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## Addressing the Need For Establishment of School-Based Health Centers to Provide Reproductive Health Care in Philadelphia: A Meta-Analysis

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Addressing the Need For Establishment of School-Based Health Centers to Provide Reproductive Health Care in Philadelphia: A Meta-Analysis

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A capstone submitted in partial fulfillment for the degree Master of Science in Biomedical Sciences-Public Health Concentration

### **Abstract**

#### **TITLE:**

**Addressing the Need for Establishment of School-Based Health Centers to Provide Reproductive Health Care in Philadelphia: A Meta-Analysis**

#### **OBJECTIVE:**

Currently, the communities of Philadelphia, which have predominantly African American residents, suffer from massive racial and ethnic health disparities. Children in these communities are at high risk of dropping out of school while also lacking access to reproductive health care. This myriad of unfortunate circumstances perpetuates the cycle of poverty that residents in these low-income communities have been experiencing for decades. School-based health centers are a potential answer to this problem. The objective of this meta-analysis is to review published studies and carry out a meta-analysis to assess potential benefits and feasibility of SBHCs in the Philadelphia public school system as well any concerns that may arise with their provision.

#### **METHOD:**

A literature review and analysis was conducted through an online search of databases and government websites including Medline, PubMed, National Institute of Health, Google Scholar, National Center for Biotechnology Information, Center for Disease Control, and Google Scholar. A Google search for local credible news sources was also performed. The database searches were completed using the following search terms: "SBHCs," "school-based health center"; "health inequity in schools"; "reproductive health care in schools". Abstracts were reviewed for relevance, and those remaining were critically reviewed.

**EXPECTED OUTCOME:**

The review of the relevant literature should reveal several benefits to implementing SBHCs as well as whether there is feasibility in establishing SBHCs in Philadelphia's public school system.

These findings can have an important implication for addressing the reproductive health care needs of underserved youth in low-income areas.

## **Introduction**

Adolescents are known to be the most difficult age group to get into the doctor's office. It is even more challenging in Philadelphia, where healthcare access is minimal. Even though the Affordable Care Act gave health insurance to an unprecedented amount of people, there is still the issue of actually being in close enough proximity to a primary care provider for there to be geographical access to health care. “The odds of being in a low access area were 28 times greater for census tracts with a high proportion of African Americans than in tracts with a low proportion of African Americans” (Brown, Polsky, Barbu, Seymour, & Grande, 2016). About one-third of Philadelphia’s low-access areas are neighborhoods that have at least 80 percent African American populations with north Philadelphia being one of these areas. However, the study also found that “Philadelphia as a whole is not lacking in total number of primary care providers” (Brown et al., 2016). This finding makes the presence of health disparities in Philadelphia even more worrisome.

The child poverty rate is around 40% in the city, and almost every child in North and West Philadelphia lives at or below the federal poverty line (Westervelt, 2013). There are communities with predominantly African American residents who already suffer from massive racial and ethnic health disparities. For example, African American children and adolescents with asthma had more hospitalizations, disability, and a higher mortality rate compared with that of White children and adolescents with asthma (Guo, Wade, & Keller, 2010). The children in these communities are highly at risk of non-completion of school and dropping out, which continues the vicious cycle of poverty that residents in these low-income communities have experienced for decades.

Since teenage years are a time for high-risk behaviors that can lead to unintended pregnancies and contraction of sexually transmitted diseases, the high rate of teen pregnancy in the U.S. is a significant public health issue with harmful consequences for both mother and child. “Pregnant teens are more likely than older women to receive late or no prenatal care, have gestational hypertension and anemia, and achieve poor maternal weight gain” (Meade & Ickovics, 2005). There are also many long term consequences of teen motherhood, which include lower educational attainment, lower levels of employment and income as well as higher rates of marital instability compared to older mothers. Meanwhile, females with STDs are at increased risk of cervical cancer, pelvic inflammatory disease, involuntary infertility, and premature death. These are some of the many dangers that female high school students face when lacking access to reproductive health care as well as regular STD screenings.

Chlamydia, a sexually transmitted disease (STD), is the most commonly reported infectious disease in the city of Philadelphia (“Chlamydia Surveillance”, 2017). It is contracted through having vaginal, anal, or oral sex with an individual who has Chlamydia (“Chlamydia”, 2017). Even if a person has been treated for Chlamydia in the

past, they can be re-

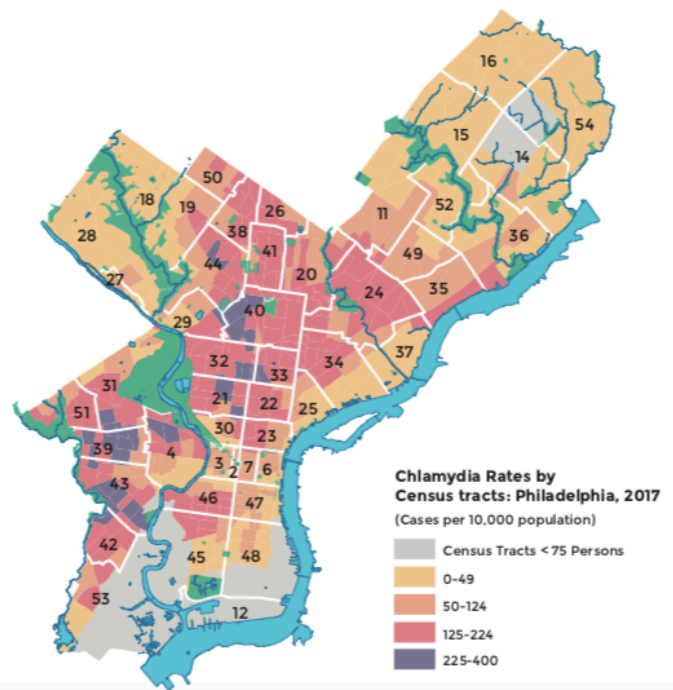


Figure 1. Rate of Chlamydia infection in Philadelphia, PA by neighborhood (2017). Adapted from “Annual Report” by Philadelphia Department of Public Health.

infected with Chlamydia. The initial destruction caused by Chlamydia is usually not recognized, but severe health issues can eventually manifest as a result. Treatment of Chlamydia is relatively easy and is cured with a week-long course of antibiotics. The 15-19-year-old population in Philadelphia is the most commonly affected. It is also most rampant in the areas of Philadelphia that are suffering from incredible economic disparity and lack of access to healthcare.

In a study titled “High School Dropouts and Sexually Transmitted Infections”, the relationship between dropping out of high school and the likelihood of contracting a sexually transmitted infection (STI) was analyzed. Both girls and boys who drop out were found to have much higher rates of becoming infected with an STI than those who stay in school (Anderson & Portner, 2014). Interestingly, dropping out of high school is associated with a nine to ten times percent increase in the likelihood that a female student will contract an STI in comparison to a male student. One theory states that high school dropouts enter relationships with a much different population compared to their non-dropout counterparts. Females, who drop out, pair up with much older males and therefore have a higher risk of contracting an STI. Whatever the reason may be, female students are at greater risk than males according to the data present. This is a huge issue in itself but even more significant when coupled with the fact that there is also the danger of passing on Chlamydia to a baby during childbirth if the mother is infected with it (“Chlamydia”, 2017). If untreated, Chlamydia can also spread to the uterus and fallopian tubes, causing pelvic inflammatory disease which can permanently damage a woman’s reproductive system. This can lead to infertility, ectopic pregnancies, and an increased likelihood of contracting and spreading human immunodeficiency virus, also known as HIV. These are some of the severe health implications if Chlamydia is not treated. Some of these issues may also lead to fe-

male students cutting their education shorter. While being the most common infectious disease, it is just one of the many STDs plaguing the teenage population in Philadelphia.

In a study called “Programs to increase high school completion: a community guide systematic health equity review”, it was stated that “High school completion is an established predictor of long-term morbidity and mortality” (Hahn & Knopf, 2015). Consequentially, there is also a positive relationship between the lack of high school completion and STI contraction, as previously stated. To reduce the spread of STI’s, it is imperative to become aware of the determinants of STI’s due to their consequence on health and economy. This study shows that: Certain STIs can lead to cancer, infertility, or even death. Treating STIs and their complications place a substantial stress on health expenditures; estimation of the costs of STIs are at \$17 billion per year. A focus on young people is vital because nearly half of STIs contracted occur among individuals 15 to 24 years of age, and teens and young adults account for almost 30 percent of new HIV infections annually (Anderson & Portner, 2014). The lack of STD prevention has dire effects on the economy and the overall well being of Philadelphia residents.

School-aged children, who are in the midst of their physical and mental development, are particularly vulnerable to their environment. Since they spend the majority of their day at school, the school climate has a significant impact on students. “The National School Climate Center uses the term ‘school climate’ to describe ‘the quality and character of school life,’ reflecting the internal social norms, values organization, and teaching and learning practices within the school.” (“School Climate, Student Success and the Role of School-Based Health Care”, 2018). School climate can have long term consequences on overall well-being and quality of life. It can



lead to fostering academic success as well as social and emotional growth or reinforcing negative lifestyle factors.

Currently, many Philadelphia schools are in unacceptable condition. An estimated \$4.5 billion is needed to bring every school and athletic field in the city up to code (Petrillo, 2019). In 2013, 23 schools were closed in Philadelphia to avoid a projected \$1.35 billion budget deficit over five years due to a cut of more than \$400 million in state funding. However, the stability of leadership has helped make dramatic improvements in recent years. State funding has increased while district governance has transferred from the state-run School Reform Commission to a city-run board. Dr. Hite has been the superintendent of Philadelphia public schools since 2012 (Hurdle, 2019). The latest score in the districts annual School Progress Report rose for the third consecutive year from 33 percent in 2014-2015 to 42 percent in 2017-2018. This advancement indicates improvement in the areas of student achievement and progress, college and career readiness, and school “climate.” Attendance and parental involvement are measurements of school “climate” (Hurdle, 2019). Even so, most recent reports are showing that only 46% of students are attending 95% or more of school days and only 69% of students in district-led and alternative schools are graduating (Hurdle, 2019).

A school-based health center (SBHC) is a physicians office located in a school or on school grounds that provides a range of medical care and services such as immunizations, reproductive health care, preventative care, and dental care among others. Reproductive health care services include gynecological exams, HIV testing and counseling, emergency contraception, condoms, pregnancy testing, and STD diagnosis and treatment (Santelli & Nystrom, 2003). SBHCs can act as a health hub for the entire community since school employees, as well as resi-

dents of the neighborhood, can use its services. SBHCs were first introduced after the success of a model in the 1970s that addressed lack of prenatal care and birth complications for teenage mothers at public high schools in Minnesota (Keeton, Soleimanpour, & Brindis, 2012). The program was such a success that it gained national attention and brought the models potential to light. SBHCs were an answer to issues of health inequity and lack of access to health care for children in underserved communities. Once health care and education policymakers saw the value of school-based health delivery in meeting the need for greater access to health care among adolescents, funding and community-based efforts increased to facilitate the growth of SBHCs across the country. By 1988, there were around 120 SBHCs in the United States (Keeton, Soleimanpour, & Brindis, 2012). Although the number of SBHCs in the country has been growing throughout these past years, Philadelphia public schools do not have any SBHCs. The purpose of this study is to evaluate whether the establishment of SBHCs would be feasible and beneficial in Philadelphia public school systems.

## **Methods**

A literature review and analysis was conducted through an online search of databases and government websites including Medline, PubMed, National Center for Biotechnology Information, Center for Disease Control, National Institute of Health, and Google Scholar. A Google search for credible local news sources was also performed. The search was limited to articles from 2000-2019. Search strategies used subject headings and keywords such as “SBHCs”; “school-based health center”; “health inequity in schools,”; “reproductive health care in schools”. Abstracts were reviewed for relevance, and those remaining were critically reviewed.

Analyses were done to look at policies affecting SBHCs, benefits of SBHCs, and feasibility of SBHCs.

### **Results and Discussion**

This study has shown that school-based health centers are an excellent method to reach high school students in Philadelphia to provide access to reproductive health care services to prevent STDs and unwanted teen pregnancy. There is evidence of increased contraceptive use among students with access to an SBHC (Keeton, Soleimanpour, & Brindis, 2012). A study has also shown a decrease in pregnancy rates in schools with an SBHC on site (Santelli & Nystrom, 2003). A higher number of prenatal care visits as well as a decreased likelihood of delivering low birth weight babies has also been shown to be a consequence of SBHC utilization (Bersamin, Fisher, Gaidus, & Gruenewald, 2016).

The establishment of SBHCs is proven to result in the improvement of educational and health outcomes for disadvantaged students. Research has shown that the provision of SBHCs leads to a reduction in rates of school suspension or high school noncompletion along with an increase in grade promotion and grade point averages (Knopf et al., 2016). There has also been a substantial increase in immunizations and other preventive services along with a minor increase in the number of students who reported a regular source of health care (Knopf et al., 2016). Most importantly, there was a significant overall reduction in ED visits and hospital utilization (Knopf et al., 2016).

SBHCs address problems regarding transportation, lack of nearby providers, lack of providers accepting public insurance, and parental difficulties in getting time away from work to take a child to the doctor (Guo, Wade, & Keller, 2010). The establishment of SBHCs indirectly

helps parents retain employment and helps employers increase worker productivity. Healthcare inequities are known to lead to poor health outcomes, which in turn lead to poor educational outcomes. These are some of the significant strides made in health care access through the establishment of SBHCs.

### **Partnerships**

There is a wide range of steps needed to be taken to implement successful SBHCs in inner city schools in Philadelphia. Firstly, there needs to be a relationship established between the health and education system to improve access to primary and preventive care services (Keeton, Soleimanpour, & Brindis, 2012). “SBHCs are most often sponsored or operated by a local health care organization such as a community health center (CHCs; 28%), hospital (25%), or local health department (15%)” (Keeton, Soleimanpour, & Brindis, 2012). School systems, nonprofit organizations, mental health agencies, or universities also sponsor SBHCs. There are many potential partners in the area, including hospitals such as Children’s Hospital of Philadelphia, Shriners Hospital for Children, Hahnemann University Hospital, etc. Also, there needs to be community support behind the implementation of SBHCs into local high schools. Town-hall style meetings with parents of students, school administrators, state officials and representatives of local hospitals and clinics are a great way to have all the key stakeholder in the room at the same time to address any concerns. This method ensures that everyone is included in the process and while strengthening the relationship between the school and the students’ parents. School and community factors are critical in supporting, or impeding, the opening and maintenance of an SBHC (Bersamin et al., 2016).

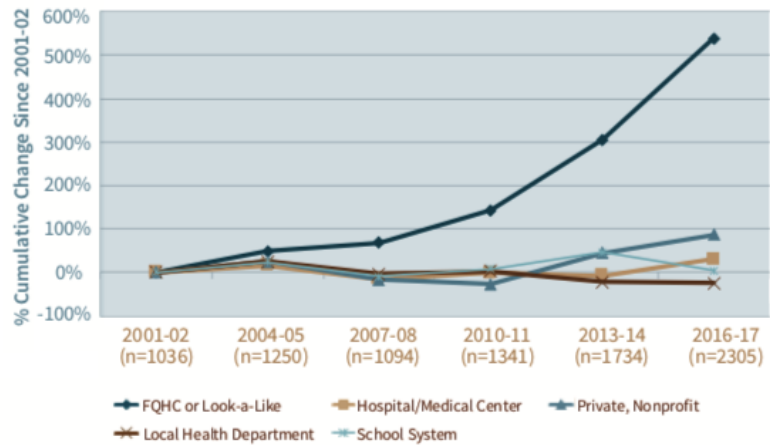
## **Funding**

States and federal public health agencies play a huge role in the implementation of SBHCs by contributing “funding for SBHCs, setting program standards, collecting evaluation data to demonstrate impact, and advocating for long-term sustainable resources” (Schlitt, Juszczak, & Eichner, 2008). Pennsylvania is one of thirty-two states that does not invest in SBHCs (“18 State Governments Commit Resources to SBHCs”, 2014). There needs to be significant state-level political and advocacy activities to support the establishment of SBHCs. A special task force needs to be put together to write state legislative proposals, budgets, and policy study reports (Schlitt, Juszczak, & Eichner, 2008). In the past, “legislative and executive task force reports from 13 states recommended state-level support of SBHCs as remedies to intractable public health concerns such as poor adolescent health outcomes, infant mortality, and teen pregnancy” (Schlitt, Juszczak, & Eichner, 2008). The policy written could include incentives for SBHCs to produce positive health and educational outcomes as well as incentives for hospitals and clinics to work in SBHCs. Tax credits are provided for individuals and organizations who develop and sustain policies and programs to keep SBHCs afloat. There would also need to be a collaboration with health insurance companies to set up a model for reimbursement.

The most cost-efficient option would be the Federally Qualified Health Center (FHQC) model. It would be the best for long-term sustainability since FHQC management would have “the expertise to administer a medical office and economies of scale in obtaining medical supplies” (Sprigg, Wolgin, Chubinski, & Keller, 2017). It can be seen in figure 2 that this type of SBHC has had the most growth in comparison to other models. An SBHC with an FQHC status would also not run the risk of running out of funding if the state budget can’t afford to allocate

funds to SBHCs one particular year. An FHQC is also open to the public and not just students.

This model relies heavily on billing public health insurance programs as does the model using state grants. However, the SBHC model using state grants as funding would only cater to students making it the most student-friendly option.



Note: Data points represent change compared to the number of SBHCs in 2001-02 in each sponsor type.

Figure 2. Cumulative Change in SBHC Sponsor Type from 2001-2017. Adapted from “2016-17 National School-Based Health Care Census”.

These funding models can be implemented independently from one another, but using multiple sources of funding has proved to be a success. Depending on the funding model chosen to start an SBHC, different policies will need to be implemented to bring SBHCs to life in Philadelphia. Execution of the development of SBHCs requires advocacy for the policy and coordination between multiple stakeholders. Each SBHC model brings various sets for pros and cons with it. The most prosperous SBHCS have a stable base of operations funding from the government and community partners as well as allocated staff time for overseeing of operations (Swider & Valukas, 2004). As health inequity remains an issue for the youth of Philadelphia, various policy options and their feasibility should be considered by the Philadelphia Board of Education.

Mayor Jim Kenney is proposing a \$5 billion budget with considerable investments in Philadelphia schools. He plans to distribute \$214 million to the school district and pledges to in-

crease school spending by \$700 million over the next five years (Vargas & McCrystal, 2019). He also intends to open five community schools in the next fiscal year and increase the number of pre-K slots from 2,250 to 3,300. It would be immensely beneficial to children of Philadelphia to direct some of the budgets towards facilitating the start-up of school-based health centers. Studies show that the economic benefit of SBHCs exceeds the operation cost and results in net savings to Medicaid (Ran, Chattopadhyay, & Hahn, 2016). SBHCs are financed and sustained through a variety of sources. These sources include reimbursement from public insurance programs and private health plans; contributions from school districts and other partners; local, state, and federal grants (“Funding School-Based Health Care”).

It would be a step in the right direction for the state of Pennsylvania to allocate funds to bring health care access to public high schools, especially in North and West Philadelphia. This would include STD testing, prescribing medications for STDs, and pregnancy testing in school without the students having to visit the doctor’s office to be treated. Increasing the number of SBHCs is a promising strategy to provide health care access to the youth. It is an alternative form of health care delivery that has proven to be more effective due to the many barriers that children face in accessing health care.

### **Concerns**

When it comes to SBHCs, a source of concern may be regarding social and ethical feasibility. Many parents are not in support of SBHCs providing reproduction health services. Over 60% of SBHCs are prohibited from providing contraception on site even though contraception is legal, and adolescents are guaranteed the right to contraception under state law and judicial opinion (Santelli & Nystrom, 2003). These prohibitions are usually put in place by the school district,

the SBHCs sponsoring organization, state-level limitations, and concerns about the acceptability of dispensing contraception by the surrounding community (Keeton, Soleimanpour, & Brindis, 2012). Local community groups may show intense opposition based on moral traditionalism and family value leading to a culture war seeping into the school environment (Bersamin et al., 2016).

### **Conclusion**

SBHCs have been repeatedly proven to be effective at improving school climate and promoting student wellness. There needs to be an increase in funding as well as policy changes to establish SBHCs that operate at their highest potential to address the needs of our communities. Prevention of high school dropout, reduced emergency room visits, and promotion of reproductive health care are a few of the benefits of implementing SBHCs.

The literature supports the establishment of school-based health centers in Philadelphia as an efficient to deliver much-needed health care services to underserved youth. The prosperity of school-aged children depends not only on the quality of their education but also their health. SBHCs are effective in addressing a variety of issues that can reduce health disparities across various races and ethnic groups. They can be a means to treat a hard-to-reach patient population to meet their physical and mental health needs. Philadelphia would greatly benefit from the provision of school-based health centers.



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