

SCHOOL-BASED HEALTH CENTERS

are Making a Difference

An Evaluation Study of School-Based Health Centers
Prepared by:

**SCHOOL HEALTH
CONNECTION**

HEALTHY KIDS + HEALTHY COMMUNITIES

A Program of the Louisiana Public Health Institute

January 2010

ACKNOWLEDGEMENTS:

Algiers Schools Charter Association

Institute for Women and Ethnic Studies

LSU Interim Public Hospital

LSUHSC School of Medicine, Department of Pediatrics

Louisiana Office of Public Health, Louisiana Adolescent School Health Program

Orleans Parish School Board

Recovery School District

Metropolitan Human Services District

New Orleans Charter Science and Math Academy

School Health Connection Steering Committee

Tulane University School of Medicine

Tulane School of Public Health and Tropical Medicine

Warren Easton Charter Foundation

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Chapter 1. Introduction and Summary of Findings

The School Health Connection (SHC) program, a program of the Louisiana Public Health Institute (LPHI), aims to improve the health status of public high school students in Orleans, Jefferson and St. Bernard parishes by increasing access to quality physical and behavioral health care through school-based health centers (SBHC) and other school wellness programs.

The SHC program was established in 2006 by a group of committed school based health center (SBHC) providers and school leaders who were organized as the School Health Initiatives Network (SHINe). All five of the SBHCs in Orleans Parish had been closed or destroyed by Hurricane Katrina. The Louisiana Public Health Institute assisted SHINe in securing a grant from the W.K. Kellogg Foundation to recover and expand the network of SBHCs in the New Orleans metropolitan area and to improve access to care and health status of youth by providing high quality physical and behavioral health in SBHCs. The resulting program, School Health Connection (SHC), aims to improve the health status of public high school students in the Louisiana parishes of Orleans, Jefferson, and St. Bernard by increasing access to high quality physical and behavioral health care at school-based health centers (SBHCs).

What makes school based health centers unique?

- SBHCs are doctor's offices or health clinics located on a school campus. The health care services provided at SBHCs far exceed what is possible in the typical school nurse program and includes preventive care, comprehensive primary care including acute diagnosis and behavioral and mental health care services.
- SBHCs are holistic in their approach, integrating primary care and behavioral and mental health services. The service model and staff understand that prevention and illness processes are integrally related to both physical and emotional wellbeing.
- SBHC services are tailored to youth, and provide age-appropriate care and thus there is a high level of acceptance and satisfaction among students which contributes to the effectiveness of the services.

Our study

In spring 2009, a survey of 2,011 students was conducted in six public high schools in Orleans parish to collect information on their health, health-care seeking behaviors, and other aspects of their lives that might impact their mental and physical well-being. A quasi-experimental research design was utilized, involving three intervention schools with SBHCs and three comparison schools slated to eventually contain SBHCs. The principal goal of the research was to ascertain the effectiveness of SBHCs in increasing access to and utilization of essential health services (e.g. behavioral health counseling and treatment, annual physicals, routine curative care, reproductive health counseling), as well as a promoter of healthy lifestyles and good decision-making in a complex and often difficult urban environment.

Key study results include the following:

- **Description of Study Sample:** Approximately 90% of the sampled students in the public high schools were African American, and approximately 60% were female. Poverty is endemic in the student population. Approximately 25% reported that the principal source of household income was welfare, social security or unemployment benefits. Just over 68% reported receiving free lunches at school, and 11.6% report being chronically hungry due to food shortages at home.
- **Use of SBHCs:** Among students at SBHC schools, 62% reported that they are “enrolled” at their SBHC and, among these, 84% reported having used the SBHC in the last year. The most common reasons cited for the last visit included headache (17%), cramps (16%), stomachache (8%) or other (27%) although SBHCs deliver acute care and often diagnose complicated conditions that might otherwise go undetected. In the past 12 months, 23% of SBHC-enrolled students reported using the SBHC for behavioral health, while 34% reported using it for an annual physical. Males in SBHC schools were 8 percentage points more likely to have had an annual physical in the last year than students in non-SBHC schools.
- **Access to and Use of Health Care:** Students were asked about recent illnesses/injuries and treatment seeking in response to acute care needs. Ill / injured students in SBHC schools were more likely to have sought care – as opposed to doing nothing – than students in non-SBHC schools. However, it was very unlikely (<1 %) that either SBHC or non-SBHC students used the ER for a recent illness. When they have needed care, SBHC students were 6 times more likely to have used a school source.
- Also, SBHC students...
 - ... were more likely to have exercised in the past 30 days
 - ... were more likely to have been told that they have diabetes
 - ... were less likely to have had sex
 - ...more likely to have been tested for an STD
 - ...but, among sexually active, were less likely to be using contraception, more likely to have used alcohol or drugs during last sex, and more likely to have ever been pregnant/gotten someone pregnant.
- **Behavioral Health:** Students reported a high prevalence of anxiety and depression-like symptoms. Nearly 21% of males and a third of females reported chronic feelings of sadness and inability to undertake normal tasks, and just over 10% reported that they had seriously considered suicide in the last year. This is less than the national average. Nationwide, 14.5% of students reported seriously considering attempting suicide in the past year according to the 2007 National Youth Risk Behavior Survey. SBHCs have played an important role in increasing access to and use of behavioral health services. For example, in schools with an SBHC, students with suicidal ideation were 11 percentage points - 35% versus 24% - more likely to have seen a behavioral health (BH) counselor in the last year than similar students in schools without a SBHC. Further,
 - SBHC students were more likely to have ever met with a BH counselor, to have talked with a BH counselor in the last 12 months, and to have seen a BH counselor more frequently in the last 12 months.

- SBHC students were twice as likely to have been treated for a BH issue by a school clinic or other school health provider as students in non-SBHC schools.
- African American males are using medical and behavioral health services in SBHCs. This is a particularly at risk population that are not receiving these services anywhere else, and are being effectively reached in SBHC settings.
- Substance Abuse: Students from schools with SBHCs were less likely to participate in underage drinking and marijuana use.
- Violence and Threats of Violence: Violence is a fact of life for a considerable proportion of high school students in New Orleans. For example, 20% of male students had carried a weapon in the last month, including 6% who carried a weapon to school. This is somewhat lower than the national average, which shows that 28.5% of male students and 7.5% of female students carried a weapon in the past month. Over 12% of males and females had skipped at least one day of school in the past month because they felt unsafe at school on the way to or from school, which is more than double the percentage of 5.5% of students in the national 2007 YRBS. Over 10% of males reported having been threatened with a weapon on school property in the preceding 12 months. Of these, nearly a third reported that they had carried a weapon on school property in the last month, as compared with only 4% of males who had not been threatened.
- Violence, Behavioral Health and Scholastic Achievement: The relationship between violence, mental health and school achievement is stark. While nearly a third of students reported being so sad or hopeless for at least a two week period in the last year that they stopped doing some usual activities, students who had been the victims of threats had nearly double the likelihood of such episodes of depression. They were nearly three times more likely to have seriously considered suicide in the last 12 months. Girls who reported having been physically forced to have sex were nearly three times as likely to have considered suicide.

In spite of their relevance for addressing the comprehensive health needs of our most vulnerable youth and the support they provide youth in achieving their educational goals, SBHCs continue to struggle for sustainability. However, this is an opportune time for showing such positive results for SBHCs. At the time this report was written, SBHCs were designated in both the House and Senate versions of the national health reform bill. The language provides for cost-based reimbursement and health plan reimbursement for SBHCs, and requires that State Medicaid programs reimburse school-based health clinics on the same basis as they reimburse federally-qualified health centers (FQHCs). The House version establishes a new program to support school-based health clinics that provide health services to children and adolescents and authorizes \$50 million for FY 2011 and such sums as may be necessary for each of FY 2012 through FY 2015 to carry out this program.

Chapter 2. Study Description

Recent evaluation studies of the effectiveness of SBHCs have ranged in their focus and results. An analysis of service profiles from 1,135 SBHCs included in the 1998-1999 Census of School –Based Health Center, collected by the National Assembly on School-Based Health, examined accessibility and accountability of SBHCs and found that students in schools with SBHCs had a high level of acceptance of the services based upon utilization.¹ Mears et al surveyed 81 students who had received prescriptions from SBHCs to determine if they had been filled and 45% of students 76% of this group reported compliance in taking medications, concluding that medication fill and adherence rates among SBHC users were not optimal.² Although small in sample size, Kaplan et al conducted a comparison study interviewing demographically similar parents from a middle school with a SBHC and one without and found that parents of students reported that the SBHC had increased access and utilization of care, including improved access for uninsured and insured students, that SBHC students were less likely to use the Emergency Room, and that there was high level of satisfaction for SBHC services.³ Most of these and other studies have shown a positive impact for SBHCs, especially for rural and urban underserved students.

The rebuilding of new SBHCs in new schools in Orleans Parish after Hurricane Katrina in 2005, was an opportune time to assess their benefits. As part of a comprehensive evaluation plan for the new SBHCs, SHC with support from the Evaluation Division (another service unit at the Louisiana Public Health Institute) conducted a comparison study of Orleans parish public high schools with and without SBHCs in the spring of 2009. The overall goal was to measure the impact of the program on key indicators of access to care, and on students' physical health and behavioral health. Further evaluation objectives are outlines below.

a. Evaluation Objectives

The survey collected information on basic health needs and use (and non-use) of health services in School-Based Health Clinics in the parishes of Orleans, and Jefferson. The study answers the following questions:

1. What are the demographic, behavioral and health profiles of students at schools with SBHCs who use different SBHC services versus students who do not use such services?
2. What percentage of “need” for SBHC-type services is met by SBHCs (e.g. behavioral health, routine acute care, counseling for reproductive health)?
3. Are there differences in outcomes (physical and behavioral health) as a function of access to and use of SBHCs?
4. Do students who use SBHCs have lower levels of emergency room use of non-emergency conditions compared to students who do not use SBHCs?

b. Survey Methods

Students in three schools providing health services through a SBHC were compared with students in three schools that did not have a SBHC but were on a waiting list to have one. A follow-up survey is intended for 2011/2012.

c. Survey Development

A quantitative survey instrument was developed for this study. The design of the survey, including the questions, protocols and sampling methods, was modified from the Youth Risk Behavior Survey (YRBS), which was carried out both nationally and in New Orleans in 2007. At that time, the Louisiana Department of Education (LA DOE) also implemented a state-wide YRBS. The 2007 surveys, however, were insufficient to meet the evaluation needs for the SHC program for several reasons. First, questions regarding exposure and use of SBHCs were not included in those surveys because health services utilization was not a principal focus. Second, only a small fraction of the schools with SBHCs in neighboring parishes were included in the state-wide sample and therefore very little baseline information would have been available for those schools. By 2009, the data from the 2007 surveys were no longer considered to provide an accurate representation of the current situation in Orleans parish schools. These data provide useful baseline data for the SHC program.

Key components of the questionnaire included the following:

- Demographics (age, gender, race)
- *Substance* abuse
- Sexual behaviors (identical to the YRBS)
- Body weight and exercise
- Mental health and treatment
- Other health issues (e.g. diabetes, hypertension, family planning, dental care, routine screening) and treatment
- Sexually transmitted diseases
- Use of SBHC health services and satisfaction with such services
- Emergency Room visits and reasons for such visits

d. Data Collection Procedures

Six Orleans Parish Schools were selected for participation through their association with School Health Connection (SHC) and divided into two groups: three schools with an operating SBHC and three schools planning to receive a SBHC in the near future. The survey administration method also closely followed YRBS protocol as many of the participating schools were familiar with it. A survey coordinator was identified within each school, and he/she was responsible for training the necessary

school staff to administer the survey, collecting the surveys, and tracking the completed surveys.

One week prior to the survey administration, passive parental consents were sent home with the students. If parents requested that their child not participate, the student was provided with an alternative activity by the school. Questionnaires were administered during a class period designated by the school on a specified day or over a few specified days depending on the class schedule. A student consent form was administered with the survey to ensure that participation was voluntary. The surveys took about 30 – 45 minutes to complete and utilized a scantron answer sheet separate from the questionnaire form.

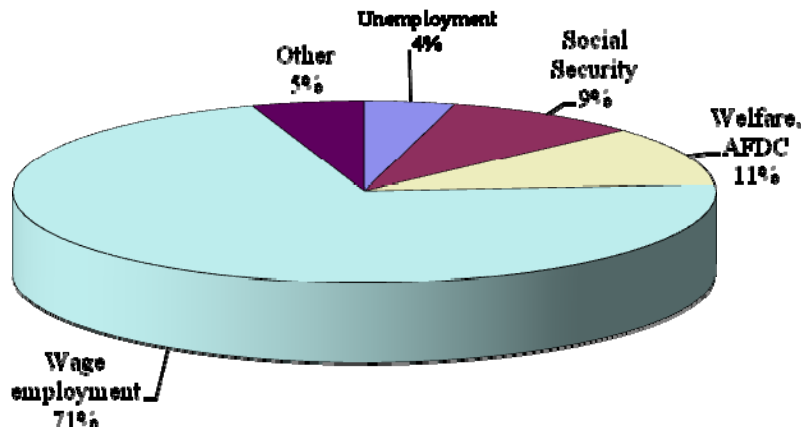
The completed surveys were collected by SHC evaluation staff from the survey coordinator and tracked via school and class before being delivered for the data scanning and cleaning process. All schools received a stipend of \$1000, with \$100 designated for the study coordinator. Any additional incentives for other staff assisting in the survey were at the school’s discretion. All schools conducted the survey in April 2009 and schools 4, 5, and 6 finished the surveys in May 2009. Enrollments and response rates for each school are shown in Table 2.1. The overall response rate for Orleans parish was 76.2%.

School	Total Enrollment	Response Rate (%)	SBHC Status	# Students Enrolled in SBHC	Total Patient Visits
School 1	324	79.9	Yes	365	2,121
School 2	541	73.9	Yes	688	2,583
School 3	730	47.5	Yes	289*	1,246
School 4	866	79.9	No	0	0
School 5	376	41.0	No	0	0
School 6	591	18.3	No	0	0
TOTAL	2,562	76.2	----	1,342	5,950
* This number could not be verified by the clinic staff.					

Chapter 3. Profile of Students in Sampled

High school students in public schools in New Orleans face a number of social challenges. For example, poverty is a fact of life for a significant proportion of students in this sample. Approximately one quarter of students reported that their household's principal source of income was from a non-wage source, including 11% of students who reported that their households relied principally on welfare or AFDC and 9% who relied principally on social security. Just over 70% of students reported that the principal source of household income was wage employment.

Figure 1. Principal Sources of Household Income



Not surprisingly therefore, hunger was present in many of these students' lives. Approximately 11% of students reported that, during the past 30 days, they had "sometimes," "most of the time" or "always" gone hungry because there was not enough food to eat in their homes. Just over one-quarter of students reported that someone in their household was in the free lunch program.

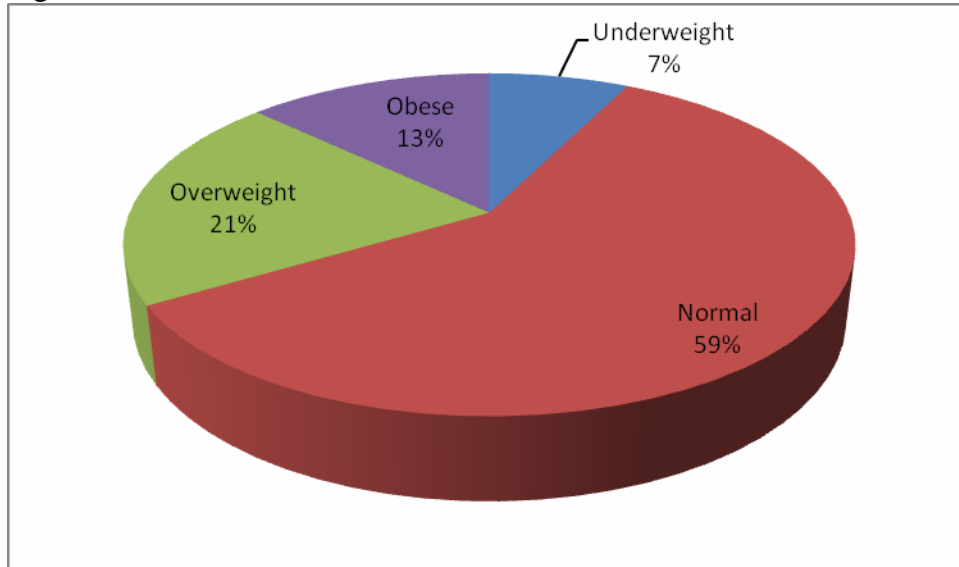
The sample of surveyed students was predominantly female (59.5%) and overwhelmingly African American (90%). Just over 1 percent of students were white and just under 2 percent were Hispanic. Five percent of the sample was Asian.

Chapter 4. Students' General Health

a. Height, Weight, Body Mass Index (BMI) & Physical Activity

Fewer than 60% of students were classified as being of normal body mass index, while an additional 20.5% were “overweight” and 13.0% were “obese.” Although obesity rates were the same as the national average (2007 YRBS), the prevalence of being overweight among this sample was higher at 21.5%. In these schools, Obesity was higher among older students – 21.5% of 18 year olds were obese relative to only 8.7% of students under the age of 15. Males were also more likely to be overweight or obese than females. There were no statistically significant differences in BMI status between students in SBHC schools relative to those in non-SBHC schools.

Figure 2: BMI



Perceptions of being overweight seemed to follow actual weight status. The majority of students (60.4%) described their weight as the “right weight.” This very closely paralleled the percentages that are actually of normal weight. Just over one-fifth reported that they are slightly overweight, and an additional 3.3% said they were “very overweight.” More females than males said that they were “slightly overweight” or “very overweight,” as did older students. Among those who were overweight or obese, 57% recognized that they were “slightly overweight” or “very overweight,” but 38% said that they were “about the right weight.”

Only a small fraction of students indicated that they were doing nothing about their weight. Almost 40% were trying to lose weight, and an additional quarter was trying to maintain their current weight. Among those who were overweight, 63% were trying to lose weight, and 78% of those who were obese also reported trying to lose weight.

Figure 3: BMI Comparison between national teams and comparisons

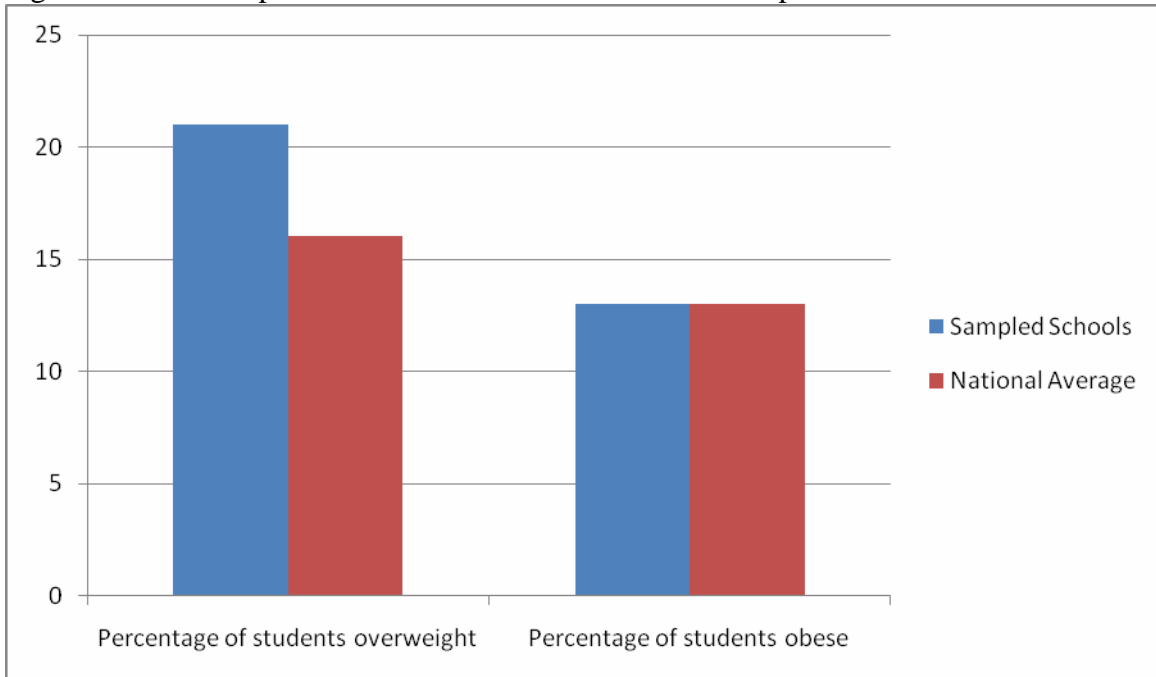
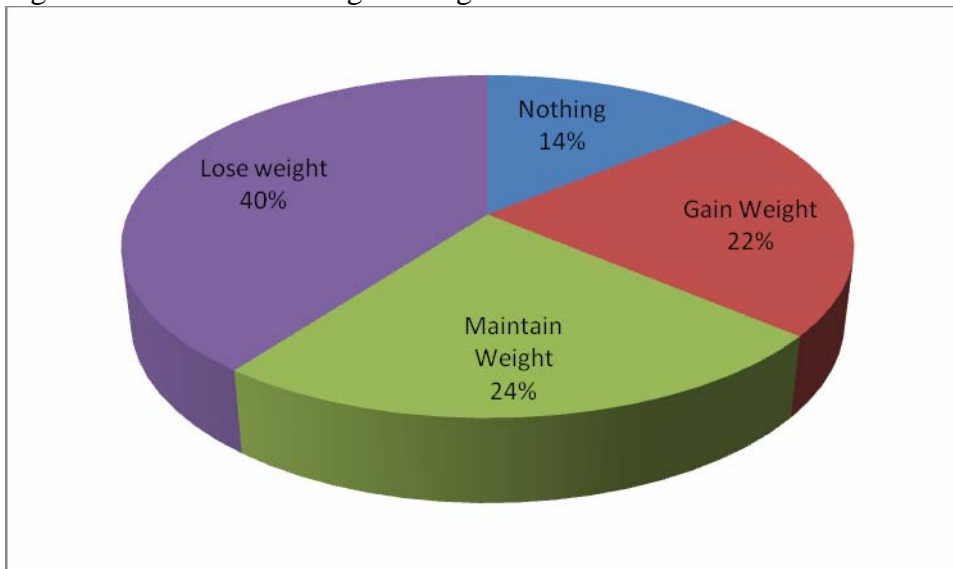


Figure 4: Desire to lose or gain weight



Just over half of students claimed that they exercised in the past 30 days to lose weight or to gain weight. This percentage was only slightly higher for females (53.8%) relative to males (52.0%). Students in SBHC schools were slightly more likely to report exercising, but this result was not statistically significant. Most significant was the relationship between weight and exercise. Nearly three-quarters of

those who were obese – and 69% who were overweight – reported that they exercised to lose weight as compared with less than half of those of normal weight.

Only one quarter of students reported that they did not engage in any physical exercise exceeding 20 minutes in the last week. Inactivity was higher among females than males – 32% of females reported no activity versus only 20% of males. One quarter of males reported exercising every day during the last week. Obese students reported the highest levels of activity, were the most likely to report exercising every day in the last week, and were the most likely to report walking outside for 10 minutes or more in the past week.

b. Diabetes and Hypertension

While levels of obesity and being overweight were similar for students in SBHC schools and non-SBHC schools, diagnoses of diabetes and hypertension were more frequent among students in SBHC schools. Overall, approximately 3.5% of students reported that they had been told by a doctor that they have diabetes. This percentage was higher for students in SBHC schools (4.3%) relative to non-SBHC schools (2.7%, $p=.078$). It was also higher for seventeen and eighteen year old students relative to younger students, for males (4.7%) relative to females (2.7%, $p=.001$), and for obese students (5.0%) relative to normal weight students (2.5%, $p=.058$). Just less than 12% of students also reported that they had been told that they have high blood pressure, with patterns mirroring those of diabetes. Students in SBHC schools were more likely to be told that they had high blood pressure relative to non-SBHC schools (12.5% versus 10.9%, non-significant [NS]). Similarly, males were more likely to have high blood pressure relative to females (13.9% versus 10.2%, $p=.009$), as were and obese students relative to normal weigh students (20.6% versus 8.6%, $p=.000$).

c. HIV/AIDS

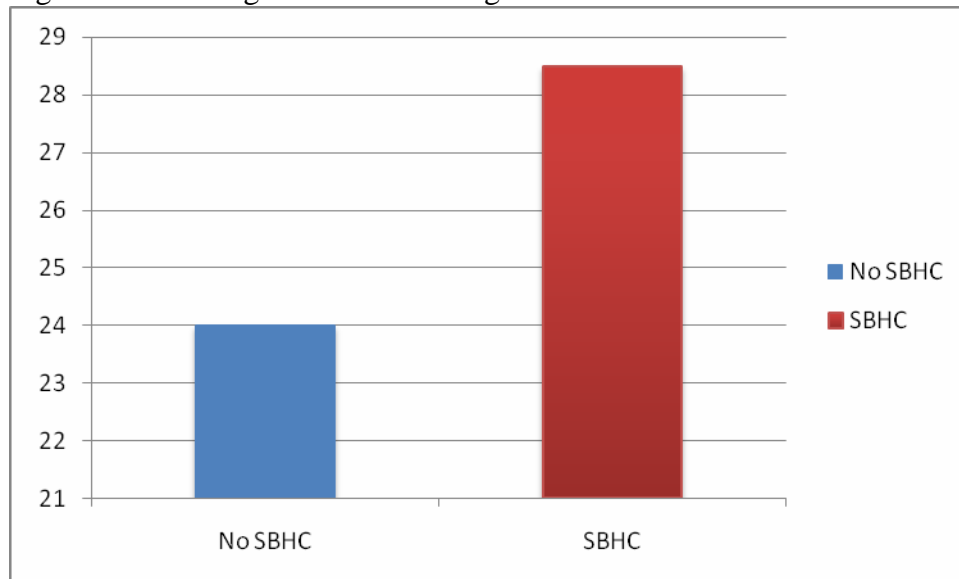
Exposure to HIV/AIDS education, at least according to students' self-reports was not universal. The majority of students, roughly 82%, recalled having been taught about HIV/AIDS in school. This percentage was slightly lower in SBHC schools (81.4% versus 83%), but was higher among females and among poorer students participating in the free lunch program. Less than a quarter of students (22.7%) have ever been tested for HIV, at least to their knowledge. This percentage is slightly higher among females than males (23.9% versus 21.0%), increases with age, and is higher among students receiving free lunches. The majority of tests occurred within the last 12 months.

d. Sexually transmitted diseases

Students in schools with a SBHC are less likely to have ever had sex than students in schools without a SBHC; they also report higher rates of STD testing. Approximately 26% of sampled students reported that they have been tested for a sexually

transmitted disease, such as Chlamydia, gonorrhea or syphilis, but this percentage was higher among SBHC school students. There is a significant difference between students of SBHC schools and students of non-SBHC schools (28.5% versus 24.0%, $p=.021$). Females were more likely to be tested than males (27.8% versus 24.2%, $p=.023$). Only 15% of 15 year olds had been tested for an STD compared to 41% of 18 year olds. Among those who had been tested for an STD, over 70% had been tested within the past year. Students in schools with an SBHC were also more likely to have been tested in the past year than students in schools without an SBHC.

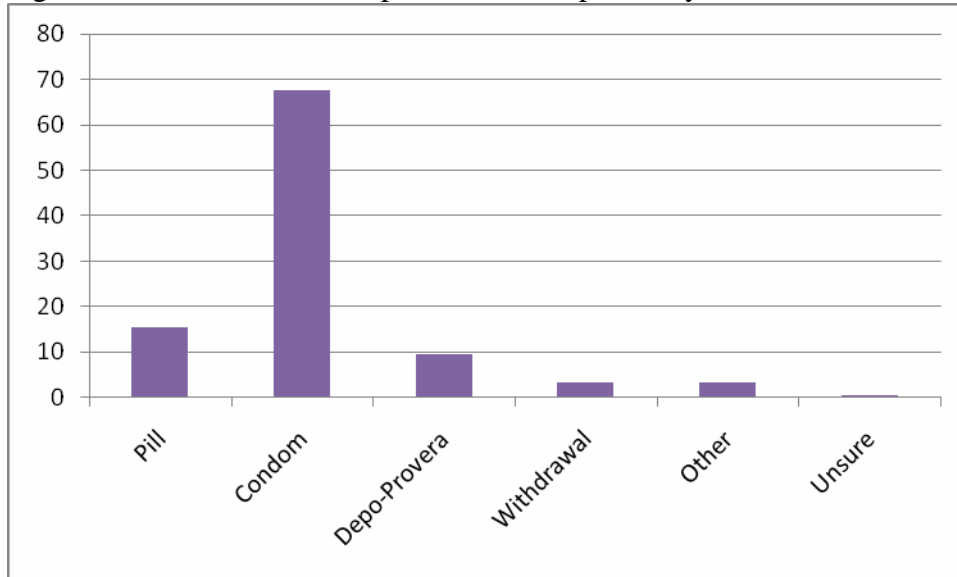
Figure 5: Percentage of students being tested for STDs



e. Contraceptive Use

SBHCs are not permitted to dispense contraceptives both in Orleans parish and statewide, though contraceptive needs are significant. Instead SBHCs can provide counseling and health information to address reproductive health including abstinence and safe sex practices. Although 57% of total students surveyed reported that they have had sex, approximately one-third of students reported that they were currently using a method of contraception to avoid pregnancy. This percentage increased with age and sexual activity. Roughly 40% of 17 and 18 year olds reported using some form of contraception, relative to less than 15% of children under the age of 15. Among sexually active youth, just over half reported using a method of contraception. Males were slightly more likely to report using contraception relative to females (35.6% versus 32.3%), while students in SBHC schools were less likely than students in non-SBHC schools to use contraception (31.4% versus 35.9%).

Figure 6: Method of contraceptive used as reported by all students



Condoms were the principal contraceptive method (67.5%) cited by those students reporting contraceptive use, followed by pill/oral contraceptive (15.6 %) and injectable methods / Depo Provera (9.5%). Males almost exclusively reported using condoms (92%), though use of withdrawal was also noted (3.3%). Oddly, respondents who reported being non-sexually active indicated that withdrawal and condoms were used.

Chapter 5. Awareness and Use of Any Health Services

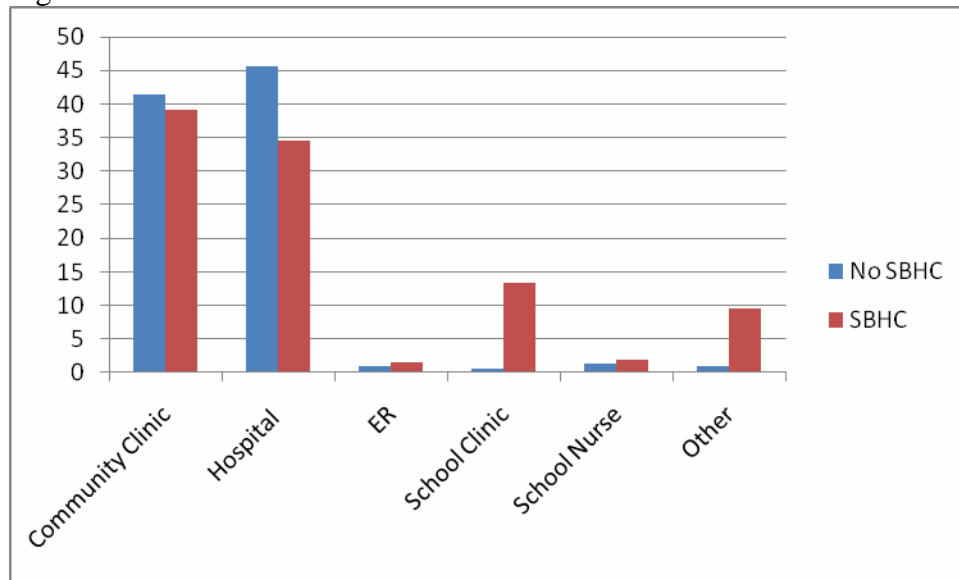
a. Usual source of health care

An important role for SBHCs is to provide a source for easy, regular and timely access to high quality health services, particularly given the sharp reduction in the supply of health providers following hurricane Katrina. To assess students' access to health services, students were asked about their usual source of health care.

Approximately 72% of students reported that they have a place that they normally go for health care, but 22% said that they did not. Females were much more likely than males to have a place for care (77.2% versus 63.9%), as were students participating in the free lunch program.

While students in SBHC schools were not more or less likely to have a usual place for health care than non-SBHC students, they were considerably more likely to report that their normal source of care was school-based, either a school clinic (13.4% versus 0.5%) or a school nurse (1.9% versus 1.4%). A high percentage of students (just over 40%) reported that their usual source of care was a hospital, but only a small fraction (1.2%) reported that an emergency room was their normal source. Females were more likely than males to rely upon community clinics (43.0% versus 35.5%), while males relied more heavily on hospitals (48.3% versus 35.5%).

Figure 7: Location for health care



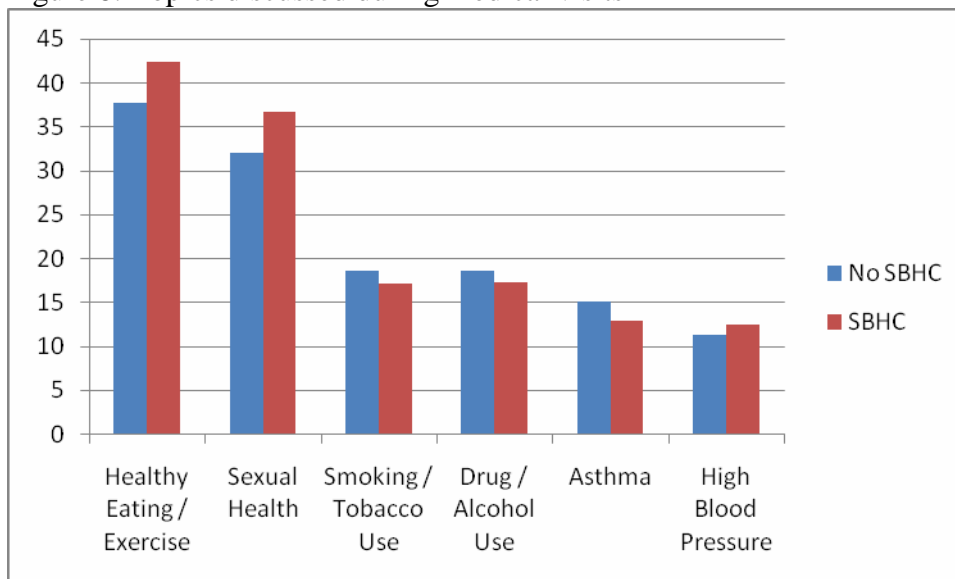
Approximately three-quarters of students (with a usual source of care) reported that they sought care in the past year. The most common reasons were for a sports physical (50.2%), a routine checkup (26.1%), family planning or an illness (16.7%).

b. Annual physical and Recent Check-ups

An important function for SBHCs is to ensure that students have regular checkups and to educate students about relevant health issues. When asked directly, only 41% of students reported that they had had an annual physical or sports examination in the last year. This percentage was lower in SBHC schools ($p=.023$) and among females ($p=.000$). When asked about the last time that the student had seen a doctor or nurse for a check-up or physical exam absent illness or injury, just over half reported that this visit had occurred in the last 12 months. Only 15% reported that they had never had such an exam. Females were more likely to have seen someone in the last year, but there was no statistically difference in use between SBHC and non-SBHC students.

Students were also asked about health topics that they had ever discussed with a doctor or nurse in a medical setting, including in a school-based clinic. Approximately 40% reported having discussed healthy eating or exercise with a medical practitioner. This percentage was higher for students with SBHCs – 42.4% versus 37.7% ($p=.031$). Just over a third reported that they had discussed sexual health and STD or pregnancy prevention with a medical provider. Again, this percentage was higher among SBHC students (36.7% versus 32.1%, $p=.029$).

Figure 8: Topics discussed during medical visits



c. Dental care

Approximately 12% of the students sampled had never seen a dentist, while 59% had seen a dentist in the past year. This pattern was similar across age, gender and access to a SBHC.

Chapter 6. Awareness and Use of School Based Health Center Services

The majority of students in schools with a SBHC were aware of the presence of the SBHC at their school (85.3%). Further, in schools with an SBHC, the majority of students (68.7%) were also enrolled in that program. Females were more likely to be enrolled than males (74.5% and 60.6% respectively, $p < .01$), and 39.4% of students reported having used the SBHC at least once. Female students were more likely to use the clinic than male students ($p < .01$), but use was not associated with age. Among all students, 23.2% of students reported using the SBHC for counseling or behavioral health. This was not associated with age or sex. A further 39.4% of students reported using the SBHC for a sports or comprehensive physical. Male students were more likely to use this service than female students (49.0% and 66.9% respectively, $p < .01$). This was not associated with age. The most common reason students reported for their last visit to the SBHC was for cramps or headache. In addition, 5.9% of most recent visits were for STD testing, and 3.6% were for counseling.

Figure 9: Knowledge, enrollment in, and use of SBHC among students in schools with SBHCs

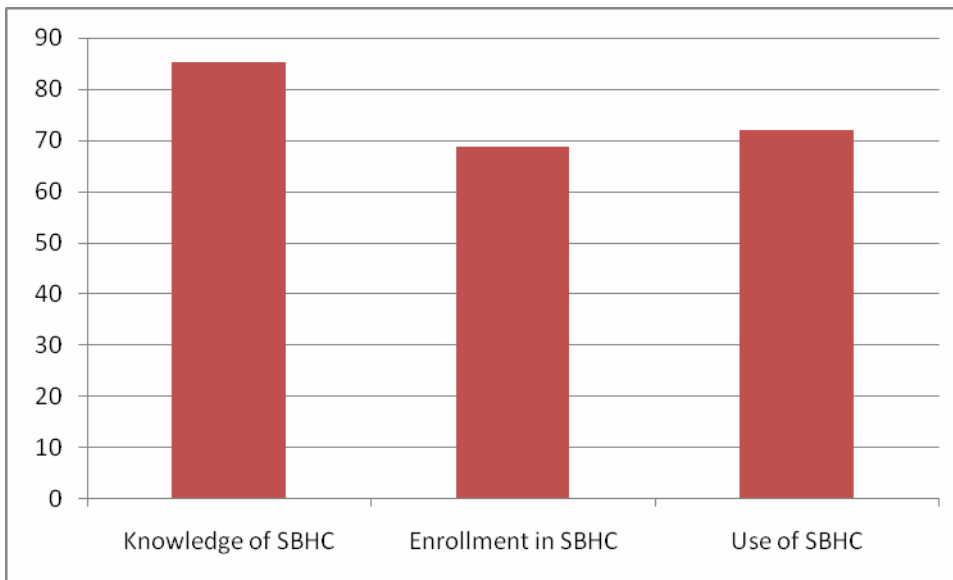
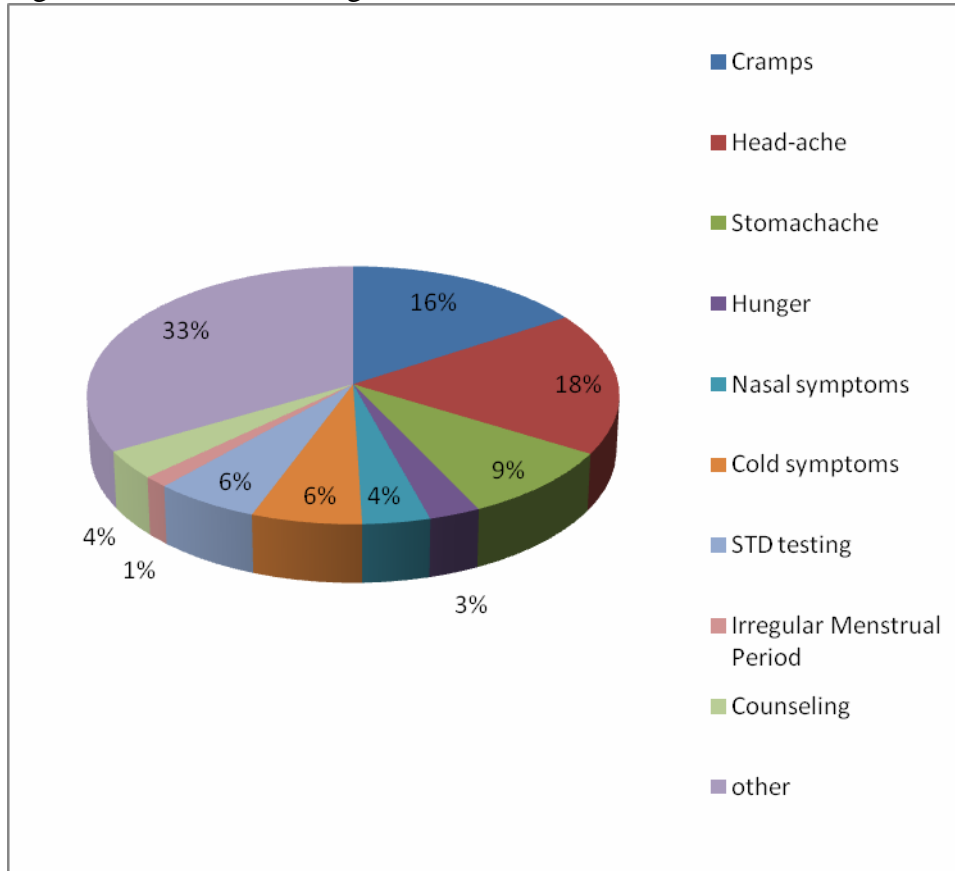
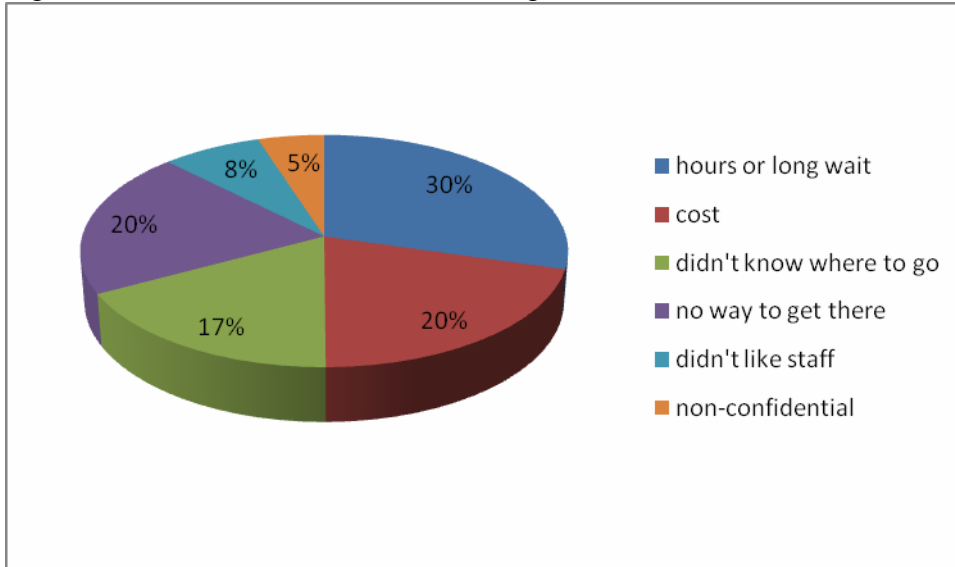


Figure 10: Reason for using SBHC



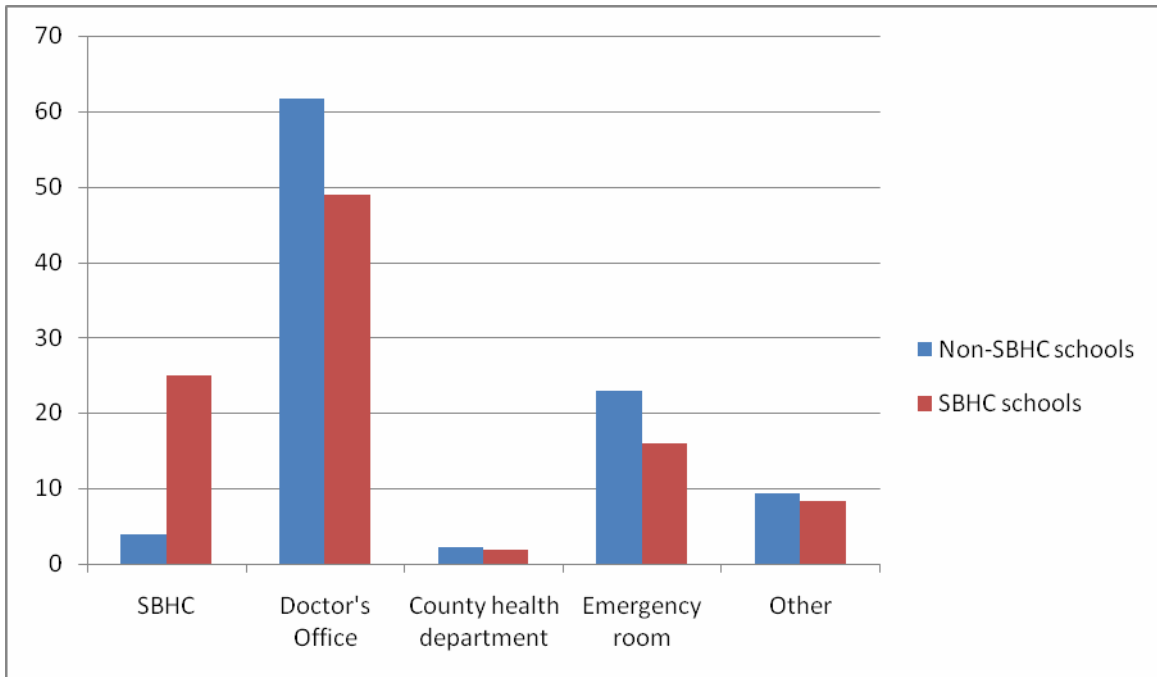
A significant proportion of students (22.3%) reported needing medical care in the last 12 months and not receiving it. The rate was slightly lower among schools with a SBHC (20.8% compared to 24.2%), but this was not statistically significant ($p = 0.14$). This rate was also not associated with age or sex. The top 3 reasons, cited for not receiving medical care besides “other” were that the wait was too long or that the hours were inconvenient, that services were too costly, or that students had no way of getting to medical care.

Figure 11: Reasons cited for not receiving medical care (besides “other”)



Most students (55.3%) said that they would go to a doctor’s office if they needed medical care, while 19.5% of students said that they would seek out the ER. In schools with a SBHC, 24.9% of students said they would seek out the SBHC for medical treatment if needed. Comparing students in schools with an SBHC to those students in schools without a SBHC, students were more likely to say school clinic and less likely to say doctor’s office or ER ($p < .01$). This was not associated with age or sex.

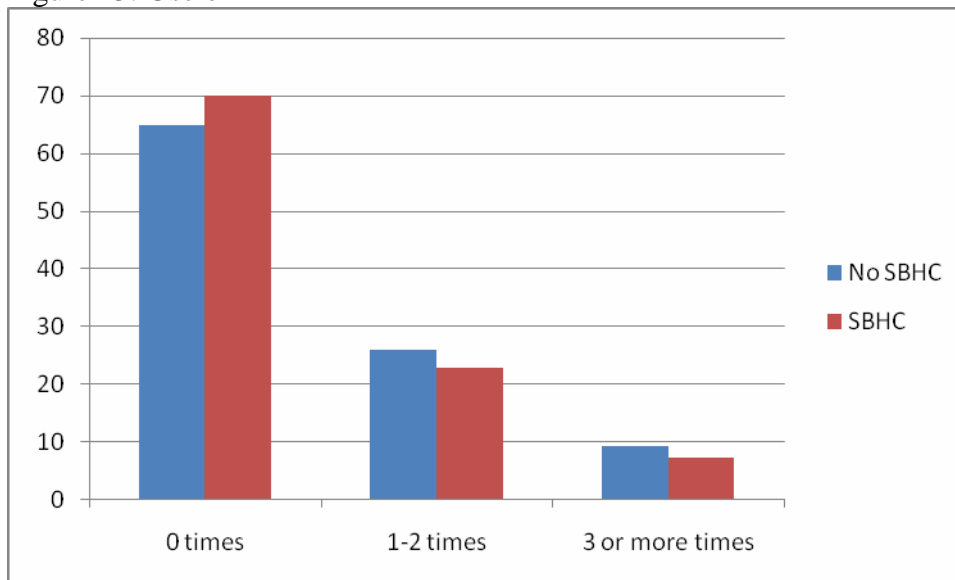
Figure 12: Differences in sources of care between students in SBHC schools and students in non-SBHC schools.



Approximately one third of students (32.6%) reported visiting the ER in the past 12 months, with 8.2% of students reporting having done so 3 or more times. Students from schools with a SBHC were less likely to visit an ER than students from schools without a SBHC (29.7% and 35.1% respectively), but this association was not statistically significant ($p = .05$). Female students were more likely to have used the ER than male students ($p < .01$), but age was not associated.

A small but significant proportion of students (11.3%) reported staying overnight in the hospital in the past 12 months. Older students were more likely to have stayed in the hospital ($p < .01$), but this was not associated with sex or having a school clinic.

Figure 13: Use of ER

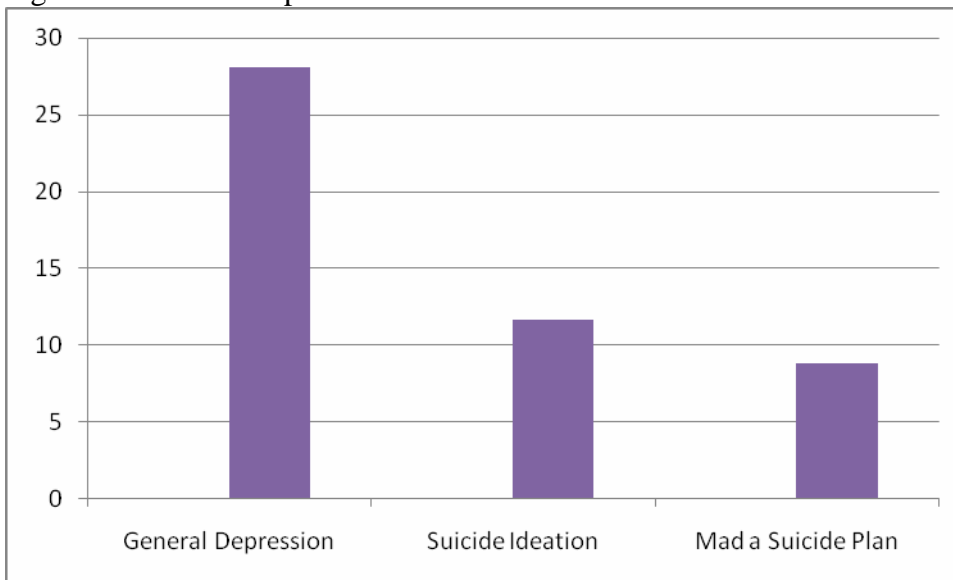


Chapter 7. Use of Mental and Behavioral Health Services

Nearly 30% of students report general symptoms of clinical depression, with girls suffering from depression more often than boys (32.8% compared to 21.3% respectively). Students in schools with SBHC clinics had more reported depression than schools without clinics (29.3% compared to 26.9%), but this difference was not statistically significant.

Suicide ideation was also quite high. In the last 12 months, 11.6% of students had seriously considered attempting suicide, and 8.8% of students had made a plan in the past year. A higher percentage of girls than boys reported seriously considering suicide and making plans in the past 12 months. These differences were marginally significant ($p=0.02$, $p=0.06$ respectively). Younger students tended to be more likely to report suicide ideation than older students, though this difference was not statistically significant. Rates of suicide ideation in students with SBHCs were no different than students in schools without clinics.

Figure 14: General depression and suicide ideation



Emotional support was similar among groups, with students in SBHC schools more likely to get their support from a school nurse or a school counselor ($p < .01$). The majority of students (78.6%) reported having an adult outside of school with which they could discuss important things.

Students were more likely to have talked with a behavioral health counselor, psychologist, or psychiatrist if they went to a school with a SBHC (29.8% and 23.0% respectively, $p < .01$). The difference was similar with students in the past 12 months (16.5% and 11.6% respectively, $p < .01$). Students visiting behavioral health counselors, psychologists, or psychiatrists who were not in schools with a SBHC reported fewer

visits to these health professionals than students in schools without an SBHC. This trend was not, however, statistically significant ($p = 0.065$).

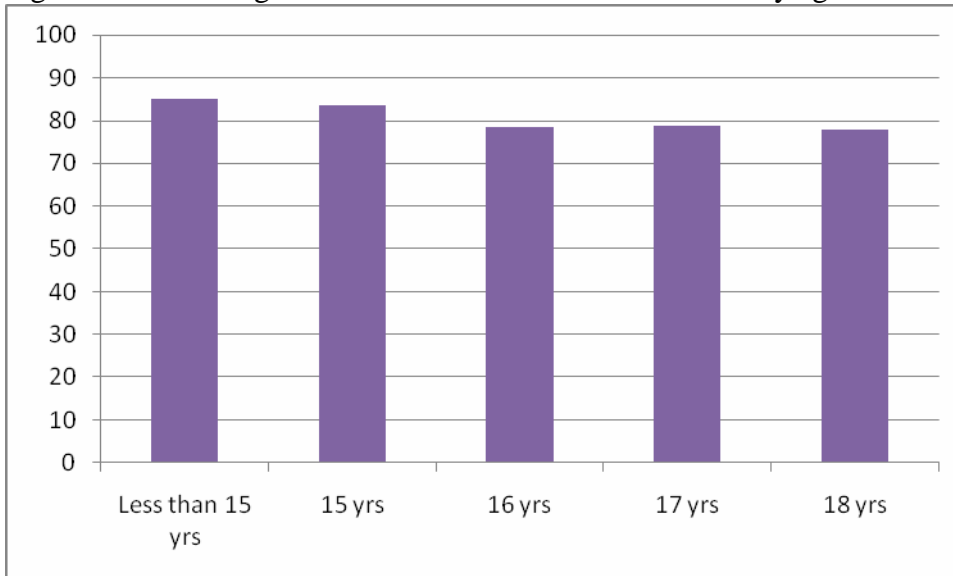
Students with a SBHC were also likely to be very satisfied with the services they received or to have reported that the treatment was very helpful, compared to students without a SBHC. More students in schools with a SBHC reported receiving medications compared to students without a SBHC, though this difference was not statistically significant (9.8% and 7.3% respectively, $p = 0.90$). Also, students with a SBHC were much more likely to see a doctor, nurse, or other health care person for problems with drugs or alcohol (5.4% and 2.5% respectively, $p < .01$).

Students in schools with a SBHC report similar levels of general depression and suicide ideation as students in schools without a SBHC. Key differences emerge in the proportion of students who had spoken or met with professional counselors, with more students in schools with a SBHC having met with professional counselors and perhaps being screened for possible behavioral health issues. However, the difference in treatment rates between SBHC schools and non-SBHC schools was not statistically different. Further, students in SBHC schools were more likely to discuss problems with drugs and alcohol than students without access to a SBHC. Data also indicated that males were using mental health services close to the rate of females (24.7% versus 27.6%). African American males from poor communities are among the least likely children and adolescents to receive mental health services⁴; and are disproportionately at risk of suspension and failing to graduate.⁵ The benefit of SBHCs reaching and effectively serving young African American males is promising and noteworthy.

Chapter 8. Drug, Alcohol and Tobacco Use

The levels of tobacco use differed little across schools. A total of 19.8% of students reported ever having smoked cigarettes, which was similar to the 20.0% reported nationally in the 2007 YRBS. Males were more likely to have ever smoked compared to females (25.6% and 15.8% respectively, $p < .01$). As can be expected, smoking increased with age ($p = .021$). Only 15% of students aged less than 15 years reported ever having smoking, compared to 22.1% of 18-year olds. More students from schools without a clinic reported having smoked in the past thirty days than students with a clinic, but this difference was not statistically significant (6.6% and 9.1% respectively, $p = 0.082$). Male students were also more likely to have smoked in the past 30 days than female students, as were older students more likely than younger students ($p < .05$ and $p < .01$). The use of tobacco on school grounds did not differ between students with or without an SBHC, nor among older students, but did differ between male students and female students (26.6% and 19.3% respectively, $p < .01$).

Figure 17: Percentage of students who have never smoked by age

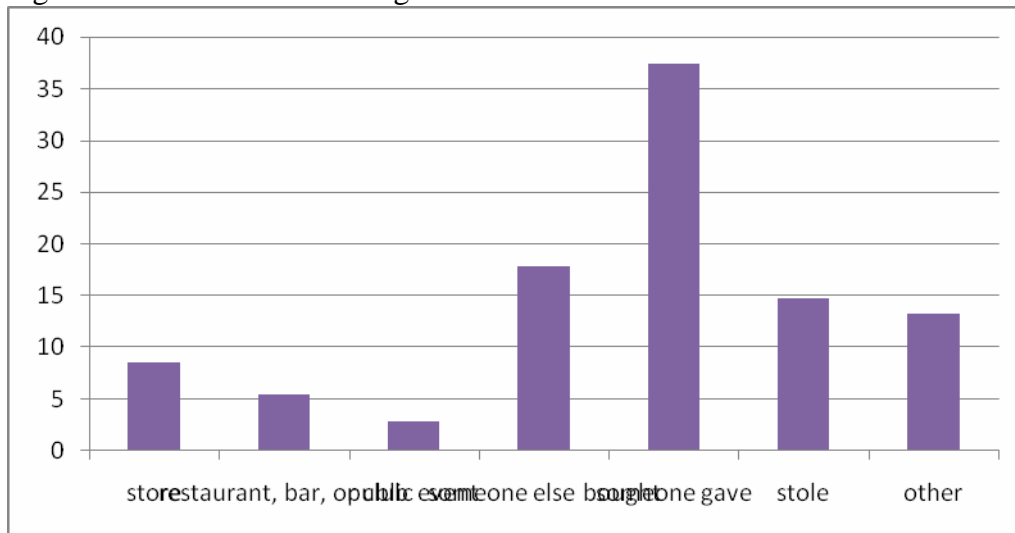


Students from schools without a SBHC were less likely to report ever drinking alcohol than students with a SBHC (60.7% and 71.0% respectively, $p < .01$), though almost two-thirds of high school students reported ever having drunk alcohol. This was slightly lower than the national average of 75% reported in the 2007 YRBS. Students aged 18 were less likely than younger students to report ever having drunk alcohol (59.2% and 69.5% versus 64.8% respectively, $p = 0.035$). Female students were more likely to report ever drinking than male students (60.6% and 68.46% respectively, $p < .01$). More than 50% of students who had ever drunk alcohol reported having their first drink between the ages of 13 and 16. More than half (54.2%) of students that had ever drunk alcohol report having drunk in the past 30 days.

Alcohol use in the past 30 days was similar among male and female students, as well as among students in schools with or without a SBHC. Older students were more likely to report having drunken in the past 30 days than younger students ($p < .01$). Of those students having drunk in the past 30 days, 32.6% of students reported having binge drank, as defined as having 5 or more drinks within a couple of hours. Older students were more likely to binge drink as were male students ($p < .01$ and $p = 0.038$ respectively). Having a SBHC in the school made no significant difference in binge drinking in the past 30 days.

More than half of students that reported drinking in the past 30 days reported getting their alcohol from others that either bought it for them or gave it to them. Only 14.7% of students stole the alcohol from a family member or a store. Younger students were more likely to steal to get their alcohol than older students ($p < .01$). Male students more often reported having stolen their alcohol, but this difference was not significant ($p = 0.60$). Students from schools with a SBHC reported less stealing than students without a SBHC ($p = 0.029$). Only 8.8% of students having drunk in the past 30 days reported doing so on school property. The majority of these were younger students, but the difference was not statistically significant. Female students were more likely to report having drunken on school property ($p < 0.1$). There was no difference between students in schools with a SBHC and students in schools without a SBHC.

Figure 18: Method of obtaining alcohol



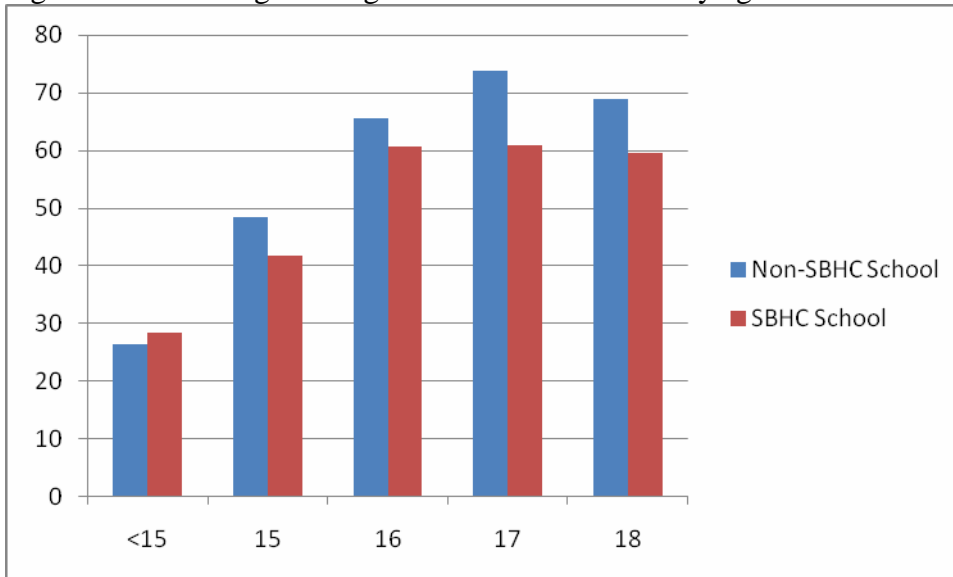
Marijuana use is also prevalent in New Orleans schools, but is not influenced by having a SBHC at a school. Recent marijuana use is not different between SBHC and non SBHC schools, therefore SBHCs are not likely to be having an effect on short term marijuana use and the differences in ever use are most likely due to differences at baseline. Just over a third of students (34.1%) reported ever having used marijuana. Age was significantly associated with marijuana use, with students younger than 15 less likely to report using than older students. Students aged 16 and 17 were most likely to use marijuana ($p < .01$). Male students were much more likely to use marijuana than female students ($p < .01$), as

were students from schools without a SBHC ($p < .01$). More than 60% of students who use marijuana started between the ages of 13 and 16. 52.6% of students that had ever used pot reported having used in the past 30 days. Recent marijuana use was more likely among male students ($p = 0.002$). Neither age nor having a SBHC at the school was significantly associated with marijuana use. A surprising number of students (23.1%) using marijuana reported having used marijuana on school grounds. This was significantly associated with age, though no overall trend emerged ($p < .01$). Male students were more likely to report using marijuana on school property than female students, but this difference was not significant ($p = 0.055$). Having a SBHC at school was not associated with using marijuana on school property.

Chapter 9. Sexual Behavior

Approximately 57% of students in the sampled schools have had sexual intercourse, which is higher than the national average of 47.8% reported in the 2007 YRBS. Of students younger than age 15, only 27% have had sexual intercourse, increasing to 67% of 17-year olds and 63% of 18-year olds ($p < .01$). Male students were more likely to have reported having sexual intercourse than females, and students in schools without a SBHC were more likely to have reported having sexual intercourse than students in schools with an SBHC ($p < .01$ and $p < .01$).

Figure 19: Percentage having had sexual intercourse by age



Approximately 41.5% of students that reported having sexual intercourse reported that their first encounter was between the ages of 14 and 15. Male students were more likely to report a younger age at their first sexual encounter than female students ($p < .01$); however there was no difference among schools with clinics and schools without clinics. Nearly half the students that have had sexual intercourse reported doing so with 2 people or fewer (49.1%). There was no association between having a school clinic and the number of partners. Males more often report more partners than females ($p < .01$).

Nearly 16% of students that had sex in the past 3 months reported doing so with 3 or more partners. Age was not associated with an increase in partners in the past three months, but males were more likely to report more partners than females ($p < .01$). Schools with and without clinics were no different. Approximately 10% of students report using drugs or alcohol during their last sexual encounter. This was not associated with age, though male students were twice as likely as female students to use drugs or alcohol during their last sexual encounter (7.0% and 15.0% comparatively, $p < .01$).

The majority of students (75%) having sex report using condoms while doing so. Age was not significantly associated with condom use, nor was having a school clinic. Males

were more likely to report using a condom than females (82.9% and 68.6% respectively, $p < .01$). Condoms were the most commonly used method for birth control, with 69.2% of the students using them. Small proportions of students reported using oral contraceptives (6.6%) and the withdrawal method (5.2%). A small but important percentage of students (11.7%) reported using no method of birth control the last time they had sex. Females were more likely not to use birth control than males (15.6% and 7.4% respectively, $p < .01$). Not using birth control was not associated with age or having a clinic at school. 16.4% of students that have had sexual intercourse report ever getting pregnant or getting someone pregnant. The probability of pregnancy increases with age, with 21.8% of 18-year-old students reporting that they themselves have been pregnant or they have gotten someone else pregnant ($p = 0.015$). Females were more likely to report pregnancy than men (19.4% and 13.0 % respectively, $p < .01$), and pregnancy did not differ among schools with or without clinics.

Chapter 10. Violence

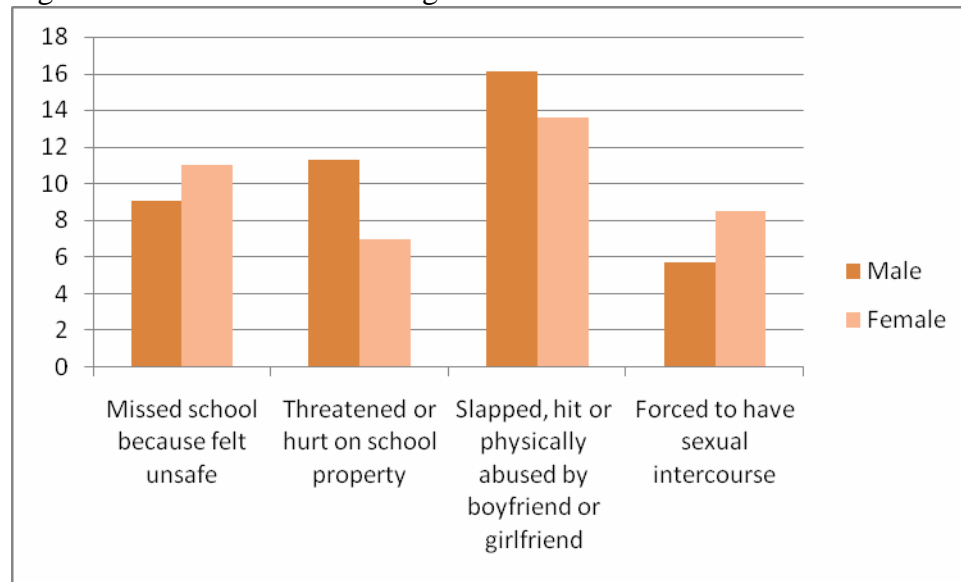
While nearly 15% of students reported carrying a weapon such as a gun, knife, or club in the past 30 days, students from schools with a school clinic were less likely to carry a weapon than students from schools without a school clinic (12.6% and 16.7% respectively, $p = .031$). Of these, 5.9% reported carrying a weapon on six days or more. Males were more likely to carry weapons than females (20.3% and 10.7% respectively, $p < .01$), and age was not associated with carrying a weapon. A quarter of those that reported carrying weapons in the past 30 days carried a weapon on school grounds. Carrying a weapon on school grounds was not associated with age, sex, and having a school clinic.

One in ten students reported missing school because they felt unsafe on their way to school or at school. Older students were more likely to ever have missed a day of school because of feeling unsafe ($p < .01$). Missing a day of school was not associated with sex nor having a school clinic. Approximately 9 percent (8.7%) of students reported being threatened or injured with a weapon at school. Male students were more likely to have been threatened or injured with a weapon than female students (11.3% and 7% respectively, $p < .01$). Students that reported missing a 1 or more days of school for feeling unsafe were also likely to report being threatened or injured with a weapon at school ($p < .01$).

Approximately one-third of students reported fighting in the past year, with 15% being involved in only one fight. Younger students were more likely to report fighting in the past year than older students ($p = .022$). Male students were more likely to report fighting in the past year than female students ($p < .01$). Students in a school without a clinic were more likely to report fighting than students with a school clinic (37.6% and 30.5% respectively, $p = .047$). Among those that were in a fight in the past year, 11.5% report needing treatment by a doctor or nurse. Male students were more likely to need a doctor or nurse from fighting than female students (14.3% and 9.1% respectively, $p = .020$).

Fifteen percent (15%) of students reported being hit, slapped, or physically hurt by their boyfriend or girlfriend. (The dataset does not however distinguish between those with a boyfriend or girlfriend and those without. Therefore it is impossible to determine what proportion of those in a relationship report being physically hurt by their significant other.) There was no association with being hit, slapped, or physically hurt and age, sex, and having a school clinic. Seven percent (7%) of students reported having been physically forced to have sexual intercourse. Older students were more likely to report being forced ($p = .041$), and females report being forced more than males (8.5% and 5.7% respectively, $p = .023$). There was no association between being physically forced to have sex and having a school clinic. Among those that report being hurt physically by their significant other, 20% report being physically forced to have sex.

Figure 20: Violence at school regardless of SBHC status



Chapter 11. Discussion

This study clearly supports that Orleans Parish youth attending public schools represent a vulnerable target population; and that Orleans Parish SBHCs are serving youth who are experiencing social and economic disadvantages. This is evidenced by our study results indicating that more than half of the overall participants (66%) are eligible for free lunch and that nearly 11.6% indicated that they are sometimes or often hungry because there is insufficient food in their homes. These are significant findings that support the relevance of SBHCs for supporting efforts to alleviate health disparities by connecting students from racial and ethnic backgrounds and challenging socioeconomic circumstances backgrounds to quality healthcare services.

Awareness and utilization of their new SBHC was high among students at three Orleans Parish schools where new SBHCs have been established since 2006; especially given that only one SBHC has been providing services for over two school years, and two for just over 1 school year. However, there is substantial need to increase enrollment in two of the three SBHCs which was 62%.

The BMI profile of the entire student sample indicated that 34% of the participants were overweight or obese, which is higher than the national average for overweight students. Among the overweight and obese, 63% and 78% stated that they are trying to lose weight, including through exercising which indicates that they would be probably be receptive to a SBHC program offering assistance with weight loss. This age group offers a great opportunity for primary prevention programs because youth have a longer opportunity to benefit. Obesity in particular is a primary risk factor for the onset of chronic disease, which is already being observed among Orleans Parish students. Despite their young age, 3.5% of students reported that they have been diagnosed with diabetes

and 12% with high blood pressure. This evidence clearly shows that SBHCs have an essential role in addressing early detection, primary and secondary prevention of chronic diseases.

Early service utilization patterns indicated that SBHCs are filling a gap for students who might otherwise not have adequate access to quality, age-appropriate healthcare services. When students were asked about their usual source of health care, 22% stated that did not have a place to go for routine health care and over 40% reported their normal source to be the hospital (which might mean emergency room (ER); but only 1.2% reported that the ER was their normal source of care. For this question, there was a wide difference in the responses of females compared to males, where 43% of females indicated that community clinics were their regular source of care, and 48.3% of males relied upon “hospitals,” which might mean ERs. Students with no regular source of care in SBHC schools were more likely to report that SBHCs as their regular source of care, and SBHC users reported a high level of satisfaction with the services. SBHC users more frequently reported having discussed their dietary and physical activity habits and their sexual health with their SBHC provider, compared to students seeing a non-SBHC medical provider. SBHC providers are trained and SBHC protocol are specifically designed to serve adolescents which means they provide age appropriate care which is sensitive to the specific behaviors, needs and priorities of their adolescent customers. More marketing efforts targeting parents and students to utilize existing SBHCs are needed to maximize the benefit of the SBHCs.

In addition to the clinical care, our study also indicated that SBHC students made much greater use of behavioral health services than students without SBHCs. This use was positively associated with reductions in mental health related conditions and high risk behaviors, some at statistically significant levels. Depression levels among the entire sample of students was present in 30% of students, and students having access to a SBHC were significantly more likely to have sought treatment from the SBHC and more likely to receive medications when needed, though this association was not significant.

Our study clearly indicated that SBHCs are effectively making more mental and behavioral health services accessible to a high-need population, and they are reaching African American males, which is a population that is especially at risk. Preventive and early intervention mental health treatment can be delivered more anonymously in SBHCs which is desirable to students who value their privacy. Ideal SBHC providers are also trained and experienced in working with youth and their approaches to mental and behavioral health services are acceptable to students. It is also noteworthy that W.K. Kellogg funds were utilized to add psychiatry services, and substance abuse treatment during 2006-2007 and 2008-2009 school years, thus avoiding the need for referrals to a community mental health agency. These supplemental services are being continued in Orleans Parish SBHCs by Metropolitan Human Services District during the current school year. Because of stigma associated with mental health, referrals to community mental health clinics for psychiatric care are sometimes problematic for youth and families, and the rate of missed referrals has been significant. Having psychiatric

services available in SBHCs has solved this problem and is an evidenced-based practice that should be continued.

Under aged drinking and marijuana use, even on the school grounds were reported at alarmingly high levels among students surveyed. In both instances, students from schools with SBHCs reported lower use at statistically significant levels; however SBHCs need to be more aggressive in their preventive services to reduce adoption of alcohol and tobacco use, which is most often initiated in older teens. Orleans SBHCs provided substance abuse treatment at all three campuses, so there is a probable explanation for why SBHCs are positively associated with these positive results, however the results will be more convincing if these trends hold up over time. Preliminary findings are cause for optimism regarding the benefits of accessible substance abuse services.

Approximately 57% of the students sampled indicated being sexually active, but only 22.7% of indicated ever being tested for HIV, 26% tested for sexually transmitted infections (STIs), and just over half indicated using contraception. These results clearly justify the need for additional education on risky sexual behaviors emphasizing prevention of pregnancy and STIs. SBHCs complement sexual health programs as they are ready and available with testing and counseling services. More outreach through curriculum based sexual health educational programs and afterschool programs are needed to bring students into the SBHCs for testing and counseling.

Community and school violence are a reality for students in New Orleans schools. Although SBHCs are not a panacea, they are definitely are resource for students seeking counseling when they are troubled by interactions with peers or family members that involve abuse or violence. Our data indicated that students in SBHC schools were significantly less likely to report fighting or to carry a weapon to school compared to non-SBHC schools. These study results are very promising and validate the importance of investing in skilled mental health workers that are accessible to students in schools with SBHCs; however there may be other factors involved in these outcomes, for example schools with SBHCS may select students with fewer problems. These issues can only be clarified over time.

Chapter 12. Conclusions and Recommendations

The contextual factors that characterize the lives and experiences of public school students in New Orleans are stark. Given the environmental threats described in this report, students in Orleans Parish public schools face incredible odds, and it's incumbent upon us to provide the tools to help them succeed. SBHCs are one of those tools and should be available to every public high school student in Orleans Parish. SBHCs can reduce health disparities through improving access to quality care and providing age appropriate health and behavioral health care to a population that might otherwise go without these services. SBHCs also support students in reaching their educational goals, and education is fundamentally associated with good health and longevity. SBHCs have been an especially efficient way to serve youth in a post-disaster setting where the need for services was exacerbated by the lack of community providers. The need for mental health services was especially acute post-Katrina and remains acute even after four years.

SBHCs intervene at a that critical time in adolescents' development providing preventive and primary clinical and mental and behavioral health services that assist with their health issues and support critical decision making. While the SBHCs in this study had only been in operation for 1-2 years at the time of this survey, the preliminary results indicate that SBHCs are already having a direct impact on the health and wellness of our youth. A follow-up study is planned for the 2010-2011 school year, which will provide further evidence of their impact. What this study has reaffirmed is that SBHCs can reduce health disparities through improving access to quality care and providing age appropriate health and behavioral health care to a population that might otherwise go without adequate healthcare.

Education is one of the greatest predictors of good health and the greatest remedy for poverty. Education is directly related to income and the more educated the individual, the more likely they are to succeed in life.⁶ Although our local study did not make the direct link between health and poor education outcomes, the research literature indicates that students most often miss school or drop out due to personal health problems or health problems of a close family member, or because of high risk behaviors related to mental and behavioral health issues, which may lead to school suspension and dropout.⁷ These health events are exacerbated by poverty, as vulnerable families have fewer resources to address health problems or advocate for their students when they are in trouble. SBHCs provide unique preventive services and by definition, are inseparable from schools. Thus, education and health institutions must work hand in hand at all governmental levels to ensure that SBHCs are available to support our vulnerable students.

This is an opportune time for showing such positive results for SBHCs. Due to the untiring efforts of the National Assembly of School-Based Health Centers and their members, SBHCs were designated in both the House and Senate versions of the health care reform bill at the time this was written. The House language provides for cost-based reimbursement for those SBHCs funded in the newly authorized program, and stipulates that State Medicaid and CHIPRA programs reimburse SBHCs for covered services. In addition to authorizing a SBHC program, the Senate version provides emergency

appropriation for SBHCs. The provisions in both bills are the beginning of strong federal support for this model of care.

Proposed national reforms are hopeful news for Louisiana SBHC sponsors that continue to struggle with funding challenges, primarily due to inadequate reimbursement that does not cover the cost of providing services. Adequate reimbursement is the critical sustainability issue that must be resolved to enable community health organizations to continue to sponsor SBHCs. Although medical sponsors must accept the responsibility to operate efficiently and to aggressively bill Medicaid and other insurers, aggressive billing practices cannot compensate for lack of reimbursement for the most widely utilized SBHC services such as counseling for mental and behavioral health services and counseling for preventive health, the two hallmarks of that make SBHCs unique and effective.

In New Orleans, SBHCs are supported through a partnership between local health care agencies and school districts. These partners require effective state and national school health policy that complements their local efforts to ensure that SBHCs can be sustained. The State of Louisiana is to be congratulated on having one of the largest networks of SBHCs programs nationwide that is supported by the Louisiana Office of Public Health, Adolescent School Health Program, and a dedicated state office which provides SBHC operational assistance through competitive grants and promotes quality services through technical assistance.

The bottom line is that SBHCs are an effective method of providing preventive and primary care services to an underserved population. This report certainly supports that the long term benefits of this investment are worthy and represent smart public policy.

Chapter 13. Recommendations

- 1. Every high school student in Orleans Parish public schools should have a school-based health center (SBHC) on campus, or should have access to a SBHC.**
- 2. SBHCs should be organized to serve neighboring elementary schools where feasible. This would increase the impact of SBHCs and expand the benefits to elementary school students.**
- 3. The state Medicaid program should begin reimbursement of behavioral health services in SBHCs immediately. The evidence abounds that these services can have a profound effect upon children's educational success and throughout their lives.**
- 4. SBHCs should be fully reimbursed for their services, including critical preventive care such as counseling. Currently SBHC's reimbursements do not adequately cover costs, causing reluctance of schools and medical providers to offer these services to students.**
- 5. More outreach through curriculum based sexual education programs after school programs are needed to bring sexually active students into the SBHCs for testing for sexually transmitted infections and for reproductive counseling.**
- 6. Study results point to the need for contraceptive education and services for students that request these services. This would require advocacy to change the current law prohibiting contraceptive dispensing in schools, however it could be left up to school districts and parents to determine if such policy is in the best interest of their students achieving their educational goals. Unplanned pregnancy is one of the main reasons why teenagers drop out of school.**
- 7. Tobacco and substance use and abuse are serious problems among students and more programs should be offered that provide education on the ill health and social effects of substance use and that discourage early onset and use of alcohol and illegal drugs. Programs should include curriculum based educational programs, school collaborations with community based organizations, recreational programs that provide alternative productive options, and after school programs.**

Study Limitations & Project Team

The School Health Connection Student Survey has a number of limitations, which should be kept in mind when reviewing this report. First, this is a cross-sectional survey and thus only represents the situation at the 6 New Orleans high schools at one point in time. Second, the responses of the students are self-reported, which depends on their ability to recall events. Third, we believe that many of the students in the schools without a school-based health center may have stated that their school does have one due to the fact that there has been some information in the school about the future SBHC. Alternatively, some students may believe that their nurse represents a SBHC.

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