School-Based Health Care for Urban Minority Middle School Students

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ABSTRACT

Objective: To describe the utilization of school-based health care services by urban minority middle school students.

Design: Review of demographic and utilization data collected by service providers during clinic visits.

Setting and Participants: Health care clinics in four middle schools enrolling predominantly Hispanic students residing in an economically disadvantaged, medically underserved New York City school district.

Results: Of 5,757 students enrolled in the schools, 5,296 (92%) obtained parental consent to use and 3,723 (65%) used the clinics during the 1991/92 academic year. Clinic users were 11 to 15 years old; 50% male and 50% female, 81% Hispanic and 14% black; 29% 6th graders, 33% 7th graders, and 38% 8th graders. Clinic users made 16,340 clinic visits during the 1991/92 academic year. Presenting complaints were mental health problems (32%), illness (14%), injury (12%), physical examination (5%), immunization (3%), follow-up (21%), and other (13%). Referral sources were clinic outreach (48%), self (44%), and school personnel (8%). Disposition of visits was on-site treatment (92%), referral to affiliated hospital (5%), and referral elsewhere (3%). Compared to a nationwide group of high school-based clinics serving predominantly black adolescents, these clinics provided more

mental health care (31% vs. 21%), similar illness/injury care (32% vs. 30%), and less preventive (10% vs. 24%) and reproductive/contraceptive (7% vs. 12%) care.

Conclusions: Middle school-based clinics can provide a wide range of primary and preventive health care services for large numbers of medically underserved youths. The provision of mental health services may fill a critical need among inner city adolescents. Clinic outreach may be necessary to maximize utilization, especially among high-risk students.

Key Words: School-based health care, Adolescent health care

INTRODUCTION

Adolescents are the only group in the United States who over the past several decades have failed to improve their health status (1). Urban minority youths in particular have been shown to have high rates of both physical and mental health problems; yet at the same time, tend to infrequently utilize health care services (2). This underutilization may be due at least in part to formidable logistical and financial barriers to the accessibility of such services to inner city youths (3).

During past several decades, several strategies, including the establishment of hospital satellite clinics and hospital-based adolescent specialty clinics, have been employed to provide health care in settings more accessible to adolescents. The growth of school-based clinics in recent years is an extension of this trend, with more than 600 clinics functioning in American schools at present (4). These school-based clinics have been designed specifically to provide convenient and affordable comprehensive health care for medically underserved youths (5).

Although endorsed in principle by several major medical organizations (American Academy of Pediatric News; April 1, 1987:1)(6,7) and by the US Public Health Service (8), to expand and thrive school-based health clinics must demonstrate that they are feasible to operate in the school setting, acceptable to key constituent groups, and effective in expanding the delivery of health care services and improving the health status of students they serve. Some evidence suggests that high-school based health

clinics can achieve these goals (9,10); to date little is known about the feasibility, acceptability, and effectiveness of clinics that are serving younger adolescents.

The Center for Population and Family Health (CPFH) in the Columbia University School of Public Health, in collaboration with Presbyterian Hospital in the City of New York and New York City School District Six, beginning in 1986 established school-based clinics in four middle (grades six through eight) schools in an economically disadvantaged, medically underserved neighborhood in New York City. These four schools serve nearly 6,000 11 to 15 year old students who are 81% Hispanic (predominantly Dominican and Puerto Rican) and 10% black. The clinics in these schools are unique in that they serve a young, new immigrant population that has its ethnic roots in the Caribbean. In this article, we present the utilization characteristics for the 1991/92 academic year of the four clinics operated by Columbia/Presbyterian/ District Six.

MATERIALS AND METHODS

Facility Description: The Columbia/Presbyterian/District Six clinics were established to increase the utilization of comprehensive primary and preventive health care services among medically underserved urban minority adolescents. The goal of each clinic is to identify, prevent, and treat a wide range of physical, psychological, behavioral, and social problems in one

easily accessible location.

The clinics are open from 8:30 a.m. to 4:30 p.m. on all days that the school buildings are open. Each student must have signed consent from his/her parent or legal guardian to register for clinic services. Services are provided at no out-of-pocket cost to the student, but public and private insurance information is sought so that third-party payments can be applied for when appropriate. To protect students' confidentiality, clinic charts are maintained separately from school health records. The signed parental consent form permits access by clinic personnel to students' school records; however, school personnel have access only to the school records.

The primary medical services provided by the clinics include comprehensive physical examinations, health screening examinations, immunizations, first aid, diagnosis and treatment of acute and chronic illnesses and injuries, pregnancy testing, diagnosis and treatment of sexually transmitted diseases, and referral for contraception and other specialized care. The primary mental health services include psychiatric diagnosis, psychosocial assessment, individual and group therapy, parent counseling, and referral for specialized psychiatric services. The primary health education services include classroom presentations, individual health risk assessments, and individual and group counseling.

The clinics are each staffed by the following persons: a full-time nurse practitioner or physician's assistant; at least two full-time master's level, clinically trained social workers;

one full-time bachelor's level health educator; and two full-time clerical personnel. Most clinic staff are bilingual in Spanish and English. Medical supervision is provided by attending physicians from Presbyterian Hospital who are specialists in adolescent medicine, obstetrics/gynecology, and adolescent psychiatry. Social work supervision is provided by a full-time certified senior social worker.

Students are seen in the clinics either as scheduled appointments or as walk-ins. Once students have accessed the clinics, they are triaged either to the medical services division (to be seen by the nurse practitioners/physicians' assistants) or the mental health services division (to be seen by the social workers) by the clerical intake worker on the basis of the student's primary presenting complaint.

Students gain access to clinic services in one of three ways: self-referral, referral by school personnel, or clinic outreach. Self-referral is encouraged by the large-scale promotion of clinic services by clinic and CPFH professional staff. In addition to advertising clinic services through announcements, flyers, posters, assemblies, and school events, clinic staff assist in the teaching of classroom health education curricula and the implementation of conflict resolution programs, provide in-service education and consultation to teachers and guidance staff, coordinate special programs for students at risk for dropping out of school, provide mentoring and other experiences to expose students to the world of work, implement tutoring and other academic skills programs, participate in school re-structuring

initiatives, employ parent advocates who work with other parents to increase participation in clinic and school activities, and deliver parent education workshops.

Two primary outreach mechanisms are used by the clinics. The first is the yearly classroom administration of a health risk behavior survey to all consenting students enrolled in school. The survey, developed and administered in the classroom by CPFH staff, is designed to identify students in need of the medical and mental health services offered by the clinics. Students who answer yes to certain medical or mental health "risk marker" items on the survey (i.e., unprotected sexual intercourse, suicidal ideation/attempts, substance use) are given appointments for diagnostic assessments in the clinics by clinic staff. In addition, all new clinic registrants are scheduled for a health screening, including provision of immunizations when warranted, and all 7th grade students are scheduled for a comprehensive physical examination.

Students who require secondary and tertiary health care services are generally referred to pediatric, pediatric psychiatry, and other specialty clinics at Presbyterian Hospital, located approximately one to two miles from the schools. Because the New York City Board of Education prohibits the prescription or distribution of contraceptive devices on middle school premises, students in need of contraception are referred to the Young Adult/Young Men's Clinics at Presbyterian Hospital. There, students receive free reproductive care, contraceptive counseling and contraceptive devices from the same professional staff as in

the school-based clinics. Record-keeping systems also are shared by the school- and hospital-based clinics to facilitate the tracking of referral outcomes.

Data Collection: Data for demographic characteristics of all clinic users and utilization data for all clinic visits, including presenting complaint, diagnosis or diagnoses, referral source, case disposition, and services provided, are recorded by clinic service providers on clinic encounter forms. Encounter forms are forwarded to the school-based clinic data office, where demographic and utilization data are compiled monthly on computer by research staff.

Students' presenting complaints are grouped by clinic personnel into 7 broad categories (Table 1) to facilitate triage to appropriate service providers. Diagnoses are grouped by research staff into categories (Table 2) that correspond to those in the *International Classification of Diseases, 10th Revision* (11), plus four additional non-disease categories (i.e., mental health, trauma, preventive/well adolescent, and reproductive/ contraceptive). Diagnostic categories were further grouped by research staff into broad service categories (Table 3) to correspond to those used in previous utilization studies.

RESULTS

Demographics: In the 1991/92 academic year, 3,723 students (65% of all students enrolled in school) made 16,340 visits to the four school-based clinics. The average number of visits per student was 4.4. Of all visits, 38% were by appointment and 62% were unscheduled. Nearly 50% of clinic users reported no other regular source of health care.

Table 4 gives the demographic characteristics of students enrolled in the clinics and utilizing the clinics during this period, compared to all students enrolled in the schools. Female students, black students, and older students were overrepresented among clinic enrollees and among medical and mental health visits.

Utilization Characteristics: Table 1 gives the number and proportion of clinic visits by students' presenting complaints. One-third (32%) of visits were for mental health problems and one-quarter (26%) were for illness/injury. Less than one-tenth (8%) of visits were for preventive care (i.e., physical examinations, immunizations). A large proportion (21%) of visits was for follow-up of previous complaints.

Clinic utilization characteristics summarized in Table 2 were as follows:

1. Mental health problems constituted 31% of all visits, and were diagnosed in 36% of all students using the clinics. This category included family problems (e.g., marital conflict, parent-adolescent conflict, sibling conflict, parental substance abuse),

symptoms of psychiatric disorder (e.g., anxiety, depression, post-traumatic stress disorder, substance abuse, conduct disorder, suicidal ideation/attempts), and situational problems (e.g., bereavement, interpersonal problems, non-compliance with prescribed medication, non-specific adjustment problems).

2. Trauma constituted 11% of all visits, and was diagnosed in 18% of all clinic users. Of all trauma visits, 23% were the result of an accident in gym class, 58% were the result of other accidents, and 19% were the result of a physical fight.

3. A variety of infections (otolaryngology, respiratory, infectious disease, gastroenterology, and genitourinary) constituted 15% of all visits, and were diagnosed in 17% of all clinic users.

4. Preventive care constituted 10% of all visits, and well-adolescent was diagnosed in 11% of all clinic users. This category included students presenting for physical examinations for sports participation, working papers, or school entry, and those who required updated immunizations.

5. Reproductive care/contraceptive counseling constituted 7% of all visits, and was delivered to 11% of all clinic users. This category included students who presented for contraceptive counseling, treatment of sexually transmitted diseases, and diagnosis of pregnancy.

6. Other medical diagnoses, nutrition counseling, and miscellaneous services accounted for the remaining visits. These included visits for obesity, diabetes, headache, seizure disorder, hypertension, heart murmur, abdominal pain, sickle cell trait,

anemia, and dental care.

Over one-half of initial clinic visits were the result of the two outreach strategies; namely, the health risk behavior survey and the scheduling of physical and health screening examinations. The diagnostic categories with the highest proportion of outreach referrals were preventive/well adolescent (77%), nutritional problems (73%), and mental health problems (70%).

Two-fifths of presentations were the result of self-referral. The diagnostic categories with the highest proportion of self-referrals were digestive diseases (83%), trauma (78%), and respiratory diseases (72%).

Less than one-tenth of presentations were the result of referral by school personnel. The diagnostic categories with the highest proportion of school referrals were mental health problems (16%) and trauma (13%).

More than 90% of students presenting for care were deemed appropriate for on-site treatment. The diagnostic category with the highest proportion of outside referrals (17%) was reproductive care/contraceptive counseling. Students diagnosed within this category were referred almost exclusively to the affiliated Young Adult/Young Men's Clinics at Presbyterian Hospital.

<u>Comparison with Nationwide Group of High School-Based Clinics:</u>
Table 3 compares the 1-year utilization characteristics of the four Columbia/Presbyterian/District Six middle school-based clinics to those of a nationwide group of 23 high school-based

clinics funded in the late 1980's by the Robert Wood Johnson Foundation (9). The high school-based clinics, located in 11 states, serve an older student population in which black students are overrepresented, compared to the younger, Hispanic-overrepresented student population in the Columbia/Presbyterian/District Six clinics. The average parental consent rate was higher (92% vs. 71%) in the middle school clinics than in the high school clinics. A greater average number of students (931 vs. 685) made a higher average number of visits (4,085 vs. 2,550) to the middle school clinics than to the high school clinics. In addition, the middle school clinics provided more mental health care (31% of visits vs. 21%), similar illness/injury care (32% of visits vs. 30%), and less preventive (10% of visits vs. 24%) and reproductive/contraceptive (7% of visits vs. 12%) care, than the high school clinics.

COMMENT

Feasibility Issues: Most of the school-based clinics across the country offer a wide variety of services, demonstrating that the delivery of comprehensive health care in the school setting is logistically feasible (6). Nationally, over 90% of clinics provide assessment and referral, diagnosis and treatment of minor injuries, primary health care, health and nutrition education, sexuality and pregnancy counseling, and mental health counseling. In addition, more than three-quarters provide physical and

gynecologic examinations, pregnancy referrals, and diagnosis and treatment of sexually transmitted diseases.

In the clinics described in this article, services were expanded from an original core of basic medical and preventive care to include mental health services, health education and promotion, in-service education and consultation to school staff, tutoring and mentoring programs, and parent advocacy training.

Some of the logistical problems reported by other school-based clinics, however, also have been encountered in these clinics. Despite dramatic expansions in recent years, clinic space and staffing still is insufficient to meet the needs of the thousands of students seeking care. Although after-hour, week-end, and vacation coverage is provided at Presbyterian Hospital, students at times are reluctant to or experience barriers when they attempt to access this system. In addition, because of the high volume of utilization of the hospital-based clinics, students requiring non-urgent referrals at times must be wait-listed until appointments are available.

The fiscal feasibility of providing comprehensive health care in the schools in this report as well as in schools nationally also is problematic. In these schools, funding for clinic operation initially was provided by several foundations, while at present the major source of funds for direct services is the State of New York. Although the clinics are certified to receive Medicaid funds, many parents do not apply for Medicaid because of language barriers and immigration concerns. Consequently, only a small proportion of clinic services are reimbursed through

Medicaid. The lack of a stable source of income may pose the biggest threat to the long-term survival of school-based clinics in the United States. Accordingly, the Center for Population and Family Health recently joined forces with the Centers for Disease Control to explore ways in which school-based clinics can more easily access Medicaid funds and become integrated into health system reform plans.

Acceptability Issues: Many school-based clinics appear to have survived the initial controversy surrounding the introduction of medical care into the school setting, gaining broad acceptance from the community, parents, and students alike. Most of the initial controversy was generated by the provision of reproductive health care, including contraceptive counseling and distribution or prescription. Although these types of services comprise only one-fifth of the total visits to school-based clinics nationwide (12), the provision of such services has incited much opposition.

In the clinics described in this article, support for the clinic operation was sought in the early stages of the development process from all key constituent groups, including school personnel, students, parents, and community organizations. Community organizations proved to be particularly helpful in generating widespread support for the clinics. Approval for the clinics also was required from the local school district superintendent, the local school board, the Office of Facilities Planning, the New York City Board of Education, and the New York State Department of Social Services and Department of Health. The

provision of timely progress reports to the key constituent and benefactor groups has played an important role in securing continuing support for the clinics.

Effectiveness Issues: Utilization data reported to date suggest that school-based clinics can at least lay the foundation for favorably affecting adolescent morbidity and mortality by serving a large proportion of ethnically diverse male and female students, providing services and education that address key adolescent health problems, and having multiple contacts with students who have no regular source of health care. Compared to clinics described in previous reports (9,10), the clinics described in this article had particularly favorable utilization characteristics. Thus, in addition to providing a wide range of medical, mental health, and health education services to large numbers of urban minority students, many of whom had no other usual source of health care, these clinics also attained a higher parental consent rate, served a higher proportion of the enrolled student body and a higher proportion of males, and had a higher visits per student ratio than has been reported previously.

The clinics described in this article also provided more mental health care than has been reported previously. Several factors may account for this observation. The first factor is the large-scale promotion -- through presentation, announcements, flyers, posters and school events -- of the mental health services that are available to students in the clinics. The second factor is the yearly school-wide administration of the health risk

behavior survey. This survey was developed specifically to increase clinic utilization among students at highest risk, including those students with mental health problems, such as suicidal ideation/attempts, depression, anxiety, substance use, and assualtiveness. Preliminary analyses of clinic data yielded some evidence that this strategy may be effective in attracting high-risk students to available services. Thus, 79% of the 202 clinic users who reported involvement in unprotected intercourse and 61% of the 202 clinic users who reported suicide ideation/attempts were identified by the risk behavior survey. Further analyses pertaining to this issue are underway and will be the subject of future reports.

Although the accumulated evidence is beginning to support the feasibility, acceptability and accessibility of school-based health clinics, much less evidence currently is available supporting the success of school-based clinics in decreasing students' involvement in risky behaviors and in favorably affecting adolescent morbidity and mortality. In fact, one large study of the effectiveness of comprehensive clinic-based health care programs for high-risk adolescents showed little improvement in health outcomes at 1-year follow-up (13). Other studies of the effectiveness of school-based clinics currently are underway; the results undoubtedly will shed important new light on the impact of such programs (6).

In summary, despite a number of formidable barriers that have yet to be surmounted, the results from this analysis add to the increasing body of evidence that school-based clinics can be

feasible to operate in the school setting and acceptable to key constituent groups, and can provide a wide range of medical, mental health, and health education services for large numbers of medically underserved youths (14). Demonstration of a favorable impact on behavioral and medical outcomes would help to establish school-based clinics as an alternative source of comprehensive health care for adolescents.

Table 1. Number of Visits by Presenting Complaint

Complaint	Number (%)
Mental Health	5350 (32)
Illness	2423 (14)
Injury	1926 (12)
Physical Examination	875 (5)
Immunization	445 (3)
Follow-Up	3444 (21)
Other	2225 (13)

Table 2. Utilization Characteristics of Clinics by Diagnostic Category

	No. (%)		
Diagnostic Category	Visits	Students	Visit/ Students
Mental health	5128 (31)	1342 (36)	3.8
Trauma	1799 (11)	676 (18)	2.7
Eye, ear, nose, throat	1754 (11)	450 (12)	3.9
Preventive/well-adolescent	1715 (10)	407 (11)	4.2
Reproductive/contraceptive	1096 (7)	419 (11)	2.6
Respiratory	919 (6)	206 (6)	4.5
Infectious disease	601 (4)	142 (4)	4.2
Skin	569 (3)	141 (4)	4.0
Digestive	545 (3)	180 (5)	3.0
Musculoskeletal	293 (2)	83 (2)	3.5
Nutritional	225 (1)	44 (1)	5.1
Circulatory	169 (1)	42 (1)	4.0
Hematological	132 (1)	26 (1)	5.1
Genitourinary	122 (1)	28 (1)	4.4
Miscellaneous	1612 (10)	396 (11)	4.1

Table 3. Comparison of Utilization Characteristics of Columbia/Presbyterian/District 6 Junior High School Clinics (C-P-D6) and Nationwide High School Clinics

Utilization Characteristics	**C-P-D6 Clinics 1991-1992 Academic Year**	**Nationwide 1989-1990 Academic Year**
Average		
School enrollment	1439	1483
% of parental consents	92	71
Number of clinic users	931	685
Number of clinic visits	4085	2550
Visit rate	4.4	3.7
Patient visit by race (%)		
Black	14	57
Hispanic	81	19
Other	5	24
Patient visit by service category (%)		
Mental Health	31	21
Illness/injury	32	30
Preventive	10	24
Reproductive/contraceptive	7	12
Other	20	13

Table 4. Demographic Characteristics of Students Using Clinics and of All Students Enrolled in School

Demographic Characteristics	Clinic Enrollment	Medical Visits	Mental Health Visits	School Enrollment
Mean age, y	13.2	13.5	15.1	13.8
Gender, %				
Male	50	45	36	52
Female	50	55	64	48
Race/Ethnicity, %				
Dominican	74	75	69	74
Other Hispanic	6	6	7	7
Black	14	13	17	10
Other	6	6	7	9
Grade, %				
6th	29	27	17	35
7th	33	31	38	33
8th	38	42	45	32

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