/or other interested community members when designing and implementing a clinic. The participation of the advisory board is considered essential to the success of the clinic and its acceptance by the school and community (Kenny, 1986; Kirby, 1985; Nader, 1990; Rienzo, 1994; Rienzo & Button, 1993).

The National Health and Education Consortium (1995) recommends that the design of school-based clinics should be based on local needs. Alexander (1990) states that "perhaps the most common reason for problems in a school-based clinic is the failure to tailor the clinic to the particular needs of the community in which it is located" (p. 137). A needs assessment of the population to be served is deemed essential in the planning process of school-based clinics to determine the design of the clinic and the most appropriate services to be offered (Alexander, 1990; Feroli, Hobson, Miola, Scott, & Waterfield, 1992; Kenney, 1986; Nader, 1990; Rienzo, 1994).

Services Offered

Services offered by school-based clinics are dependent upon local population needs, funding, and local politics (McKinney & Peak, 1994). McKinney and Peak (1994)

report a number of different primary care services being offered based on a review of school-based and school-linked services across the country. This review was completed and supported by the Support Center for School-based and School-linked Health Care/Center for Population Options. The most common services (offered by at least 70% of clinics) include injury treatment, physical exams (including sports physicals), primary care, prescriptions, laboratory tests, immunizations, pregnancy testing, and chronic illness management. Other services (offered by less than 70% of clinics) include dispensing of medication, Early Prevention Screening and Diagnostic Testing (EPSDT), sexually transmitted disease (STD) diagnosis and treatment, gynecological exams, HIV testing, prenatal care, pediatric care of infants of teen mothers, and dental care (McKinney & Peak, 1994).

Mental health and counseling services are also important services offered by school-based clinics. McKinney and Peak (1994) report an average of 20% of all visits to school-based and school-linked clinics were for mental health concerns. Over 70% of clinics offered on-site counseling, dealing most commonly with issues of substance abuse, relationships, family planning, sexual abuse, and dysfunctional family systems. Common health promotional and preventative education topics include the following: nutrition, weight reduction, smoking cessation, self-esteem, conflict resolution, puberty, parenting, pregnancy, HIV, and STDs (McKinney & Peak, 1994). Harold (1988) speculates, from her informal review of client records, that adolescents who utilize the educational and mental health services of school-based clinics demonstrate improved health and nutritional status, increased communication with their families, and growth in

their self-esteem and coping skills.

Staffing

A multi-disciplinary team often staffs school-based clinics due to the wide range of identified needs, and the importance of providing comprehensive care. Team members include nurse practitioners, physicians, social workers, nurses, psychologists, and health educators (Uphold & Graham, 1993). For some clinics, it is not feasible, due to funding and/or availability of qualified providers, to staff the clinics with professionals from all the various disciplines. Many clinics utilize mid-level providers, such as nurse practitioners or physician assistants, as the primary provider and develop a plan of referral and collaboration with other professionals outside the clinic (National Health and Education Consortium, 1995; Terwilliger, 1994). Staffing patterns are determined largely by student population, funding, and program design (Kaplan, 1995). Collaboration of health professionals, using a team approach, is considered essential in meeting the needs of children and adolescents (Kaplan, 1995; National Association of Pediatric Nurse Associates & Practitioners, 1994; Yates, 1994).

Sponsorship

Only 9% of school-based/school-linked clinics are sponsored by the school systems themselves (McKinney & Peak, 1994). School-based clinics are usually sponsored by another health care agency in the community. Local public health departments, community health centers and hospitals are the most common sponsors (McKinney & Peak, 1994). Most clinics are established with links to community health

care institutions for a number of reasons. These institutions maintain administrative and fiscal responsibility by providing funding, and often are capable of billing Medicaid and private insurance companies (Keenan, 1991; McKinney & Peak, 1994; Palfry et al., 1991). Linkages with other health care facilities are also important for backup of specialists and for coverage of services during nonschool hours (Palfrey et al., 1991). In addition, sponsorship by larger health care centers aids in integrating the school-based clinic into the community, enables the provision of comprehensive care, and avoids duplication of services within the community (Lear et al., 1991).

Funding

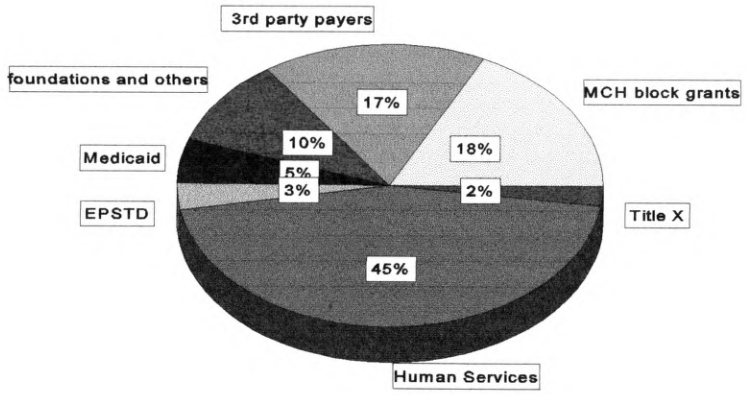

Figure 1. Funding Sources for School-Based Clinics.
Note. Source: D. McKinney & G. Peak, (1994). School-Based and School-Linked Health Centers Update: 1993. Washington, DC: Center For Population Options.

Most school-based clinics are funded through a variety of sources. As shown in Figure 1, 45% percent of funding comes from state and local human services money, 18% from Maternal Child Health (MCH) block grants, 17% from third party payers, excluding Medicaid, 10% from foundations and grants, 5% from Medicaid, 3% from EPSDT, and 2% from Title X family planning funds (McKinney & Peak, 1994). Obtaining and maintaining funding for school-based clinics is often cited as one of the most difficult issues facing school-based clinics (Keenan, 1991; Rienzo, 1994; Terwilliger, 1994). Many clinics mix general and specific funds with in-kind services, such as volunteers and donated clinic space (Kaplan, 1995; National Health & Education Consortium, 1995).

Costs and Estimated Utilization

Because of the various and creative means to overcome operation costs of the clinics, a wide range of costs per student for school-based clinics is reported in the literature. Kaplan (1995) estimates the cost for clinics in Denver to be $125 per student per year. This estimate includes in-kind costs, costs of program administration, and cost of school outreach and health education (Kaplan, 1995). McKinney & Peak (1994) report the mean budget per student per year to be $196 nationally.

The number of students utilizing the clinic must be considered in preparation of the budget. Utilization of the school-based clinic services have been estimated by some to be 35% of the student body the first year the clinic opens, increasing to approximately 70% to 75% in subsequent years (Kenney, 1986; Lear et al., 1991). School-based clinic

enrollment in Baltimore was reported to have grown from 12% the first year of operation, to 60% after five years (Feroli et al., 1992). It is evident from the literature that estimated budgets for school-based clinics vary, and are dependent upon different characteristics of different clinics, but the trend is for enrollment to increase after the first year (Feroli et al., 1992; Kenney, 1986; Lear et al., 1991; Terwilliger, 1994).

Evaluation

It is important to evaluate school-based clinics after they become operational. This is necessary to justify the need for the school-based clinic, and to determine if the clinic is meeting that need. Funding for subsequent years of operation may also be determined through periodic evaluation of the clinic (Dryfoos, 1988). Rienzo and Button (1993) identify local health needs assessment, evaluation of community support, and maintaining records of services, outcomes and clinic cost-effectiveness as crucial strategies in justifying the school-based clinic. Evaluation of the program at least every six months is recommended (Terwilliger, 1994).

Assessing the quality of health care provided is also an important part of the evaluation process. Lear et al. (1991) recommend case conferencing and consultation among clinic staff to encourage multi-disciplinarian participation and "melding of skills" (p. 455) to address health care problems encountered in the clinic. Because many school-based clinics are managed by another community health agency, health care management recommendations and consultation may come from other health care professionals within the sponsoring agency (Lear et al., 1991). While not directly stated in the review of the

literature, regular case conferencing and consultation contribute to the assurance of quality care. The American Academy of Pediatrics (1994) recommends that quality assurance with periodic chart review by a collaborating physician should occur in school clinics providing primary medical services. This author would agree, but argue further that chart review should encompass all services provided, and include review by not only physicians, but pertinent health professionals from other disciplines as well.

Chapter 3

THE SCHOOL-BASED CLINIC PLAN FOR BIG TIMBER, MONTANA

Introduction to Community Oriented Primary Care

In this chapter, a school-based clinic plan for Big Timber, Montana will be presented. The Community Oriented Primary Care (COPC) process will be utilized as a framework for development of the plan. The first section will include a discussion of the COPC model and process. The school-based clinic plan for Big Timber, Montana, based on the COPC model and utilizing the COPC process, will follow.

Community Oriented Primary Care (COPC) is a model "in which major health problems of a defined population are identified and addressed through modifications in both primary care services and other appropriate community health programs" (Nutting, 1986, p. 140). In the COPC model, a portion of the clinical focus shifts from the individual patient to a larger group of individuals, or community. The major components of the model are primary care services and the community. Components are brought together through the COPC process. In the COPC process, a target population is defined, and its priority health problems are systematically addressed (Nutting, 1986). For planning school-based health care, the COPC process "provides a way to focus and coordinate the energy and resources of primary care practitioners, school districts, and community agencies" (Barnett, Niebuhr, Baldwin, & Levine, 1992, p. 246) to address the complex problems of youth and children in a comprehensive and appropriate manner

(Barnett, et al., 1992).

The Community Oriented Care Process involves four functions. These functions include (a) defining the community (population) and its characteristics, (b) identifying the health problems of the community, (c) developing the program plan, and, (d) monitoring and evaluation of the program's effectiveness (Nutting, 1986).

Community participation is considered a central strategy of the COPC process. All four functions of the COPC process should occur with community input according to Nutting (1986). "Community involvement can add a distinctly new and vitally important dimension to the identification of community health problems" (Nutting, 1986, p. 145). Barnett et al. (1992) agree, adding that community involvement provides "the energy, effort and connections" (p. 246) to make the COPC process successful in a particular community.

In the sections that follow, a school-based clinic plan for Big Timber, Montana will be developed utilizing the four functions of the COPC process. Suggestions for community involvement and input will be made throughout the plan. Appendix A contains an outline of the planning process.

School-Based Clinic Plan

Population Definition and Characteristics

There are two schools in Big Timber, the grade school (grades kindergarten-8th) and the county high school (grades 9-12). There are 344 grade school students and 190 high school students. The school-based clinic plan in this paper will focus on the

population of students at both schools.

The school children to be served live in, or near, Big Timber; a city in south central Montana with a population of 1557 people (US Census, 1990). Sweet Grass County, in which Big Timber is located, has a population density of less than 6 persons per square mile. This sparse population density qualifies the county for rural "frontier" designation as defined by the United States Department of Health and Human Services (Ellison, 1986, as cited in Lee, 1991). Big Timber is the only city in Sweet Grass County. The closest cities to Big Timber include Livingston (36 miles to the west), with a population of 6,701, Columbus (40 miles to the east), with a population of 1,573, and Harlowton (44 miles to the north), with a population of 1,049 (Rand McNally, 1996).

Ninety-eight percent of the county's population under the age of 18 years is Caucasian and all speak English (Census and Economic Information Center, as cited in HMHB-MC, 1994). Ninety-nine percent of children in Sweet Grass County attend public school (Office of Public Instruction, as cited in HMHB-MC, 1994). Seventy-seven percent of children under the age of 18 have both or their only parent in the workforce, which is higher than the state rate of 66.2%. Nine and a half percent of the county's children live in a single parent family as compared to 19.4% statewide. Seventy-two children (8%) are on Medicaid in Sweet Grass County (Census and Economic Information Center, as cited in HMHB-MC, 1995).

Medical services in Big Timber are provided by one general practice physician, who operates his private clinic during the weekdays. The physician is not available after hours to administer emergency care. There is a volunteer ambulance service in Big

Timber. Emergencies are handled in the physician's office during the weekdays. After hour emergencies must be treated at a hospital in one of the neighboring cities. Livingston, Columbus and Harlowton all have hospital facilities.

Because of the limited availability of Big Timber's only physician, many residents receive their health care outside of Sweet Grass County. In an effort to make medical care more available to the community, the county is currently constructing a Medical Assistance Facility (MAF) onto the existing nursing home. Plans also include construction of a Rural Health Clinic (RHC) in the future. It is estimated that the MAF will be operational by the spring of 1996, and the availability of 24 hour medical services will be restored to the community. A physician and a physician's assistant have been hired to staff the MAF, although as of February 1, 1996, neither is in residence in Big Timber.

Other health care services available to the residents of Sweet Grass County include bi-monthly immunization clinics, Women, Infant and Child (WIC) services, prenatal classes, and chemical dependency counseling. There is a local optometrist and two local dentists. Well Child clinics, which include developmental screening, are sporadic and limited to one or two a year. Public health services are limited, and available only through the federally funded Maternal Child Health block grant, Immunization Action Plan grant, and Preventative Health Block grant for community AIDs education. There are no family planning services available outside the private physician's office.

The Big Timber Grade School and the Sweet Grass County High School, which

operate out of two separate school districts, provide some health services to children within the school system. A school nurse divides her time between both schools. She manages minor illnesses and injuries, administers fluoride, and screens children for problems with vision, hearing, development, and scoliosis. The school nurse also participates in the evaluation of children for behavioral problems and Attention Deficit Disorder.

Both schools have a counselor available to students. There is also a school psychologist. A 'care team' at the high school meets once a week to discuss students that have demonstrated behaviors or needs that have become a concern. The care team consists of concerned teachers, the school counselor, the school nurse, the principal, and occasionally the school psychologist. Together they design a plan of care to address specific student problems. After an initial meeting concerning a student, the student and/or the student's parents may be invited to participate in subsequent meetings. Student problems dealt with in this manner commonly include depression, eating disorders, low self-esteem, behavioral problems and poor performance in school (Grayce Sivigny, personal communication, January 8, 1996).

The grade school has a care team organized in a similar fashion to the team at the high school. The grade school care team meets on an "as needed" basis and not as often or regularly as the high school team. The emphasis of both teams is on early intervention with identified student problems.

Children at either school determined to have problems beyond the scope of the care team's expertise are referred to resources outside of the school. A mental health

counselor in Big Timber sees children on Medicaid and offers a sliding fee scale to low income individuals. Parents may choose another private provider outside of Big Timber at their own expense (Grayce Sivigny, personal communication, January 8, 1996).

Because the city of Big Timber is small, and in a sparsely populated area, activities for children outside of school are limited. Children and youth are able to participate in Boy Scouts, Girl Scouts, Future Farmers of America (FFA), Future Homemakers of America (FHA), church activities and 4-H. Organized sports, as in many small communities, play an important role in providing activities for children. There is strong emphasis on participating in sports at the high school level. Varsity games at the high school level are well attended and supported by the community. It is interesting to note that 66.6% of Sweet Grass County High School students have played on at least one school sports team, as compared to 55% of students across the state of Montana (MOPI, 1995).

Identified Health Problems and Needs

Data from the 1995 Montana Youth Risk Behavior Survey (MOPI, 1995), which was developed as part of the United States Centers for Disease Control and Prevention (CDC) Youth Risk Behavior Surveillance System, provides information that identifies health risks of the Big Timber school population. This information is the result of a survey of seventh through twelfth graders conducted at schools throughout the state of Montana in the spring of 1995. Big Timber students in grades seven through 12 participated in the survey.

A significant portion of teenage morbidity and mortality is related to behaviors such as sexual intercourse at an early age, drinking, and driving under the influence. The Youth Risk Surveillance System was established by CDC to monitor and identify prevalent behaviors among youth that influence their present and future health. The results of the study are intended to be used for the development of comprehensive health education in an effort to reduce health risk behaviors of youth. An identified limitation of the study is that respondents in self-reported surveys, such as this one, tend to under-report socially undesirable behaviors and over-report socially desirable behaviors (MOPI, 1995).

Data from the 1995 Montana Youth Risk Behavior Survey indicate that behavioral risks of Big Timber youth varies slightly from other youths across the state. The survey found that 44% of Sweet Grass County High School students smoked a cigarette at least once in the 30 days prior to the survey. This compares to 35% statewide. Thirty-six percent used chewing tobacco, as compared to 24% statewide. Sixty-one percent of the high school youths in Big Timber reported having had five or more alcoholic beverages, within a couple of hours, at least once in the 30 days prior to the survey. This is slightly higher than the statewide rate of 58% and higher than the nationwide rate of 48%. The percentage of those youths having tried marijuana was similar to others across the state. Thirty-one percent of Sweet Grass County High School students stated they had tried marijuana at least once. In addition, 26% of Sweet Grass County High School students stated they had seriously contemplated suicide, as compared to 22% for Montana youths as a whole (MOPI, 1995).

The percentage of Big Timber youth engaging in sexual intercourse is comparable to that of the state rate. Forty-five percent answered that they had experienced sexual intercourse at least once in their lifetime. Approximately half used a condom when having intercourse. Most indicated that they became sexually active around the age of 14 or 15 years old. Another area addressed in the survey, and in which Big Timber youth closely compared to youths across the state, was seatbelt use, with 32% indicating they never or rarely wore seatbelts. Rates of physical inactivity and dietary practices were also similar to youths statewide (MOPI, 1995).

Recommendations made by MOPI (1995) to improve risk behaviors of Montana youth, based on the results of the survey, include increased seatbelt and helmet use, reduction in alcohol use, reduction in tobacco use, reduction in marijuana use, increased abstinence from sexual intercourse, and, for sexually active youths, increased condom use. Preventative efforts recommended include prevention of injuries, prevention of alcohol and tobacco use, sexuality education, promotion of physical activity, and promotion of good nutrition (MOPI, 1995).

Health care needs of children and youth in Big Timber are also determined from assessment of the current health care services in the community. As was mentioned earlier, few preventative services are available in the community. No health care services in the community, outside of the school, address the specific and comprehensive needs of adolescents, and services to younger children are limited. These limitations place youths at risk for receiving fragmented and crisis-oriented health care.

For children with both or their only parent in the workforce (77%), accessing

health care services is difficult. Arranging time off from work to take a child to a health care provider can challenge a parent. Increased time is required for travel, for those that seek health care outside Big Timber. Barriers to accessing health care, such as time and geographic distance, lead to postponing treatment of problems until they become more acute and advanced.

To summarize, the identified health care needs of school children and youth in Big Timber include health behaviors at rates similar to other students across Montana concerning sexual activity, limited condom use, suicidal ideation, and poor dietary habits. Rates of stated alcohol and tobacco use are higher among Big Timber youths than the state average (MOPI, 1995). In addition, because of the limited availability of health care services in Big Timber, and the need to travel out of the county to receive specific services, students have limited access to health care. The extent to which limited services and other barriers to care, such as time and distance, influence Big Timber youth's health care has not been directly determined. Further assessment of these barriers would be helpful in verifying needs and planning health care services for Big Timber youth. Appendix B contains a questionnaire to be given to youths and their parents which can be used to obtain this information.

Program Development

Introduction. Program development is the third identified function in the COPC process. Program development is based on information from the two previous functions in the COPC process: population definition, and problem identification. At this point in

the planning process, community involvement becomes crucial. Before advancing to the actual development of a school-based clinic, community support for the concept must be established.

To foster community support, the concept of a school-based clinic would be presented to the administrators and school boards of both schools. Information found in this paper's review of the literature regarding other clinics across the country, and including information describing the specific health risks and needs of children in the Big Timber schools, would be presented. Presentations would also be made to various community groups, including the Chamber of Commerce, teacher's groups, church groups and the Women's Club.

From these presentations, supporters of the school-based clinics would be identified. From identified supporters, a planning task force of ten people would be established. The task force would investigate the feasibility of a school-based clinic and participate in the promotion and design of the clinic. Task force members would include parents, influential figures in the community, school representatives and school board members.

It would be important to include student input on the task force. This would help assure that the clinic was designed to foster students trust and effectively meet their needs. Student input would be obtained from focus group meetings with students throughout the planning process.

The task force would meet monthly for eight months prior to the opening of the clinic. An agenda would be prepared outlining the steps of planning the school-based

clinics. Task force members would use the agenda to guide their meetings.

As the opening of the clinic drew near, the planning task force would be responsible for appointing a seven member advisory board to advise clinic staff in operational matters. The clinic director would be an ex-officio member of the advisory board, which would allow her/him to attend the advisory meetings. Members of the advisory board would include three interested community members, a school board representative from each of the two districts, and the principal from each school.

The plan in this paper is presented as a starting point for the development of a school-based clinic in the Big Timber schools and is intended to generate discussion among community members involved in the planning process. Through the involvement of an established task force, student focus groups, and other community input, it is anticipated that the plan would undergo a number of modifications before its implementation.

Sponsoring agency. Given the fact that there is no established health care agency in Sweet Grass County, the Big Timber Grade School and the Sweet Grass County High School would be identified as the sponsoring agencies of the school-based clinics. As the sponsoring agencies, the schools would be responsible for managing the finances and legal issues concerning the school-based clinic. Because the schools are in separate districts, it may be difficult to coordinate the development of a school-based clinic at both schools. To facilitate this process, the task force would consist of representatives from both districts, and the clinics would be developed as a joint venture between the

districts to avoid duplication and contain costs. Agreement to a joint venture would have to be made by the school administrations.

Clinic Staff. Staff for the school-based clinics would include a pediatric or family nurse practitioner, who would also act as clinic director, and an office clerk. The choice of a nurse practitioner with prescriptive authority as the primary health care provider in the clinics is sensible because of the lack of specialized health care providers in the area, and the comprehensive health care needs of children and youth in Big Timber. Nursing utilizes a holistic client approach, focusing on family and community, with emphasis on health teaching and promotion. Nurses also integrate and coordinate health care recommendations from other health care disciplines (Igoe & Giordano, 1992; Uphold & Graham, 1993).

Another benefit in staffing the school clinics with a nurse practitioner is the elimination of the need for a medical director. In Montana, regulations require that a nurse practitioner have a plan of referral in place for those patients that require a physician's care. However, nurse practitioners are not required to practice under the direct supervision of a physician (Montana State Board of Nursing, 1995). This is unlike a physician assistant's practice, which requires physician supervision. Staffing the clinic with a nurse practitioner avoids the expense of hiring a medical director.

Other staff members of the school-based clinics, to augment the care provided by the nurse practitioner, would include a mental health worker, a dietician, dentist, and a drug and alcohol abuse counselor. The school-based clinic would contract with these

professionals to provide services at the clinic. These professionals would also be expected to participate in case conferences and the development of protocols in their area of expertise. Professionals with experience and education in dealing with youths would be preferred, to better meet the comprehensive health needs of the school population.

Clinic Services. Services to be provided at the school-based clinics in Big Timber would be based on the health care needs of the students. Primary care for acute short term injuries and illnesses would be available at both sites. Management of chronic diseases such as diabetes, and asthma, in collaboration with the child's physician, would be provided at both sites. Emphasis would be placed on working with other health and school professionals in providing a comprehensive and collaborative approach to the health care of the children and adolescents.

At the grade school, services would focus on early identification and treatment of behavioral, learning, physical and mental health disorders. EPSTD screening, dental screening, immunizations and well child examinations, would be available. The ability to observe children's behavior in the classroom to rule out disorders such as Attention Deficit Disorder, and to evaluate the effectiveness of treatment, would also be among services provided. In addition, health education and counseling would be included as a clinic offering, integrating members of a student's family whenever possible.

At the high school, services would focus on the early identification, intervention and prevention of behavioral risks and mental health problems, as well as the primary care management of acute and chronic illnesses, wellness examinations, health education

and counseling. Working with other health care personnel, case conferencing, and utilization of a team approach to treatment would be emphasized. Family planning counseling and STD testing would be available, as well as gynecological exams.

The prescribing and dispensing of contraception, while needed in Big Timber, is a very controversial issue. The dispensing of contraception would have to be negotiated very carefully with the school administration and the public. Opposition to contraception in the school-based clinic, if not delicately handled, could undermine the entire clinic plan.

Pharmaceutical services would not be offered at the clinics. It would not be wise to keep drugs at the clinic sites because of the regulations involved and the potential for theft and abuse. Nurse practitioners are able to write prescriptions in the state of Montana, and prescriptions would be written for children at the clinics as needed. Prescriptions would be filled by the pharmacist at the local drug store.

Regulations. There are certain regulations that require attention in the planning of the school-based clinic. Any plan to provide laboratory services must meet the requirements of the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88). In addition, requirements of the Occupational Safety and Health Administration (OSHA) regulations must be implemented.

CLIA '88 requirements for laboratory testing are too complex and expensive to make extensive laboratory testing feasible at the Big Timber school-based clinics. There are certain laboratory tests that are allowed to be waived for a fee under CLIA '88. A

CLIA '88 wavier for the school-based clinics would be purchased, allowing urine dipsticks, stool hemoccults, non-automated hemoglobins and fingerstick glucose testing to be done at the clinic (Russ Morrison, personal communication, October, 27, 1995). Laboratory specimens for tests not included in the CLIA'88 wavier would be sent to the MAF laboratory for testing. The only requirement in doing this would be that the nurse practitioner meet the MAF's laboratory guidelines for specimen collection (Donna Gollehon, personal communication, February 1, 1996). Lab expenses incurred at the MAF would be the responsibility of the student's family, unless funds became available to cover these costs.

OSHA requirements must also be addressed in the school-based clinic plan. Essential to meeting OSHA requirements, a blood born pathogen program would have to be written. This includes the handling of contaminated materials, needle disposal, and exposure protocols. Material Safety Data sheets would have to be obtained and kept on all chemicals, including cleaners and drugs, that are kept in the clinic. OSHA has many complex requirements. The best way to assure that OSHA requirements have been met would be to contact the Safety Bureau at the Montana State Department of Labor in Helena and request an advisory inspection prior to the opening of the clinic (Sandra Stapler, personal communication, February 1, 1996).

Protocols, Policies and Procedures. The development of protocols (standards of treatment), policies and procedures are very important in the planning of a school-based clinic. Protocols serve as guidelines to assure a certain standard of care. Policies and

procedures that are consistent with the legal obligations of the health care provider, and clinic, serve to protect the clinic and staff from legal liability (Hauser, 1993).

For the clinics in Big Timber, the Manual of Ambulatory Pediatrics (Boynton, Dunn, & Stephens, 1994) would be used as a base in the development of primary health care protocols. The book contains protocols for the primary care management of the pediatric population. The guidelines in this book would be reviewed by the nurse practitioner and modifications would be made, as needed, to tailor the protocols to the needs of the youths in Big Timber. Protocols for referral, as required by Montana nursing regulations, and case management would also be developed by the nurse practitioner.

In addition, the development of protocols concerning mental health would be developed by the nurse practitioner and the mental health worker. Mental health policies are necessary to address and manage mental health issues in the clinic. The minimum necessary mental health policies include those dealing with suicidal behavior, depression, violent behavior, drug and alcohol abuse, rage, and appropriate mental health referral (Hauser, 1993).

The development of clinic policies and procedures addressing legal liability would be done by the nurse practitioner, with assistance from school administration. These policies and procedures would be reviewed by the schools' lawyers for legal correctness before being accepted. Policies and procedures necessary to decrease legal exposure include: (a) reporting requirements and procedure for known or suspected child abuse, (b) reporting of STDs, (c) exchanging of information and release of records, (d) disclosing of confidential information, and (e) obtaining parental consent and informed

consent (Hauser, 1993).

Consents. For minors, parental consent to treat is necessary. Hauser (1993) suggests an annual blanket consent form for treatment at school-based clinics, especially for teens. A blanket consent form would allow youths to seek help for private problems about which they may not be comfortable approaching their parents. The consent form would be sent home for parents to sign, along with information discussing the services provided at the clinics. Any parent uncomfortable signing the consent would be encouraged to make an appointment with the nurse practitioner to discuss their concerns. A meeting with the nurse practitioner may help alleviate some of their concerns and develop trust between the nurse practitioner and the parent. Any consent form developed would require review by the schools' lawyers for legal appropriateness.

Floor Plan. In order to deliver services, a certain amount of space would have to be designated for clinic use at the schools. A minimum of a 10' x 8' room with a sink would be needed as an exam room (see figure 2) . It would be best if this room were in an area of the school away from the mainstream, to allow for privacy. Ideally, a bathroom would be nearby. A minimum of a 10' x 8' space for a clerk's office and clinic records would be need to be adjacent to the examination room. The clerk's room would have to be able to be locked after clinic hours to protect the clinic records. Spatial demands of the clinic would require rearrangement of current school facilities. In the event that a middle school is built within the next four to five years, clinic space could be included in the school design.

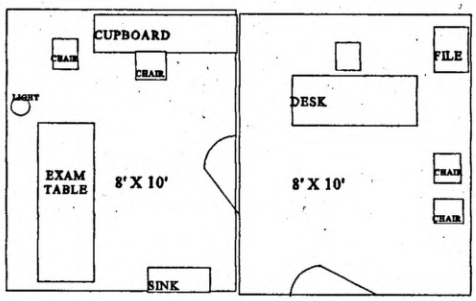

Figure 2. Schematic of clinic

Estimated Utilization. Utilization of the clinics in Big Timber is estimated at 30%, or 160 students, for the first year. Utilization for the second year is estimated at 70%, or utilization by 374 of the students. These are conservative estimates, based on utilization rates of other clinics across the country (Kenny, 1986; Lear et al., 1991). The average number of visits per student is estimated at three per year, also based on averages from other clinics across the country (Lear et al., 1991). Using this figure, the total number of student visits is estimated to be 480 the first year and 1,122 the next year. Estimating a half hour for each clinic visit, the nurse practitioner would be needed 240 hours the first year and 672 hours the next year to see students. The nurse practitioner also needs time for record keeping, case management, case conferencing, and clinic management, such as developing protocols, chart evaluations etc. Much of the nurse practitioner's time the first year would be devoted to the development, organization, and promotion of the clinic.

Based on estimated utilization, the clinics would be open a total of 16 hours a week. The time would be divided into four hours two mornings a week at the high school, and four hours two mornings a week at the grade school. Clinic hours are spread over four days to increase availability to students, especially those with illnesses of acute onset. If a joint venture arrangement between the two schools was successfully arranged, students with acute illnesses could be seen at either school.

Budget. The budget for the school clinics includes start-up costs, equipment costs, and operational costs. The budget includes some costs that may actually be absorbed or donated as in-kind services by the school system, such as rent, utilities, and a portion of the clerk's hours. The reader is referred to Appendix C for an itemized presentation of the budget. The budget is figured over a two year period to account for changes in utilization rates and equipment costs.

The budget for the two school-based clinics for two years is estimated to be a minimum of $53,778.88. This is equal to $101.00 per student. This figure is $24.00 less per student than the estimate given by Kaplan (1995), but, unlike his estimate, does not include lawyer fees, all laboratory fees, school administration costs, and contracted employees. The lawyer and school administration fees would most likely be provided as in-kind services. Laboratory fees for laboratory testing done outside of the clinic would be the patient's responsibility. The cost of contract employees would be covered in part by current contracts the school already has with some of these health professionals.

Funding. Funding is perhaps the most difficult hurdle in the planning process. To investigate funding sources for the school-based clinics in Big Timber, a committee of community members with grant writing and fund raising experience would be formed. Members of the task force would be responsible for designating the members of the funding committee. Local community members with experience in grant writing and fund raising would be approached to serve on this committee. Suggestions of funding sources to investigate include securing a donation from the local health foundation for the necessary start-up equipment, researching grant opportunities, and soliciting private donations from community members.

There is a federally administered Rural Services Outreach Grant that specifically targets school-based clinics and adolescent health care projects as possible recipients of grant monies. This should be investigated as a potential source of funding through the Montana Area Health Education Center (MAHEC) at Montana State University in Bozeman. Priority for this grant is given to pilot projects designed to increase access to health care for rural residents (David Young, personal communication, January 5, 1996). As there is only one other school-based clinic in the state, the school-based clinic plan for Big Timber may be considered a pilot project. The MAHEC may have information on other possible grant sources as well. In addition, a small percentage of the money available to Sweet Grass County through the MCH block grant, the Immunization Action Plan grant, and the AIDs education Preventative Health block grant, could also be used to fund the school-based clinics. The amount of funds from these grants would be small, as the total of these grants together is only $5,600. These grants also require that a certain

percentage of the money be spent outside the school system.

The funding committee would also be responsible for investigating payment for service sources such as Medicaid and private insurance. The grade school is already billing Medicaid for EPSTD screening and medication administration by the school nurse, under its own provider number (Grayce Sivigny, personal communication, January 11, 1996). Expanding billing to include school-based services needs to be investigated, as well as the feasibility of developing a sliding fee scale for services.

Program Evaluation and Monitoring

The last function in the COPC process is program evaluation and monitoring. Program evaluation is important to determine the success of the program and that the program is meeting the needs of the population for which it was intended. Periodic evaluation of a program also determines if certain standards of care are being met, and brings attention to areas requiring modification. Future program funding is also contingent on documentation of the program's success (Dryfoos, 1988).

Hauser (1993) suggests that there are three types of evaluation that need to be considered in the evaluation of school-based clinics. These types of evaluation are process, impact, outcome. The cost of services, as related to clinic process, impact and outcome, is also important to evaluate. Program evaluation and monitoring of the Big Timber school-based clinics would be performed utilizing process, impact and outcome evaluation, as well as financial evaluation. Table 1 contains a visual representation of the evaluation components of the school-based clinics.

Table 1. Evaluation of the School-Based Clinic

	Process	Impact	Outcome	Financial
Daily:		collection of data		
Every 2 weeks:	case conferences			
Monthly:		internal utilization review		financial review
Quarterly:	peer chart review and evaluation of clinic operations		review and evaluation of client outcomes	financial report
Annually:		utilization report presented to the public at an open meeting	satisfaction survey and assessment of risk behaviors	internal audit and presentation of results at meeting open to the public

Process Evaluation. The manner in which the clinic operates and in which health care services are delivered are evaluated through process evaluation (Hauser, 1993). In Big Timber, quarterly meetings would be attended by the clinic staff and the advisory board to evaluate and modify the operational processes of the clinic. Examples of operational processes include design of the client record, scheduling, staffing, procedures for handling billing, and determination of clinic hours.

Process evaluation of health care service delivery is conducted to ensure the provision of quality care in the clinics. Case conferences would be held every two weeks and as needed, and would be attended by all professionals involved at the clinic. The purpose of these conferences would be to assure that students are receiving quality

comprehensive care for their needs and to facilitate communication between health care professionals. To further assure quality of care, quarterly chart reviews would be done on 30 or 5% of charts, whichever is less, to evaluate the care provided by the nurse practitioner. This review would be done by another nurse practitioner in the area (peer review) and the physician named in the plan of referral. Corrective action would be taken as necessary. This review would also satisfy the quality assurance requirements of prescriptive authority for nurse practitioners in the state of Montana (Montana State Board of Nursing, 1995).

Impact Evaluation. Impact evaluation measures the impact of the clinic on the school population it serves (Hauser, 1993). Impact evaluation is accomplished by continuous collection of data to begin on the opening day of the clinics. Data to be collected would include number of students served, student's age, student's gender, chief complaint, services provided at each visit, number of repeat visits by a student, amount of time for each visit and outcome of problems. Collection of this data would give information regarding clinic utilization. A log of services requested, but not available, would also be kept to identify unmet needs for future planning. Collection of this data would be facilitated by data input into a computer, if one was available. This information would be evaluated and presented to the school administration, the advisory board, and the local community on an annual basis.

Outcome Evaluation. Outcome evaluation analyzes how successful the school-based clinic has been at improving health indicators identified in the clinic plan and the

needs assessment (Hauser, 1993). To evaluate behavioral changes of students since the opening of the school-based clinics, data from subsequent Montana Youth Risk Behavior surveys would be compared to previous surveys, looking for a decrease in youth's risk behaviors. Indicators of decreased risk behaviors would be evidenced with decreased alcohol use, decreased tobacco use, decreased incidence of sexual intercourse, increased use of condoms in those that are sexually active, and decrease in reported suicidal ideation. Evaluation of the barriers to health care access would be accomplished through a customer satisfaction survey. The survey would be sent to students and parents after one year of clinic operation and would include questions regarding students' satisfaction with clinic services and perceived barriers to health care access.

Financial evaluation. To evaluate the finances of the clinics, costs would be reviewed monthly by the school administration and clinic staff. Quarterly financial reports would be done and presented to the advisory board. Annually, an internal audit would be prepared and the report presented to the school administration and the local community for evaluation. It would be important to present this information with any clinic utilization data, behavioral risk data, and customer satisfaction survey results, highlighting positive patient outcomes and success stories. In the annual report, costs of clinic services would be compared to costs of health problems that might have developed had the clinic not been available to students. For example, the cost of intervening to help a student to quit smoking would be compared to the amount this individual would spend on cigarettes in a lifetime, the cost of caring for a patient with lung cancer, and the cost

of lost years of productive life. This would emphasize the benefits of the school-based clinics, prove that prevention is cost-effective, and support further funding.

CHAPTER 4

SUMMARY, IMPLICATIONS AND RECOMMENDATIONS

Summary

The purpose of this paper has been to present a school-based clinic plan for the city of Big Timber, Montana. The COPC process is used as a framework for design of the plan. Involvement of the primary care providers and the community is an integral part of the COPC process. The school-based clinic plan for Big Timber involves the community in the planning process through the formation of a community task force, which is ultimately responsible for determining and finalizing the school-based clinic plan. The plan also calls for the formation of an advisory board, consisting of community members, which would be responsible for advising clinic staff on operational matters and evaluation once the clinic is functional. The formation of student focus groups to discuss clinic services would assure student participation in the plan.

The first function of the COPC process in the Big Timber school-based clinic plan involved defining and identifying the characteristics of the population to be served. Children at the Big Timber Grade School and the Sweet Grass County High School were identified as the population to be served in this project. The characteristics of the community in which they live were also discussed.

Identifying the health problems of the community was the second function of the COPC process utilized in the school-based clinic plan. Health care needs for the students

in Big Timber were determined from the Montana Youth Risk Behavior Survey (1995), and from evaluation of current health care services available to youth in the city of Big Timber. Barriers to health care access, such as geographic distance and travel time required to seek health care services outside Big Timber, were identified.

Program development, the third function of the COPC process, was based on the health needs of Big Timber youth. The plan identified the Big Timber Grade School and the Sweet Grass County High School, in a joint venture, as the sponsoring agency of the school-based clinics. Clinics would be housed at both the grade school and the high school. A nurse practitioner was determined to be the best choice of a primary care provider for the clinics and would divide her/his time between both sites. The nurse practitioner would also function as the clinic director. Other professional providers, such as a dietician and mental health worker, would contract with the school to provide services.

Clinic services in the plan were directed at the identified health care needs of Big Timber youth. Services included the provision of basic primary care, early identification of health care needs, through preventive screening, as well as health promotion and education. Comprehensive care, through case conferencing and collaboration among health care professionals was emphasized.

Another element of program development included identification of regulations that influence the Big Timber school-based clinic plan. Regulations reviewed included CLIA and OSHA. Program development for the school-based clinic plan also included: (a) establishing protocols, policies, and procedures, (b) addressing consent issues, (c)

designing the floor plan of the clinic, (d) estimating utilization of the clinics, and (e) determining the budget and funding of the clinics.

The fourth, and final, function of the COPC process addressed program evaluation and monitoring of the school-based clinics. Evaluation of the school-based clinic was broken down into four categories of evaluation, which included: (a) process evaluation, (b) impact evaluation, (c) outcome evaluation, and (d) financial evaluation. A plan for evaluating and monitoring the school-based clinics was presented utilizing these four categories.

Implications

The comprehensive health care needs of children and adolescents in the Big Timber area are not being adequately addressed by the current health care system. Many of these needs are similar to youths statewide. Adolescents in Big Timber demonstrate high risk behaviors at rates similar to other youths across the state and nation (MOPI, 1995). Health care access barriers to children in the Big Timber area include limited local health care services, as well as geographic distance and time required for travel.

A school-based clinic, developed utilizing the COPC process, holistically addresses the comprehensive and specific health care needs of Big Timber youth. A program developed through the COPC process speaks directly to the needs of the community to be served. Such a program is more likely to be successful as community input and commitment play an integral part in the program's developmental process.

In a frontier area, such as Big Timber, where health care resources are scarce and

access to care is limited by geographic distance, the contribution a school-based clinic could make to the primary health care of youths is significant. Geographic distance would not be a barrier if school-based clinics were available locally to youths. Health care would be less fragmented and more comprehensive, with health needs and risk behaviors being recognized earlier. Health promotion and early intervention would prevent these risks and behaviors from developing into more acute and costly problems in the future.

Nurse practitioners are the ideal primary health care provider for a school-based clinic. This is especially so in rural Montana areas where there is a limited variety of health care providers available. Nurse practitioners are primary care providers educated in holistic care, case management, and the coordination of complex health care services. They are also educated to be community and patient advocates. This makes them a logical choice as the primary care provider in the rural school-based clinic setting, as well an integral member of the COPC process. In addition, the utilization of a nurse practitioner in a school-based clinic eliminates the expense of, and need for, a medical director.

Recommendations

As the emphasis of the nation's health care shifts from acute care to prevention and health promotion, school-based clinics have proven to be a viable and effective means of comprehensive health care delivery to children and adolescents. There is limited information available, however, regarding school-based clinics in sparsely

populated areas similar to Big Timber, Montana. While youths in Big Timber have demonstrated health care needs and health risk behaviors similar to their peers across the nation, the health care needs of youths in Big Timber, and other frontier areas, are further compromised by limited availability of services and geographic distance. School-based clinics need to be studied to determine the effectiveness of health care delivery to youths in areas such as Big Timber. It is recommended that nurse practitioners be considered as the primary care providers in such clinics as they have extensive academic preparation focusing on community and holistic health care delivery.

The COPC process allows a structured, organized system of health care delivery and further provides a systematic method of collecting and evaluating clinic based data for analysis and study. It is suggested that the COPC process be used in the development of any school-based clinic to assure that the clinic will meet the specific needs of each school community to be served.

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APPENDICES

APPENDIX A

SCHOOL-BASED CLINIC PLANNING GUIDE

Identify school population and research health care needs *PLAN BEGINS*

- Analyze Youth Behavioral Risk Survey data for Big Timber
- Assess available community health services
- Ask school nurse and administrators what they perceive the needs to be
- Solicit input from student focus groups to define perceived health care needs
- Send out health care access questionnaire to students and their families (see Appendix B)

ONE MONTH

School-based clinic presentations to community groups

- Church groups
- Women's club
- Chamber of Commerce
- Teachers
- Other community groups

3 MONTHS

Identify support for clinics in the community

- Appoint 10 planning task force members
  - Involve community and school representatives
  - Plan to meet monthly: use this guide to prepare monthly agendas
- Continue with student focus groups every 2 months to keep them appraised of clinic development and allow for their input

4 MONTHS

Identify sponsoring agency

- Meet with school administrators
- Consider health department, local health care facilities, if school district not interested

Determine clinic services

- Review needs assessment data
- Discuss controversial services
- Determine primary care services
- Determine laboratory services, if any
- Determine pharmacy services, if any
- Determine clinic hours

5 MONTHS

Determine staffing needs and job descriptions

- Consider a nurse practitioner as primary care provider and clinic director
- Determine necessary staff to support service delivery
- Determine services that will be provided by contract.

Estimate utilization and prepare budget

- estimate utilization based on review of the literature
- for budget estimations, see Appendix C
    - prepare at least a two year budget which includes start-up costs and operative costs

6 MONTHS

Appoint a 5 member finance committee

- Include volunteer task force members
- Identify interested community members
    - Those with grant writing experience
    - Those with fund-raising experience
    - Involve a community health care foundation member

Instruct finance committee to look at a variety of options

- Rural Health Services Outreach Grant, and other grants
- Private Donations
- Grants from local industries such as railroad and power companies
- Local health care foundation monies
- Possibility of billing insurance and Medicaid for some services
- Other

7 MONTHS

Hire primary care provider

- Primary care provider to begin developing clinic protocols and procedures

Identify and negotiate with providers of contracted services

- Begin developing protocols and procedures in their specialty areas

Identify space within the schools to house the clinic

- ♦ minimum of an 8' X 10' exam room
  - Location to facilitate confidentiality and privacy
  - Arrange for any remodeling if necessary
  - must have a sink
- ♦ minimum of an 8' X 10' office space
  - need reception area
  - need locked room to keep records in

8 MONTHS

Order equipment and supplies

Contact CLIA and OSHA officials regarding compliance with regulations

- ♦ Arrange for inspections if necessary
- ♦ Arrange for payment of wavier fees if necessary

Discuss consent issues and determine how to obtain parental consent

- ♦ Involve a lawyer
- ♦ Consider benefits of blanket consent form

9 MONTHS

Review policies and procedures

- ♦ Involve a lawyer to review legal issues
  - reporting procedures for child abuse and neglect
  - maintaining confidentiality
  - STD reporting
  - exchange of information and release of records
  - informed consent

10 MONTHS

Meeting with clinic director/primary care provider and other contracted staff to determine case management and quality assurance issues

- ♦ Case management/collaboration meetings twice monthly
- ♦ Review referral system
- ♦ Set-up procedure for quality assurance review of records
  - Set-up to meet requirements of nurse practitioner's prescriptive authority

Develop procedures for evaluation of clinic

- ♦ Process
  - case conferences every two weeks
  - peer chart review and evaluation of clinic operation quarterly
- ♦ Impact
  - daily records of clinic activities
  - monthly internal utilization review
  - annual clinic utilization review open to the public
- ♦ Outcome
  - Quarterly review and evaluation of client outcomes
  - Annual student survey and assessment of risk behaviors
- ♦ Financial
  - Monthly expenditure review
  - Quarterly expenditure reporting
  - annual internal audit

11 MONTHS

Appoint 7 member clinic advisory committee

- ♦ Clinic director as ex-officio member
- ♦ Task force to appoint advisory committee members
  - appoint 3 community members, a school board member from each district and the principal from each school
  - continue using student focus groups for student input after clinic becomes operative

Open house for students and community members

12 MONTHS: CLINIC OPENS

APPENDIX B

HEALTH CARE ACCESS QUESTIONNAIRE

Dear Parent/Guardian,

We are examining an opportunity for opening a school-based health clinic. The clinic will offer free services to students of the Big Timber Grade School and the Sweet Grass County High School. This is still in the discussion and planning stage. Before we go further, we need to know what you feel the health needs of your students are and what kind of services you believe a school-based clinic should offer.

To receive any school-based clinic service, a student will need permission from his/her parents, but THIS SURVEY IS NOT A PERMISSION SLIP. This survey is a way for you to give us ideas regarding your child's health needs and the potential school-based clinic.

There is no need for you to sign your name on this survey, but it should be returned to your child's school. Thank you for your time.

1. What grade is your child in this year? _____

2. Where does your child get her/his medical care? (circle one)

local clinic

out-of-town clinic

emergency room

other _____

does not receive care

3. How many times in the last year has your child received medical care?

4. How do you usually pay for your child's medical care? (circle one)

private insurance

Medicaid

pre-paid health plan

pay myself

5. How many times has your child been seen in an emergency room in the past year?

6. Where does your child receive dental care?

local dentist

out-of-town dentist

doesn't get dental care

7. How does your child get to medical appointments?

drives own car

parent drives

walks

rides with friend or relative

8. Have there been any times when you felt that your child should have gone to see a doctor when she/he did not go?

yes _____ no _____

If you answered yes to the above question, why didn't he/she go? (circle one)

didn't want to miss school

didn't know where to go

didn't have the money to pay

child refused to go

there was no transportation

didn't have the time to go

clinic hours were inconvenient

other: _____

9. Do you think there should be a free health clinic at the Big Timber schools?

yes _____ no _____

why?

10. Please check the services a school-based clinic in Big Timber should offer.

Medical Services

_____ treatment of minor illnesses
_____ treatment of minor injuries
_____ referrals for more serious illnesses or injuries
_____ routine physical examinations, including sports examinations
_____ immunizations
_____ laboratory testing and health screening
_____ screening and treatment of sexually transmitted diseases
_____ treatment of skin problems, ie. acne
_____ prescribed medications
_____ tests for high blood pressure, diabetes and other chronic problems
_____ dental care
_____ pregnancy detection and referral
_____ developmental testing/screening

Health Education/Counseling

_____ nutrition education
_____ health education
_____ weight reduction programs
_____ drug and alcohol abuse counseling
_____ family counseling
_____ mental health and psycho-social counseling
_____ sexuality counseling
_____ pregnancy counseling
_____ parenting education
_____ job counseling

11. Are you willing to help plan school-based clinics in the Big Timber schools?
yes _____ no _____
if YES, please provide your name address and phone number

When would you be available to meet? (check one)
_____ evening
_____ daytime
_____ anytime

Note. From A Guide to School-Based and School-Linked Health Centers: Volume I (pp.37-39), by D. Hauser, 1993, Washington, DC: Center For Population Options.
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Sarah Walton
HC 88 Box 3609
Big Timber, MT 59011
(406) 932-6633

January 18, 1996

Advocates for Youth
1025 Vermont Avenue NW
Suite 200
Washington DC 20005

Dear Sirs:

I am a graduate student in the Family Nurse Practitioner program at Montana State University in Bozeman, Montana. In fulfillment of the requirements of graduation, I am writing a school-based clinic plan for a local school. I am writing to you to request permission to adapt a questionnaire, from a publication of yours, to include as part of my plan. The questionnaire in question is found in Volume I: Advocating for School-Based and School-linked Health Centers (1993), on pages 37-39, and is entitled *Appendix III: Sample Parent Survey.* Thank you very much for your attention to this matter.

Sincerely,

Sarah Walton
Sarah Walton

Dear Sarah,

You have permission to use the questionnair and to adapt it as you require.

Please be aware that answer keys are not available for the questionnaire.

Sincerely,
Sue Alford
Librarian

ADVOCATES FOR YOUTH
RESOURCE CENTER

APPENDIX C

THE BUDGET

Equipment and Supplies	First Year	Second Year
Exam table (with stirrups) for high school	$950.00	0
Exam table (without stirrups) for grade school	$200.00	0
Portable Otoscope/ Opthalmoscope	$259.00	0
Portable adult blood pressure cuff set	$146.80	0
Portable pediatric blood pressure cuff set	$140.00	0
Two digital thermometers	$22.00	0
Disposable thermometer covers (500)	$11.97	$11.97
Two halogen exam lights	$205.00	0
Four boxes of disposable latex gloves	$37.00	$37.00
Disposable vaginal speculums (quantity: 20)	$17.20	$17.20
Adult disposable otoscopic speculums	$28.36	$28.36
Pediatric disposable otoscopic speculums	$28.36	$28.36
Miscellaneous (tongue blades, exam table paper, bandaids, q-tips, lab supplies etc.)	$300.00	$300.00
Laboratory supplies	$865.15	$265.15
CLIA '88 wavier	$200.00	0
Two locked file cabinets	$300.00	$300.00

Staffing Costs	First Year	Second Year
Nurse practitioner: 16 hours a week @ $25/hour x 10 months	$16,000.00	$16,000.00
Malpractice insurance for nurse practitioner	$350.00	$350.00

Staffing costs (cont.)

Clerk: 16 hours a week @ $6/hour x 10 months	$3,840.00	$3,840.00

Office Expenses	First Year	Second Year
Rent for office space @ high school ($150/month x 10 months)	$1,500.00	$1,500.00
Rent for office space @ grade school ($150/month x 10 months)	$1,500.00	$1,500.00
Utilities for high school office	$500.00	$500.00
Utilities for grade school office	$500.00	$500.00
Miscellaneous office expenses	$350.00	$350.00

TOTAL EXPENSES EACH YEAR:	**FIRST YEAR**	**SECOND YEAR**
	$28,250.84	**$25,528.04**

TOTAL EXPENSES FOR TWO YEARS OF OPERATION: **$53,778.88**