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The Implementation and Operation of Three School-Based Health Centers in New Jersey

By

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Submitted in partial fulfillment

Of the requirements for the degree of

Doctor of Education

Department of Education, Leadership, Management, and Policy

Seton Hall University

2019

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SETON HALL UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES
OFFICE OF GRADUATE STUDIES

APPROVAL FOR SUCCESSFUL DEFENSE

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ABSTRACT

There is a construct of causation between common health issues affecting children and the corollary effects on a student's ability and motivation to learn, including impaired sensory perceptions, cognition, connectedness and engagement with school, absenteeism, and dropping out (Basch, 2011b). What is more, causal connections have been found between a students' health, their socio-economic status (SES), and the achievement gap that exists in education between students with a low-SES and others (Basch, 2011a). To address deficiencies in health care, some school districts have begun providing medical and mental healthcare in school buildings by opening school-based health centers (SBHC; Bains & Diallo, 2015; Guo et al., 2010; Koenig et al., 2016; Larson et al., 2017; School-Based Health Alliance, 2013).

This study sought to examine the implementation and operation of SBHCs specifically in New Jersey (NJ) public schools as data showed that though NJ had a large number of lower SES students there was a paucity of healthcare resources for them (Hing, Decker, & Jamoon, 2015). In fact, based on the last SBHC Census, NJ only had thirty-five centers whereas surrounding states had triple and quadruple that number (School-Based Health Alliance, 2013). There were three methods of center implementation found, which included school operated centers, collaboration centers, and Federally Qualified Health Centers (FQHC). Purposeful sampling was used to generate a sample of each method of implementation to study one of each. A qualitative bounded case study was utilized to collect, organize, and report information from the centers on their operations staffing, financial, policy, and monitoring.

The results of the study showed emerging themes important for school administrators to become cognizant of the method of center implementation that a school district chooses, including collaboration with the local medical community, use of mid-level practitioners,

personnel costs as a major expenditure of the center, school nurses as a main referral source of students to the center, the understanding that the SBHC is not a replacement for the school nurse's office, and emphasis on referrals and connections to outside providers. Within the literature, the researcher noted that SBHCs were monitored for efficacy based on a number of measures, including school connectedness, student achievement, student attendance, and educational attainment. The centers that were part of this study, while they were concerned with their impact on achievement and attainment, by and large viewed the SBHC as serving a public health benefit (Barnett & Allison, 2012) and enhancing a student's connection with the school (Stone et al., 2013; Strolin-Goltzman, 2010, 2014).

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In my relatively short career in education, there have been several students, teachers, administrators, and other members of the school community who have inspired me in many ways. I undertook doctoral studies to make myself better for them. I am in the business of education and I believe in what we sell. A thank you is due to all the school districts and their staff who gave me the access, time, and resources to complete this study to serve the greater good of all New Jersey public schools.

I could not have asked for a better dissertation committee. My mentor, Dr. Luke Stedrak, was my guiding light throughout this process. His unwavering support, intellect, and professionalism have gotten me to this point. Dr. David Reid served as my second reader and provided a keen eye on methodology and practice. Your prompt and thorough feedback was extremely valuable to me in crafting and refining this paper. Finally, to Dr. Rocco Tomazic who teaches me every day to be a better school administrator and human being. Thank you for the gift of your mentorship. The only possible way that I could ever repay you is to one day serve as a mentor myself and pass on the wisdom that you have instilled in me.

DEDICATION

To my wife, Rebecca: You stood by me the entire way. Despite all the time that this process took, you never once complained about my time devoted to it. You somehow knew just when to have me take a break from working to make time for myself and us. I love you for hundreds of reasons, but one of them is for the care and love you gave to me throughout this time.

Mom and Dad: I truly appreciate all the sacrifices you have made for me and the opportunities you have given me throughout my life. You provided me with the greatest gift any son could ask for—a warm and loving upbringing. I could always count on you for words of encouragement or advice. By teaching me the importance of an education you have given me tremendous motivation in my own educational pursuits.

I would be remiss not to mention my friend and beagle, Gino, who sat by my side staring at me while I researched and wrote this dissertation wondering when if ever I was going to be done with it. I'm done, buddy.

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CHAPTER I

INTRODUCTION

A child's physical and mental health has a causal relationship to various measures of educational participation, success, and attainment (Basch, 2011a; Jackson, 2009; Michael et al., 2015). Charles Basch, a researcher on health and education at Columbia University Teacher's College, has been cited extensively for his work linking health to learning. In his seminal work on the topic, published in seven articles in the *Journal of School Health* in October of 2011, he formed a construct of causation between common health issues affecting children and the corollary effects on a student's ability and motivation to learn, including impaired sensory perceptions, cognition, connectedness and engagement with school, absenteeism, and dropping out (Basch, 2011b). Furthermore, the body of work posits that there is a causal connection between a student's health, their socioeconomic status (SES), and the achievement gap that exists in education between students having a low-SES and others (Basch, 2011a).

Much the same way that studies link SES to test scores (Tienken, 2011), Chen, Martin, and Matthews (2007) found that lower socioeconomic status is correlated with the likelihood of a child having a health condition that limited childhood activity. Basch's argument rests on the fact that students from a lower SES background are more likely to suffer from vision impairment, asthma, teen pregnancy, aggression and violence, lack of physical activity, eating no or an improper breakfast, and attention deficit hyperactivity disorder (Basch, 2011c, 2011d, 2011e, 2011f, 2011g, 2011h, 2011i). At-risk students—that is, those living in families at or below the poverty line—have limited access to primary healthcare services, which Basch (2011a) contended is a further contributory factor to the educational achievement gap (Berdahl et al., 2013).

Longitudinal studies by Jackson (2009, 2015) have shown the effects that a student's health has on educational outcomes while controlling for other known correlational factors aside from health. In Jackson's 2009 study analyzing panel survey data collected from approximately 9,000 U.S. students between the ages of twelve and seventeen over the course of six years, the researcher found that students in good, fair, or poor health are less likely than their healthier peers to complete high school, graduate on time, or go on to attend college. These outcomes were correlated with decreased school attendance due to illness, lower test scores and grades, and overall lower expectations for their educational achievement (Jackson, 2009). In another data analysis by Jackson (2015) performed on students aged seven, eleven, and sixteen in the U.K., the findings showed that students who were diagnosed with a physical or mental condition scored one standard deviation below the mean in math and reading assessments compared to students with no health condition.

The deleterious effects of health on academic performance are particularly significant in those students with chronic health conditions, particularly those who are undiagnosed or untreated. A literature review of fifteen published articles describing associations between childhood diabetes and academic achievement found a link between students with diabetes, especially those with uncontrolled diabetes, and academic achievement (Taras & Potts-Datema, 2005a). The same study examined eight published articles that linked epilepsy to lower academic progress and achievement (Taras & Potts-Datema, 2005a). Another study reviewing sixty-six published articles on asthma found that it is correlated to significant absenteeism (Taras & Potts-Datema, 2005b).

Recognizing the importance of health on student achievement, the American Association of School Administrators (2005) and the National School Boards Association (2017) both

enacted position statements holding that all children should be provided with healthcare. The Association for Supervision and Curriculum Development (ASCD) in partnership with the Center for Disease Control (CDC) took this position one step further by formulating a framework of student health services for schools and communities on the basis that health is interrelated to educational attainment. This framework—referred to as whole school, whole community, whole child—rests on ideas theorized twenty-seven years before its creation in the 1987 work of Allensworth and Kolbe, which focused on student health as a necessity for effective schools (Allensworth & Kolbe, 1987; Michael et al., 2015).

While school districts in New Jersey are required to provide health services to students, it is limited to preliminary screening and acute care (NJAC 6A:16-2.2). To address deficiencies in health care, some school districts have begun providing a higher level of medical care by opening school-based health centers (SBHC; Guo et al., 2010; School-Based Health Alliance, 2013). Despite having a large number of students with low SES and difficulty accessing healthcare, according to the latest School-Based Health Alliance census (2013), New Jersey only has thirty-five SBHCs. Surrounding states such as New York, which has two hundred thirty centers, and Connecticut, which has one hundred fourteen centers, already have infrastructure and resources in place for schools seeking to establish an SBHC (Connecticut School-Based Health Centers, 2018; New York School-Based Health Alliance, 2018). Based on the research showing the correlation between SBHC and student success (Geierstanger et al., 2004; Guo et al., 2005; Keeton, Soleimanpour, & Brindis, 2012; Silberberg & Cantor, 2008; Strolin-Goltzman, 2008, 2010), New Jersey seems ripe for expansion of the implementation of SBHCs, which will require resources and supports for school administrators, thus the need for the current study.

Defining School-Based Health Centers

School-Based Health Centers are locations in a school where students can go to be seen and treated by a physician, mid-level practitioner, or other primary care provider. In SBHCs students can be provided with comprehensive healthcare services, including routine physical examinations, preventative healthcare, and the care and treatment of chronic conditions (Koenig et al., 2016). Aside from providing for a student's physical health, there has been an emerging trend in centers providing mental health services (Bains & Diallo, 2015; Larson et al., 2017).

The 2013-2014 School-Based Health Alliance Census Report (2015) identified sponsors of SBHCs as Federally Qualified Healthcare Centers (FQHC), hospitals, school districts, and private non-profit entities. If the main sponsor of the SBHC is not the school district, the school is still an integral partner in the operations by initiating the implementation of the center, providing facilities, and accessibility to students. SBHCs play a significant role in addressing the healthcare needs of at-risk students (Allison et al., 2007; Wade et al., 2008). A majority (76%) of SBHCs serve Title 1 Schools, meaning that more than 40% of the school's population receives free or reduced lunch, a standard measure of poverty (School-Based Health Alliance, 2015). Students who live in poverty are overwhelmingly uninsured or underinsured (Centers for Disease Control and Prevention, 2013; Flores & Tomany-Korman, 2008). As a result, chronic health conditions go undiagnosed or untreated, resulting in lagging academic performance (Basch, 2011c; Kucera & Sullivan, 2011; Taras & Potts-Datema, 2005). Numerous studies have found that SBHCs have a significant impact on serving students with chronic conditions such as asthma, diabetes, epilepsy, and obesity (Guo et al., 2005; Keeton, Soleimanpour, & Brindis, 2012; Silberberg & Cantor, 2008).

Impact on School Environment

Increasing student achievement is a prime motivator behind school administrators' implementation of policies and programs (Dee et al., 2010). When considering opening an SBHC, school administrators weigh the scarce resources of time, space, and funding with the effects and potential contribution of SBHCs to the school's overall mission of academic success (Geierstanger et al., 2004; Keeton, Soleimanpour, & Brindis, 2012). Previous studies have shown that School-Based Health Centers positively affect student grades, attendance, and retention rates (Gall et al., 2000; Kerns et al., 2011; Walker et al., 2010; Van Cura, 2010). However, drawing correlation between academic success and SBHCs has proven to be methodologically difficult (Geierstanger et al., 2004; Jaycox et al., 2006; Keeton, Soleimanpour, & Brindis, 2012).

The lack of a clear connection between SBHCs and academic improvement has left some school administrators reluctant to implement them (Keeton, Soleimanpour, & Brindis, 2012). Recognizing the value of SBHCs, Geierstanger et al. (2004) first posited that an analysis of an SBHCs impact on school connectedness could be used to demonstrate an intermediate influence on academic achievement. Preeminent scholars in education and health were convened by the Centers for Disease Control and Prevention (2009) to confer on school connectedness, and they defined it as "the belief by students that adults in the school care about their learning as well as about them as individual" (p. 3). Testing the hypotheses that increased school connectedness is linked to SBHCs, Strolin-Goltzman (2010) analyzed data from a previously administered learning environment survey and found that students and parents perceived that academic expectations and school engagement were significantly higher in schools with SBHCs compared to similar schools that did not have a center. Later, Strolin-Goltzman et al. (2014) administered

in person surveys to elementary, middle, and high school students measuring perceived levels of school bonding, attachment, and commitment to educational future, which together formed a construct of school connectedness. The results of that survey showed that reported levels of school connectedness had a statistically significant correlation to a student's usage of an SBHC.

School-Based Health Center Policy

Federal

Most SBHC operating costs are funded either directly or indirectly by Medicaid (Parasuraman & Shi, 2014). Medicaid is a health insurance program jointly funded by the federal government and states that was established under Title XIX of the Social Security Act to provide primary health insurance to persons with low income (Grants to States for Medical Assistance, 1965). According to the latest United States summary health statistics available from the Centers for Disease Control and Prevention (2015), 41.6% of children under age 12 were enrolled in Medicaid, 32.9% of adolescents between the ages of 12 and seventeen 17 were enrolled in Medicaid, 3.7% of children under age 12 were uninsured, and 6.1% of adolescents between the ages of 12 and 17 were uninsured.

State support for SBHCs can include legislative recognition, allocation of appropriations, and program support and monitoring (Schlitt, Juszczak, & Eichner, 2008). In a survey of states by the School-Based Health Alliance (2015), 18 states distributed funds to 915 SBHCs, or 39.5% of SBHCs in those states. A majority (80%) of that funding came from state general fund appropriations (School-Based Health Alliance, 2015).

New Jersey

New Jersey (NJ) ranks second in the nation for Medicaid spending in schools; however, a majority of this funding goes toward a Special Education Medicaid Initiative that reimburses the state and school districts for special education expenditures incidental to a student's

Individualized Education Plan (Centers for Medicare & Medicaid Services, 2015). The State does not specifically recognize SBHCs in policy, legislation, or discrete appropriations. In the latest SBHC Census, NJ had thirty-five active School-Based Health Centers (School-Based Health Alliance, 2015). The State's student population may indicate a need for the expansion of the number of centers across the state. Approximately 40% of the State's 2,514 schools have a student enrollment of over 40% who are eligible for or are receiving free or reduced lunch (New Jersey Department of Education, 2016). In fiscal year 2016, 982,304 children in NJ were enrolled in Medicaid (Medicaid and CHIP Payment and Access Commission, 2017).

The NJ Constitution guarantees free public schooling to all children ages five to eighteen (N.J. Const., art. 8, § IV, ¶ 1). This is accomplished through a system of, at a minimum, providing access to enrollment in a local public school for all within those age ranges, along with transportation to and from school when indicated. The NJ Constitution has no such amendment for healthcare, but state law and policy provides for medical benefits to children who come from families that meet income and resource eligibility guidelines. Whereas there is a system in place to ensure immediate access to free public schooling for the state's children, no such access is afforded or guaranteed with healthcare services. Even if a child qualifies for enrollment in the state's Medicaid program, finding a doctor can be problematic, as NJ ranks lowest in the nation for the percentage of physicians who accept new Medicaid patients (Hing, Decker, & Jamoon, 2015). Since a student's health is linked to educational outcomes, an argument may exist that NJ needs to expand resources dedicated to a child's health to protect its investment in education.

Purpose of Study and Research Questions

The purpose of this study was to examine the implementation of school-based health centers in New Jersey public schools and determine methods by which school administrators can

determine the efficacy of such programs. The case study analysis allowed the researcher to analyze the following questions:

1. What is the process by which three New Jersey school districts implemented school-based health centers?
 - a. What is the method of formation and structure of the school-based health centers in three New Jersey school districts?
 - b. What types of services do the school-based health centers in three New Jersey school districts offer to students?
 - c. What are the personnel needs of the school-based health centers in three New Jersey school districts?
 - d. What are the major sources of revenue and expenditures for the school-based health centers in three New Jersey school districts?
2. How is the efficacy of school-based health centers assessed for its impact on educational outcomes defined by the literature as (a) school connectedness, (b) student achievement (c) student attendance, and (d) educational attainment?

Significance of the Study

The emergence of a continuing body of literature linking healthcare to learning and student engagement, along with the limited access of healthcare to students in poverty, necessitates school officials, particularly those serving a high at-risk student population, to consider opening an SBHC in their schools. With so many of the nation's children turning to Medicaid or lacking health insurance, SBHCs are uniquely positioned to fill gaps in healthcare faced by our youth (Wade et al., 2008).

Much of the existing research on SBHCs focuses on the impact, effectiveness, and sustainability of the program. As Lear (2007) wrote, “no trusted body of evidence offers a guide to the school health world – its providers, services, financing, and outcomes” (p. 410). Currently, there is no repository of information for school officials in New Jersey who wish to implement an SBHC in their district. In pursuing this study, the researcher hopes to bring awareness of SBHCs to school officials and provide a resource on various models and essential considerations that can be utilized when starting a program.

Limitations

The purpose of this study is to analyze the implementation of SBHCs. The study does not make any empirical evaluation of or conclusions on the effectiveness of SBHCs. Rather the study is designed to provide a complete and detailed description of policies and procedures at a given point in time. Laws, policies, and procedures, by nature, are subject to modification or repeal, currently or in the future, by codification, amendment, or ruling. The sample of school districts in which an SBHC implementation was studied is a subset of a subset—to wit, a sampling of SBHCs in New Jersey. Thus, no generalizations can be made to SBHCs based on the data collected. Further, by focusing on the implementation of SBHCs in New Jersey, the results of this study may not be applicable to other states due to the possibility of differences in state laws and regulations.

The researcher evaluated the sample size for limitations and found three cases to be sufficient based on the variety of implementation methods available. Boddy (2016) found that even case studies with a single sample can be valid and relevant depending on the subject of the study. Evidence for this study was collected from public records and reports. The researcher took the evidence provided at face value. SBHCs are not separate operating entities from the

intuitions in which they exist; therefore, they do not have their own discrete sets of financial statements. In collecting data, the researcher had to compile this information from a variety of sources and there exists the possibility that an immaterial financial component of the implementation and operations of a center has been excluded from this study.

The sample of SBHCs used was based on purposeful sampling. The subject institutions were selected based on their chosen model for implementing an SBHC, their indicated willingness to participate in the study, and their geographical accessibility to the researcher. Further, the school district in which the researcher is employed provides health services based on one of the models that are part of this study; however, the researcher's school district is not a part of this study and the researcher has no relationship, other than collegial, with the school districts identified to be part of this study.

Definition of Terms

At-Risk Student: Students who qualify for free or reduced lunch and are, therefore, at a greater risk of failing in school than students at higher income levels (Kaufman & Bradbury, 1992).

Federally Qualified Health Center (FQHC): "Federally Qualified Health Centers are community-based health care providers that receive funds from the Health Resources & Services Administration Health Center Program to provide primary care services in underserved areas. They must meet a stringent set of requirements, including providing care on a sliding fee scale based on ability to pay and operating under a governing board that includes patients" (Federally Qualified Health Centers, 2018, para. 1).

Free and Reduced Lunch (FRL): U.S. Department of Agriculture nutrition program for students whose families live at 185% of the poverty level to qualify for reduced lunch and

students whose families live at 135% of the poverty level to qualify for free lunch (Child Nutrition Programs: Income Eligibility Guidelines, 2017).

School-Based Health Centers (SBHC): A location in or near the school where a student can go to receive a variety of healthcare services, which can include primary care medical services, health screenings, dental care, and mental health services (School-Based Health Centers, 2017).

Socio-Economic Status: “The social standing or class of an individual or group. It is often measured as a combination of education, income, and occupation” (American Psychological Association, 2018, para. 1).

CHAPTER II

LITERATURE REVIEW

Introduction

The purpose of this study was to determine if existing literature supports the assumptions that student health has an impact on educational participation, success, and attainment and that School-Based Health Centers (SBHC) influence educational participation, success, and attainment. Another purpose was to determine what methods of formation and structure currently exist for opening an SBHC, the types of services that SBHCs offer to students, and the operational and financial requirements associated with the startup and ongoing operation of an SBHC.

This chapter begins with an overview of the provision of health services in schools, including historical context. The literature review continues with an analysis of existing literature on SBHCs and their connections, if any, to affecting educational outcomes. Throughout these first two sections, the researcher examines contextual literature linking health to educational outcomes. The chapter concludes with a summary of the available methods that a school district may use for implementing an SBHC, along with the operations, personnel, and financial considerations of running a center.

Literature Search Process

The following online databases were accessed to research the literature for this section: ProQuest, PubMed, SAGE Journals Online, JStor, Google Scholar, books, and reports. In addition, the researcher searched the websites of the New Jersey Department of Education, Centers for Medicare & Medicaid Services, and Centers for Disease Control to gather relevant information and statistics. The following keywords were entered in multiple combinations to

search the databases: *health and academics, school health, child and adolescent health, school-based health centers, school-based health center implementation, school-based health center and academics, school-based health center operations, and school-based health center costs.*

Criteria for Inclusion or Exclusion of Literature

To be included in this review, the research had to meet the following criteria:

- English language literature published in the last twenty-five years, except for those studies chosen for their historical significance;
- peer-reviewed journal articles;
- both qualitative and quantitative studies;
- federal and state statute and regulation;
- reports from industry associations;
- publications of major think tanks; and
- government publications.

Studies were considered for exclusion from the review if the following criteria were met:

- studies pertaining to schools or students not in the United States;
- studies focusing exclusively on the impact of school-based health centers on student risk behaviors;
- studies that focused on the post-graduation economic or social outcomes of student health or school-based health centers; and
- studies that focused exclusively on societal economic benefits of school-based health centers (i.e., savings to health insurance programs).

Health Services and Public Schools

Origins

Horace Mann, a nineteenth century education reformer and proponent of universal public education, was one of the earliest people to recognize the connection between health and the ability to learn. In his 1842 Annual Report to the Massachusetts State Board of Education, he wrote, “Soundness of health is preliminary to the highest success in any pursuit” (Mann, 1891, p. 153). At the turn of the twentieth century in New York City Public Schools, the standard operating procedure was to exclude students from school who were sick (Vessey & McGowan, 2006). While the goal of exclusion was to stop the spread of communicable diseases, albeit ineffectively, there was a general recognition at the time that students who were not in school were not learning (Darlington, 1905). Furthermore, students who were excluded from school were not getting the medical attention they needed and, as a result, were contributing to the spread of disease (Darlington, 1905). In October 1902, Lina Rogers was charged with creating a pilot program of nurses working in schools to help treat communicable diseases and limit the number of exclusions of children from school (Rogers, 1908). During September of 1902, 10,567 students were excluded from the New York City Public Schools due to health conditions. After the implementation of nurses working in the schools, a year later, in September 1903, just 1,101 students were excluded from school (Rogers, 1908). With its clear and compelling success in supporting student health, the model was duplicated throughout the country and the profession of school nursing and health services was born (Passarelli, 1994).

Wold (1981) described the school health profession during the first half of the twentieth century as evolving from focusing on communicable diseases to focusing on detecting and treating common physical ailments before, finally, adding the role of health educator. In that same period, the National Education Association identified good health as important to education

and formed a partnership with the American Medical Association to coordinate efforts for health in schools (Allensworth et al., 1997). While, at this point, schools were playing a vital role in the prevention and immediate care of illness, efforts by fee-based healthcare professionals in their own economic interest thwarted the expansion of health services in schools (Allensworth et al., 1997). In a particularly appalling example, a group of physicians volunteered to perform tonsillectomies in one New York City Public School on many students whose families could not afford the procedure (Duffy, 1974). In response, private physicians in the area incited a riot by spreading rumors that these procedures, “slitting the throats of youth,” were being performed in the schools as a precursor to a second holocaust (Duffy, 1974). The lobbying effort by physicians to minimize the delivery of primary care healthcare services in schools was so strong that, in the 1930s, the White House called for an end to health treatment in schools and for school physicians and nurses to simply be a liaison to private physicians (Allensworth et al., 1997).

With World War I and World War II, there was a great demand on all the nation’s resources, including healthcare; however, the role of student health was seen as more important than ever due to a need for strong and healthy youth to eventually support the war effort (Zaiger, 2000). McMaster (as cited in Zaiger, 2000) described one South Carolina county’s response to the effects of the nursing shortage on schools. A bi-agency partnership was formed to study the necessary components of a modern school health program and create a corollary pilot program in two schools. The findings of that group translated into what is now widely known as the role of schools in healthcare today, with the teacher referring students to the school nurse and the school nurse treating and referring students to private providers or other community resources (Zaiger,

2000). The wars solidified the role of health services in schools with then U.S. Commissioner of Education, Philander Claxton, saying,

The great war now ended has shown to every nation the priceless value of the health of its citizens. The beginnings of health supervision of schools and school children before the war are now seen as movements of the greatest significance for national conversation. (Meckel, 2013, p. 158).

Maintaining the physical health of school children, once an afterthought, now became an integral part of school operations.

Emergence of SBHCs

The literature defines School-Based health centers as places within or in close proximity to a school where students can go to obtain primary medical and/or mental care services that are traditionally provided by a physician or other mid-level health provider such as a nurse practitioner, physician assistant, or licensed clinical social worker (Bains & Diallo, 2015; Federico, Marshall, & Melinkovich, 2011; Koenig et al., 2016; Larson et al., 2017; Lewallen et al., 2015). Dr. Philip Porter, considered by many to be the father of SBHCs, was the chief of pediatrics at Cambridge Massachusetts Medical Center, an affiliate of Harvard Medical School, and simultaneously appointed the director of child public health for the Cambridge City Health Department (Hutchins et al., 1999). Porter, seeing a need for a higher level of health care than was offered in schools at the time, incrementally began replacing traditional school nurses with pediatric nurse practitioners in the 1960s (Hutchins et al., 1999). Pediatric nurse practitioners, considered to be mid-level practitioners, work under the oversight of a physician and are able to provide a higher level of care than registered nurses; most notably, they have the ability to diagnose disease and prescribe medications (Huckstadt, 2016). Porter had nurse practitioners

staff the first SBHCs opened in Cambridge and he traveled around the country duplicating the process in other urban school districts, including Dallas and St. Paul, Minnesota, with high numbers of at-risk students (Gustafson, 2005).

In 1972, the Robert Wood Johnson Foundation, a philanthropic health foundation, was founded and had an especially keen focus on childhood health and wellness (Robert Wood Johnson Foundation, 2018). An early foray into school health services supported by grants funding the placement of nurse practitioners in elementary schools across four states was a failure, as school officials were unable to fund the program after the grant ended (Isaacs & Knickman, 1999). Based on this experience, the Robert Wood Johnson Foundation re-examined the delivery model and formed a new grant to encourage partnerships among private and public entities to provide community health services. Eight major metropolitan cities were grant recipients and five of the eight cities elected to locate their community health centers in secondary schools to address the rise in morbidity and mortality among the adolescent population during that time (Marks, Marzke, & Mathtech, 1993; Public Health Service, 1979).

Adolescent physical and mental health continued to decline throughout the 1980s, and the Robert Wood Johnson Foundation brought on Dr. Porter as director of a School-Based Adolescent Health Care Program that would ultimately provide nineteen grants to establish SBHCs in twenty-four high schools in fourteen cities (Isaacs & Knickman, 1999). Centers were required to provide the following services (Isaacs & Knickman, 1999):

- treatment for common illnesses and minor injuries;
- referral and follow-up for serious illnesses and emergencies;
- on-site care and consultation, as well as referral and follow-up for pregnancy and chronic

diseases;

- counseling and referral for drug and alcohol abuse, sexual abuse, anxiety, depression and thoughts about suicide;
- on-site care and referrals for sexually-transmitted diseases;
- counseling aimed at preventing high-risk behavior that leads to pregnancy, sexually-transmitted diseases, and drug and alcohol abuse;
- sports and employment physicals; and
- immunizations.

The SBHCs of today look very similar to these original service delivery models, with private health care providers partnering with schools to provide services. Later in this study, we will look at the current implementation models.

By 1994, there were 600 SBHCs open and operational in the U.S. (Lear, 2007). That year, the Robert Wood Johnson Foundation launched a third grant program for SBHCs, known as Making the Grade: State and Local Partnerships to Establish School-Based Health Centers. This initiative was, arguably, their most successful, expanding the number of SBHCs in 9 states from 278 to 442 over the course of 6 years (Kanaan, 2007). A program evaluation performed at the end of the grant cycle by KPMG found the following:

- School-based health centers have become an established, permanent, and respected part of the publicly supported health system infrastructure.
- Although school-based health centers have not achieved widespread penetration through the public school systems of this country, there is continued momentum toward program growth, even in states nurturing new and fragile programs.

- School-based health centers need mixed financing strategies involving federal, state, and local sources in both the private and public sectors.
- The political environment and political support for school-based health centers are of fundamental importance to the long-term sustainability of SBHCs.

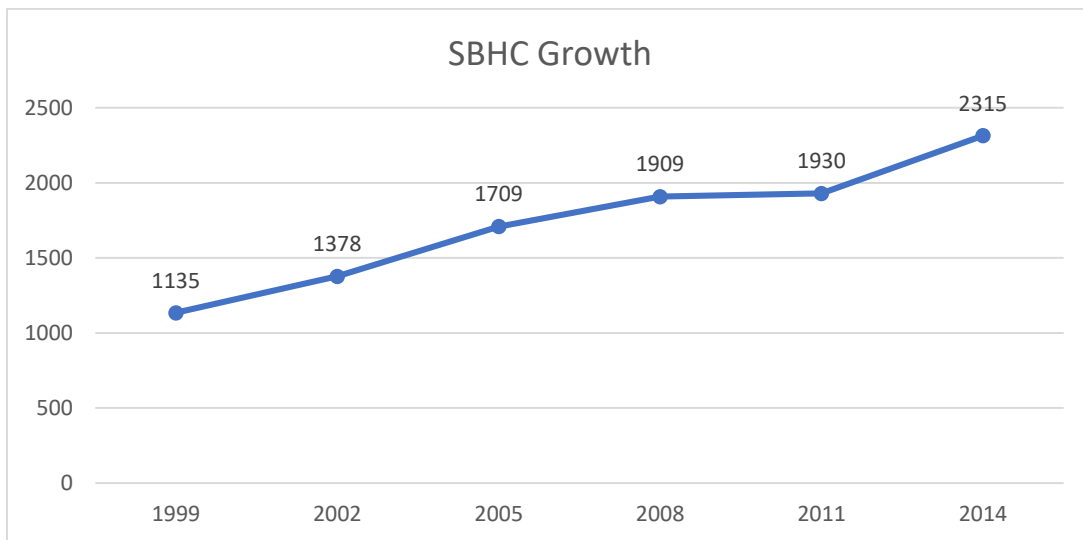


Figure 1. SBHC growth. Source: School-Based Health Alliance (2015).

By design, SBHCs serve schools where a majority of the students come from families with low incomes (Guo et al., 2010). Students who come from families with incomes below a certain threshold of the federal poverty level often qualify for Medicaid (Grants to States for Medical Assistance, 1965). Previously, SBHCs were restricted from billing Medicaid under federal supplanting regulations for services rendered, as financial support for these programs largely came from state and local general funds and private grants. Healthcare reform eliminated the supplanting provision for SBHCs in forty-three states (Lear, Eichner, & Koppelman, 2007). This reform in state fiscal support through Medicaid is a contributory factor to the continued growth of SBHCs (Lear, Eichner, & Koppelman, 2007; Parasuraman & Shi, 2014). Currently, 89% of all SBHCs are able to bill their state Medicaid program for services (School-Based Health Alliance, 2015). Whereas the sustained and predictable fiscal support of SBHCs was

previously identified as a limitation to their viability (Isaacs & Knickman, 1999), with changes in Medicaid regulations, SBHCs became more omnipresent, growing from 1,135 centers nationwide in the 1998-1999 school year to 2,315 by the 2013-2014 school year (see Figure 1), for an increase of approximately 200% (School-Based Health Alliance, 2015).

Whole School, Whole Community, Whole Child

Even with the emergence of SBHCs, student health was still viewed as exclusively under the auspices of health professionals with school personnel, except for the school nurse, playing no role in maintaining student health. Educators largely did not see causal links between the health of a student and their ability to learn. Based on the early shortcomings in healthcare delivery to students in schools, it seemed that for significant advances in this area to be successful educators had to recognize the role that student health played in education and take on a more significant leadership role. As Dr. Michael McGinnis (1981), a physician and former director at the U.S. Department of Health and Human Services, wrote,

What is very clear, is that education and health for children are inextricably intertwined.

A student who is not healthy, who suffers from an undetected vision or hearing deficit, or who is hungry, or who is impaired by drugs or alcohol, is not a student who will profit optimally from the educational process. (p. 13)

This thesis would help to shape the framework of cooperation between health professionals and educators.

Continuing in the 1980s, a grant was awarded to the American School Health Association to explore the expansion of school health services, school health education, and the school health environment by forming the concept of a comprehensive school health program (Allensworth & Kolbe, 1987). In connection with this grant, research by Zanga and Oda (1987) concluded that

health services for students are essential to their participation in the educational process. The outcome of that research was a coordinated school health (CSH) blueprint promulgated by the Centers for Disease Control (CDC). The components of the CSH were all related to services that the school could perform to promote the health and wellbeing of their students and staff (Allensworth & Kolbe, 1987). School health services were identified as providing both short- and long-term outcomes on health status, cognitive performance, and educational achievement by preventing, detecting, and intervening in specific health problems (Zanga & Oda, 1987).

The Association for Supervision and Curriculum Development (ASCD) convened a panel of scholars in 2006 to deliberate on the model for a successful learner who was no longer defined by test performance but based on “one who is knowledgeable, emotionally and physically healthy, civically inspired, engaged in the arts, prepared for work and economic self-sufficiency, and ready for the world beyond formal schooling” (ACSD, 2007). This model for education, described as the whole child model, identified health as paramount to student success. Among the recommendations for promoting student health, local school districts, health and social service agencies, and communities are to collaborate to ensure access to healthcare services (ACSD, 2007).

The Centers for Disease Control (CDC) and ASCD came together in 2013 to combine their efforts on CSH and the whole child (ACSD, 2014). The result was a conceptual evidence-based model formed for schools and communities referred to as the Whole School, Whole Community, and Whole Child. This combined framework was meant to make students an active participant in their own health and to give school administrators, faculty, and staff a bigger role in the framework of school health (ACSD, 2014). While school officials viewed CSH favorably, they looked at it as a policy on health that was peripheral to their mission (Lewallen et al., 2015).

Whereas the CDC is a public health organization generally representing health practitioners, the ASCD, an organization of educators, by being a collaborator in this initiative, gave the role of school officials in student health more prominence. The Whole School, Whole Community, Whole Child model brought the concepts in CSH and whole child together while adding critical components of student-centered initiatives on health (Lewallen et al., 2015).

Linking Health and SBHCs to Educational Outcomes

School Connectedness

With demands on schools to increase student success, researchers and school administrators have been examining factors that can influence a student's achievement ability. Student engagement and attachment to the school were long thought to have a tangential impact on educational outcomes (Libbey, 2004). Students who are engaged show higher academic achievement than those with lower levels of connection to the school (Nasir, Jones, & McLaughlin, 2011). Therefore, it is in the interest of school communities to create opportunities for students to connect to their school.

Narrowing the concept of school connectedness from abstract to more concrete, the factors of student engagement, attachment, and school bonding were formed into a construct known as school connectedness, which is formally defined by the CDC (2009) as "the belief by students that adults in the school care about their learning as well as about them as individuals" (p. 3). There now exists a body of research illustrating the connection between school connectedness, higher test scores (Bond et al., 2007; Catalano et al., 2004; Klem & Connell, 2004), grades (Barber & Olsen, 1997; McNeely, Nonnemaker, & Blum, 2002; Niehaus, Rudasill, & Rakes, 2012), attendance (Rosenfeld, Richman, & Bowen, 1998), and educational attainment (Niehaus, Irvin, & Rogelberg, 2016). This body of literature is illustrative of school

connectedness being related to educational outcomes. Due to the incontrovertible relationships among school connectedness, student achievement, attendance, and educational attainment, I include it first, and those discrete individual educational outcomes are examined later in this literature review.

School Connectedness-SBHCs

Early researchers on SBHCs had trouble designing studies that correlated the presence and use of an SBHC to educational outcomes. Geierstanger et al. (2004), noting the methodological issues faced by SBHC researchers, suggested that the result of the presence and use of an SBHC might not always produce an observable statistic but may, rather, produce the latent variable of school connectedness. This hypothesis was formed from the work of Bonny et al. (2000), who studied cross-sectional self-reported survey data in a national longitudinal study of 4,773 students in grades seven through twelve and found that a student's school connectedness had a significant association with better academic performance, better health status, and student's having a propensity for less risky behaviors. Thus, Geierstanger et al. (2004) posited that since an SBHC offers the opportunity for a student to form a personal connection with the school, its presence and use might indirectly influence academic performance.

In his work on the effects of health on educational outcomes, Basch (2011b) identified school connectedness as one of five causal pathways between health and the ability and motivation to learn. Citing an emerging body of work that illustrates the importance of school connectedness on academic achievement (Battin-Pearson et al., 2007; Bond et al., 2007; Fleming et al., 2005; Klem & McConnell, 2004; Ladd, Birch, & Buhs, 1999; Rosenfeld, Richman, & Bowen, 1998) and child and adolescent health, he pointed out the lack of empirical evidence in

the existing literature (Basch, 2011a). To remedy this paucity of data, Basch (2011b) recommended defining and creating measures of school connectedness and incorporating the collection of that data into existing U.S. Department of Education collection systems as part of an overall system to track the relationship between health and educational outcomes. While, to date, that has not been done, there have been published empirical studies performed using survey data to determine if the presence and use of an SBHC is related to school connectedness.

Strolin-Goltzman (2010) performed a retrospective quasi-experimental analysis of aggregated survey data from 208 schools that were each served by an SBHC. The results showed that students in schools with an SBHC had statistically significant ($p < .05$) higher levels of school engagement and perceived their expectations of academic achievement to be higher than that of their peers in the control group. Further, parents surveyed had statistically significant ($p < .01$) higher reported levels of engagement with the school. Aside from its findings, the results of this study are significant due to the study's design and methodology. The results of the survey data were aggregated rather than treated individually, which allowed for inference on the nature of the school in relation to the construct of school connectedness rather than the more discrete and variable unit of a student within the school (Haneuse & Bartell, 2011). Had the unit of measurement remained an individual student, the results could have been skewed based on different students' perspectives within the same school not being representative of the school as a whole or a majority of students in one or more particular schools having the same perspective, skewing the results (Roux, 2004).

In creating the control group in a quasi-experimental analysis with a treatment group (schools with an SBHC) and a control group (schools without an SBHC), there could exist significant limitations in selection and indication bias (Jupiter, 2017; Rosenblum & Rubin,

1983). A control group of schools not served by an SBHC was created using a propensity score to control for these biases. The creation of propensity scores allowed the researcher to form a control group that was closely aligned with the treatment group of schools with SBHCs (Jupiter, 2017). To put it simply, the selection of schools with SBHCs were compared to schools without SBHCs that had similar characteristics, thus minimizing confounding variables and increasing the validity of the results.

The use of propensity score matching as a design and analysis technique is prevalent among a number of the studies that the researcher examined. SBHC presence and use are often associated with urban or rural schools in which poverty and particular sets of demographics are more likely prevalent (Basch, 2011a; Guo et al., 2010; Parasuraman & Shi, 2014, 2015). The prevalence of low socio-economic status (SES), for instance, creates a confounding variable from which inaccurate assumptions may be drawn. For example, if researchers were to pull a sample of students from a school with low SES and a school with high SES, they would more likely find higher test scores in the school with high SES irrespective of any other variable vis-à-vis SBHC presence and use. Geierstanger et al. (2004) noted that a limitation in existing SBHC studies at the time is that they did not control for these baseline differences. Further, in creating a quasi-clinical trial, researchers could not legally or ethically withhold treatment or access to an SBHC where it was offered to other students in the school; therefore, retrospective and prospective data analysis must create an external control group that is not exposed to the treatment (Jaycox et al., 2006). To control for this limitation, propensity score matching is employed to create a control group with similar characteristics to the treatment group for both internal and external factors with the exception of the variable being studied (Rosenbaum &

Rubin, 1983). This enhances the validity of the results since like groups are compared (Austin, 2011; Bai, 2011; Martens et al., 2008).

Strolin-Goltzman (2014) followed up this research by surveying seven hundred ninety-three students from three schools on their use of an SBHC and triangulating that data with the students' grades, attendance, and grade promotion. In designing the study and formulating survey questions, the researcher relied upon variables of school connectedness observed in previous studies, including school bonding found in the work of Guo et al. (2001) and school attachment found in Libbey (2004). Triangulation of the data by collecting survey data and comparing it to the student's retrospective educational statistics enhanced the validity of that study (Carter et al., 2014). The survey went through a principal component analysis, which led to the extraction of the following manifest variables: school bonding, school attachment, and commitment to educational future. Insofar as school connectedness is a latent variable, a principal component analysis was an appropriate methodology to determine how school connectedness would be observed and measured (Costello & Osborne, 2005; Floyd & Widaman, 1995). The results of the study found measures of school bonding and school attachment to have a highly statistically significant ($p < .001$) correlation to a student's use of an SBHC. A student's commitment to their educational future was found to have a statistically significant correlation ($p < .01$) to the student's use of the SBHC.

Stone et al. (2013) performed a similar empirical study in fifteen high schools in the San Francisco Unified School District using the term "school assets" to refer to a composite variable made up of the dependent variables of a student's perception of having a caring relationship with an adult in the school, the school having high expectations of students, and students having meaningful participation in the school. Drawing from a sample of 2,981 SBHC users, propensity

score matching was utilized to create a control group of the same size and demographic characteristics. Use of the SBHC had a statistically significant relationship ($p < .01$) with students reporting having a caring relationship with an adult in the school and had a highly statistically significant ($p < .001$) correlation with students reporting the school having high academic expectations of them and their having a meaningful relationship with the school.

Student Achievement

Modern schools exist with the stated purpose of educating students (Reese, 2001). Whereas a business reports measures such as net profit to illustrate its efficacy, a school reports on the achievement of its students as a measure of effectiveness. The *No Child Left Behind Act* (NCLB) of 2001 placed new and increased accountability standards on schools, with a focus on student achievement. With the implementation of NCLB, schools not only had to report on student progress, but they were also held accountable for the adequate yearly progress of students' performance based on various benchmarks (Hanushek & Raymond, 2005). NCLB was repealed in 2015 and replaced with the *Every Student Succeeds Act* (ESSA). While ESSA undid some of the NCLB accountability regulations, its emphasis was on college and career readiness, with school communities still intently focused on academic achievement as an indicator of this readiness. Furthermore, Title I of NCLB was re-codified in ESSA, renewing provisions of federal laws and appropriations to support the academic achievement of students in schools where over 40% of students are at risk and, therefore, are more likely to have lower academic achievement than their higher SES peers.

Berdhal et al. (2013) examined the accessibility of healthcare resources for low-income children and concluded that while the number of children with access to private healthcare has declined over time, the number of low-income children on either Medicaid or having no

insurance has increased. This gap between high and low-income children in access to healthcare is also believed to be a contributing factor to the academic achievement gap of the same groups (Basch, 2011a). Even in spite of better access to healthcare, Jackson (2015) found that unhealthy students significantly fall behind their healthier peers.

Geierstanger et al. (2004) noted design challenges of research into the effects of SBHCs on academic outcomes and the corresponding paucity of research. Drawing correlations between academic achievement and health interventions is a noted research design issue throughout the field; however, the dependent variables of grade point average and achievement test scores have been accepted as measures of outcome (Leroy, Wallin, & Lee 2017; Murray et al., 2007; Walker et al., 2010). Consequently, for the purposes of this literature review, measures of student achievement include student grades and test scores.

Student Achievement-SBHC

A recent survey of SBHCs showed that 77.6% serve Title I schools, which have an at-risk population of over 40% of the student body (School-Based Health Alliance, 2015). Educators and health professionals, noting the links between health and educational outcomes described throughout this literature review, coupled with the lack of access to healthcare (Basch, 2011a; Padula et al., 2018) and higher prevalence of health issues for at-risk students (Case & Paxson, 2006; Jackson, 2015), turned to SBHCs to fill the void in healthcare with the hope of increasing student achievement.

Walker et al. (2010) performed a three-year retrospective study of a cohort of entering high school freshmen in thirteen high schools in Seattle, Washington. The treatment group included any student who used the SBHC in the first semester of their freshman year ($n = 445$). Using propensity score matching, a group of non-users was selected as a control group, and

students who initiated SBHC use after their first semester but before the end of the study were excluded. However, due to limitations from a sample of non-users from within the same school, students who used SBHC were more likely to have a lower GPA than those in the control group ($p < .001$). Therefore, latent growth modeling, a statistical technique used to estimate growth over time (Isiordia & Ferrer, 2018), was applied to compare the growth of GPA over time for SBHC users and non-users. The results showed that a student's SBHC use was a statistically significant ($p < .05$) predictor of the increase of their GPAs over time.

Student Attendance

According to the 2015 National Health Interview Survey performed by the National Center for Health Statistics, 69.8% of children aged five to seventeen years missed at least one day of school in the past twelve months. While it may seem like common sense that a student needs to be in school to receive the instruction being delivered, numerous studies have shown a statistically significant relationship between student attendance and academic achievement at all grade levels (Gottfried, 2010; Roby, 2004; Sheldon, 2007). Further, research has shown that the effects of the proportional relationship of student attendance and positive or negative academic outcomes are particularly acute for at-risk students (Balfanz & Byrnes, 2006; Balfanz & Letgers, 2004; Breger, 2017).

Student Attendance – SBHC

To mitigate the effect of decreased student attendance on negative educational outcomes, some schools have implemented an SBHC (Kearney & Bensaheb, 2006). Many states require a student, before even attending school, to obtain a physical examination and immunizations. In a single group before and after study of the implementation of an SBHC, there was a significant

(74%) reduction in the number of students excluded from school for lack of the requisite physical exam (Foy & Hahn, 2009).

Van Cura (2010) studied the effects of SBHC use on early dismissals and the loss of seat time in an urban high school in New York. To compare rates of early dismissal and loss of seat time, the control group was formed using students in the same school who were not enrolled in the SBHC but who visited the school nurse. A second control group was formed from a high school without an SBHC using encounter data from students who visited the school nurse during the same period. The results of the study showed that students who utilized the SBHC were significantly ($p < .05$) less likely to be dismissed early from school and lost about a third of the seat time compared to students in the control group who had just received treatment from the school nurse.

The effects of the presence and use of an SBHC is particularly significant to the attendance of students with chronic illnesses. Leroy, Wallin, and Lee (2017) performed a systematic review of the literature associated with the effects of SBHCs on students with the chronic health conditions of asthma, diabetes, seizure disorders, food allergies, and poor oral health. Out of twenty-four studies examined, nineteen studies either showed a statistically significant correlation ($p < .05$) or positive trends in the attendance of students with chronic health conditions.

Educational Attainment

The National Center for Education Statistics (2018) reported that approximately 5.2% of the high school aged population left school between October 2013 and October 2014 without obtaining a high school credential (McFarland, Cui, & Stark, 2018). Furthermore, the dropout rate for students from low-income families of 9.4% is almost four times larger than the dropout

rate of students from high-income families (2.6%; McFarland, Cui, & Stark, 2018). The deleterious effects of dropping out of school ranged from diminished economic prospects (Rouse, 2007) to worse health (Pleis, Ward, & Lucas, 2010).

Health status and educational attainment are of concern to the entire student population. In fact, despite the achievement gap and higher dropout rates that exist among minority and students from a low SES background, Jackson (2009) found that the adverse effects of poor health on educational attainment put non-Hispanic whites at an equal if not greater disadvantage for educational attainment. In that study of United States longitudinal data, health status was an independent variable determined from adolescent responses to a survey tested against the dependent variable of educational attainment. While a survey is a valid and reliable instrument, self-reported health status is prone to error (Zajacova & Dowd, 2011). However, similar follow up testing by Jackson (2015) utilized a different set of longitudinal data from the United Kingdom that relied on periodic medical exams to determine health status, enhancing the reliability of the results.

Educational Attainment-SBHC

Bersamin et al. (2016) performed a regression analysis of publicly available educational attainment data from California High Schools with SBHCs. A control group was created using propensity score matching from high schools without an SBHC and the two groups were compared on the basis of rates of attainment and college preparation. The results showed that the presence of an SBHC was not correlated to graduation rates or students meeting graduation requirements. However, the presence of an SBHC was significantly correlated ($p < .01$) to the participation of students in college entrance examinations and advanced placement courses. A significant limitation of the study was that it examined school-level data and was unable to be

used as factor in a student's use of the SBHC for the purposes of correlation—that is, for determining whether a student's use of an SBHC correlates to a student graduating from high school or meeting the graduation requirements.

Kerns et al. (2011) performed a longitudinal study of SBHC use and drop out rates, examining the relationship between SBHC users and non-users. A Cox regression time-to-event analysis was selected to perform data analysis, which allowed the researcher to study the likelihood of a student dropping out each semester in correlation with dichotomous and non-dichotomous variables (Walters, 2012). Next, propensity scoring was applied to the baseline results, showing that the results did not vary significantly post calculation, further increasing the validity of the results. Finally, propensity scoring was applied to other variables that were initially shown to have influenced a student's time to drop out. The study found that students who, on average, visited the SBHC 0.125 to 0.5 times per semester were significantly ($p < .001$) less likely to drop out compared to non-users, and students who on average visited the SBHC 0.51 to 2.51 per semester were significantly ($p < .05$) less likely to drop out compared to non-users (Kerns et al., 2011).

School-Based Health Center Implementation

Stakeholders

The origination of an idea to start an SBHC can come from the school or district, an external healthcare provider, the community, or any combination of the three (Kanaan, 2007; Price, 2016, 2017). The aforementioned studies suggest reasons why schools may wish to implement an SBHC to improve students' educational outcomes. There is also a body of research that suggests that irrespective of the motivation to impact educational outcomes, a school may start an SBHC to serve a public health benefit (Barnett & Allison, 2012); that aspect

is not covered by the present study. Whatever the reason for starting a center, the cooperation and support of the school district and community are essential to its success (Keeton, Soleimanpour, & Brindis, 2012; Price, 2017).

The stakeholders involved in deciding to start a center include local boards of education, school administrators, school faculty and staff, parents and guardians, and students (Keeton, Soleimanpour, & Brindis, 2012). The roles and responsibilities of individual stakeholders vary depending on the method of implementation, but they all remain vital to the success of the program. The board of education is a policymaking and oversight body responsible for making sure that schools are well run (National School Boards Association [NSBA], 2018). The role of the board, in this case, is authorizing the placement of an SBHC in the school and setting policies surrounding the program. School administrators are responsible for recommending the implementation of an SBHC to the board and for selecting and recommending an implementation model. Depending on the type of program, they may also be responsible for the overall management and administration of the center. The school faculty and staff interact with students on a daily basis and need to have at least a general knowledge of SBHC programs and services available to students so that they can identify students who can benefit from the program (Horton & Lima-Negron, 2009). School health personnel, in particular, may be critical liaisons to the SBHC. Parents and guardians also need to know about the availability and nature of services offered and, ultimately, approve of their children being seen and treated by practitioners in the SBHC (National Association of School Nurses, 2015). Students, as customers of the SBHC, are the most important piece of the schema (Keeton, Soleimanpour, & Brindis, 2012).

When selecting a model for implementation, school districts need to be aware of the logistical, operational, and financial factors associated with implementing and running an SBHC

(Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2017). The two major methods of implementation for centers are school district operated and collaboration between school districts and healthcare providers (Keeton, Soleimanpour, & Brindis, 2012; Price, 2016, 2017). Staffing, fiscal considerations, and logistics and operations considerations are common to both models; thus, the researcher explores those areas first and then identifies the particular elements of each.

Staffing

Staffing for a center is a function of the services offered and its size. According to Federico, Marshall, and Melinkovich (2011), the most common services offered in centers include “comprehensive health assessments, acute minor illness care, health screenings, chronic illness care (e.g., asthma), immunizations, and anticipatory guidance” (p. 115). The results of a recent national survey of SBHCs on staffing (Figure 2) showed that all (100%) centers employed a primary care provider (School-Based Health Alliance, 2015), which can be defined as a physician, physician assistant, or nurse practitioner (Federico, Marshall, & Melinkovich, 2011; Lewallen et al., 2015). The most common clinical staff found in centers are physician’s assistants and nurse practitioners, who are referred to as mid-level practitioners and work under the oversight of a physician (Gustafson, 2005; Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016). Physician’s assistants and nurse practitioners are at least masters’ degree prepared professionals who are licensed by their states to diagnose and treat illnesses, and they can prescribe medications to students when indicated (Poghosyan, 2018).

The next largest provider type in centers was mental health clinicians, who can be defined as licensed clinical social workers or psychologists (Bains et al., 2017; Federico, Marshall, & Melinkovich, 2011). Other clinical staff found in centers may include optometrists, health educators, nutritionists, and dentists (Price, 2017). Clinical support staff who work in

centers include medical assistants and clerical personnel. While working in a school setting may not be as lucrative as working in other clinical settings, some providers find that it offers a better schedule and the reward of having a direct influence on a child’s life (Colorado Association for School-Based Healthcare, 2010b).

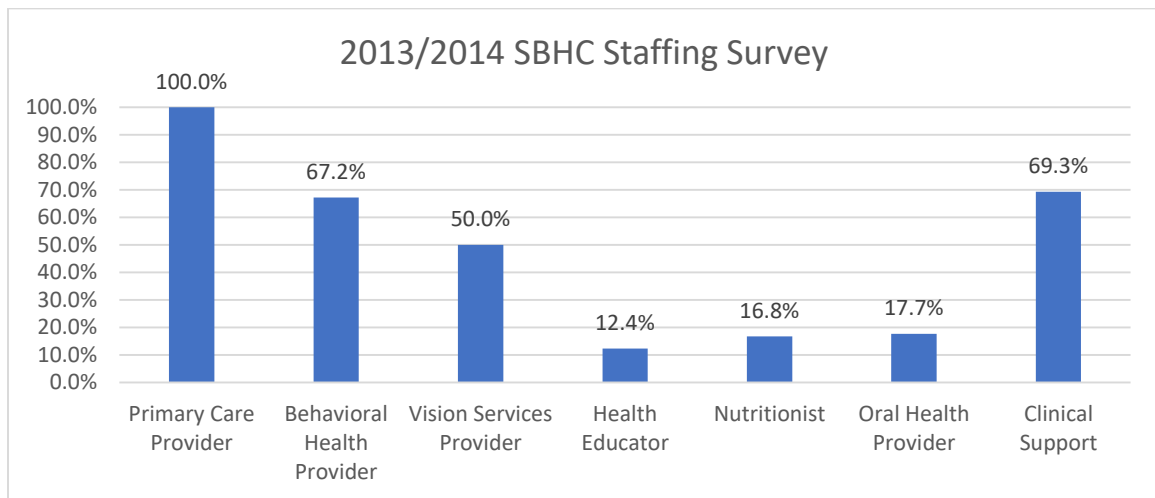


Figure 2. 2013/2014 SBHC staffing survey. Source: School-Based Health Alliance (2015).

Tele-health has been a recent trend in staffing some clinical services of SBHCs (Lear, 2007; Price, 2016, 2017). Through tele-health, student patients can connect with providers virtually. This is particularly prevalent in mental healthcare services, as the provider need not necessarily be present with the patient to provide services (Larson et al., 2017). Tele-health setups also can assist the clinical staff with obtaining consults from specialized clinicians who may not be otherwise available in close proximity to the center (Lessard & Knox, 2000).

Fiscal Considerations

Expense

The costs of operating an SBHC vary depending on size, services offered, and regional costs of living. Horton and Lima-Negron (2009) reported that the approximate start-up cost of an SBHC in New York was between \$200,000 and \$350,000, with higher costs associated with bigger centers in bigger schools. The dollar from 2009, adjusted 1.67% for inflation

(Minneapolis Federal Reserve, 2018), equals an approximate price adjusted range in 2018 of \$232,119 and \$406,209. This cost is inclusive of any necessary renovations to the facilities for the SBHC along with the initial purchase of capital and consumable medical equipment and salaries during the planning and implementation phase of the center.

A study in Oregon that examined the generation of cost estimates for opening and sustaining SBHCs found that start-up costs include staff salaries during start up, construction or renovation of a space, office equipment, and medical equipment (Nystrom & Prada, 2008). Startup costs were estimated to be at a minimum, without construction, of \$34,750 to \$95,750. The dollar from 2008 adjusted 1.72% for inflation (Minneapolis Federal Reserve, 2018) equals an approximate price adjusted range in 2018 of \$40,187 to \$110,731. Operating costs were identified as salaries, benefits, and medical supplies. The largest factors contributing to operating costs was the size and composition of staff and the number of hours they worked. The number of hours that the center is open during the week, along with the clinical certifications of staff (i.e., physician, physician assistant, nurse practitioner, registered nurse), was proportional in size to the level of expenditure. Smaller centers at the lower end of the spectrum operating at ten hours a week had an operating cost of \$116,000 per year while a large center operating at twenty hours per week had costs upwards of \$402,500 (Nystrom & Prada, 2008). The dollar from 2008 adjusted 1.72% for inflation (Minneapolis Federal Reserve, 2018) equals an approximate price adjusted range in 2018 of approximately \$134,150 to \$465,478.

Revenue

For the most part, SBHCs are not for profit entities (Price, 2017). Sources of funding for SBHCs can include reimbursements from health insurance, an appropriation in the local school district's operating fund, state or federal funding, corporate sponsorships, or grants from a

private foundation (Lear, 2007). SBHCs often have more than one revenue stream, including public and private insurers combined with grant funding (Keeton, Soleimanpour, & Brindis, 2012). A national survey of SBHCs revealed that, among survey respondents, 70.9% received some form of funding from the state government, 33.9% from the school district, 17.2% from a corporation or business, and 40.4% from a private foundation (School-Based Health Alliance, 2015). Further, the survey showed that 69% of centers billed private/commercial insurance, 89% billed Medicaid, and in 48% of cases, students' families may be charged co-pays or other fees associated with receiving services (School-Based Health Alliance, 2015).

Over the past decade, the United States has undergone significant healthcare reform. The federal government recognized SBHCs formally in health reform legislation, appropriating \$200,000,000.00 for SBHC capital construction grants for fiscal year 2010 to 2013 in Section 4101 of the *Patient Protection and Affordable Care Act* (2010). The SBHC capital construction grants were disbursed for construction, renovation, or equipment to open or expand SBHCs, with an emphasis on communities in which a large number of students received Medicaid. By the end of the grant cycle, the Human Resources Administration, which was responsible for the administration of the grant, awarded and disbursed grants totaling \$189,935,418, with New Jersey SBHCs receiving \$3,138,049.00, or 1.65% of the total funding available (School-Based Health Alliance, 2013). Despite this investment in SBHC capital expansion, operating and sustainability costs were not funded in this legislation (Parasuraman & Shi, 2014). That original funding allocation ended in fiscal year 2013 and, since then, continuing appropriations have been authorized to fund competitive grants for the capital expenditures of existing centers. Other sources of revenue for capital expenditures related to the renovation and construction of centers

can come from a school district's issuance of bonds, private investment, or grants from non-profit entities.

School District Operated Centers

A school district operated SBHC is one in which the school is responsible for the financial and operational management of the center, including staffing. The center is a component of the school district and falls within its organizational chart. Staff in the center are employees of the school district and supervised by district administrators. In a recent survey of 1,734 SBHCs, 11.8% responded that they were operated by the school system (School-Based Health Alliance, 2015).

The typical setup of a school district operated center is, minimally, a nurse practitioner overseen by the school physician or another cooperating medical doctor (Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016; Sprigg et al., 2007). The costs of a school-operated center vary depending on the size of the center and the number of students who the SBHC will treat, collective bargaining agreements that may cover clinical staff, and the startup and maintenance costs of medical equipment. In addition to allocating space in the school, the district is responsible for appropriating funds for and purchasing consumable medical supplies. Major sources of revenue in school operated programs come from the school district's general fund, state and federal grant funding, grants from private foundations, and insurance reimbursement (Federico, Marshall, & Melinkovich, 2011; Lear, 2007).

The literature has noted limitations of school-sponsored SBHCs as trouble recruiting and retaining part-time practitioners, the oversight of clinician credentialing and hiring, issues managing complex medical billing, and school administrators' focus on educational priorities and management of the school at large (Colorado Association for School-Based Healthcare,

2010a; WV School Health Technical Assistance Center at Marshall University, 2014). While school districts lose some control when handing the management and operations of an SBHC over to a third party clinical provider, those providers have the healthcare experience and infrastructure necessary to gain cost efficiencies in the center (Colorado Association for School-Based Healthcare, 2010a; WV School Health Technical Assistance Center at Marshall University, 2014). Further, in the past, school districts that have faced shortfalls in their operating budgets prioritized their primary mission of education over that of the continued operations of the SBHC (Price, 2016; Sprigg et al., 2017).

Collaborative Center Between School District and Healthcare Provider

A school district that operates in collaboration with a healthcare provider may issue a request for proposal (RFP) to procure clinical services or operate under a memorandum of understanding (MOU) to provide space and support to the SBHC. Healthcare providers with which the school district can partner include local health departments, hospitals, and clinics. In an MOU, the district's involvement in the SBHC can include providing space, offering administrative support, sharing student data, and giving students referrals to the center (Keeton, Soleimanpour, & Brindis, 2012). The district is not responsible for the operating costs of the center but remains responsible for the overhead facilities costs. In return for being given access to the school and authorization to bill a student's health insurance, some MOUs include a provision that the provider will not charge uninsured students for treatment (Silberberg & Cantor, 2008).

An MOU with a healthcare provider has a written agreement between the healthcare provider and the school district, delineating the roles and responsibilities of each entity. Where the clinical care of students takes place on school grounds and/or during the school day, the

district should ensure that the healthcare provider appropriately indemnifies them against liability and should advise their own insurance carrier of the arrangement to protect against vicarious liability claims that could result (Gereige & Zenni, 2016).

A district issuing an RFP to procure clinical services enters into a contract with a healthcare provider who provides staffing and operational oversight of the center for a fee. RFP processes and corresponding contracts are often governed by state law (Everett, Johnson, & Madden, 2012). Under this arrangement, the provider may first bill a student's insurance and then any unreimbursed costs are billed to the school district. The school remains responsible for the facilities costs associated with having the center in the school. Sprigg et al. (2017) noted that, historically, the use of an MOU has been more successful than an RFP since the healthcare provider has little incentive to aggressively pursue reimbursement from insurance companies since any non-reimbursed expenses were made up by the school district.

Whereas in a school-operated center school, employees have access to a student's records, no such sharing is allowed with an independent SBHC without a parent or guardian's written consent, pursuant to the Federal Education Records Privacy Act (1988). The school district, by resolution of the board of education, can choose to share student information with the SBHC if the parent or guardian consents to it. The school district nurse can refer a student to the SBHC if a higher level of care is necessary; however, a parent must consent in writing before any information is shared or services rendered. Once students become patients of an SBHC, those records are subject to the confidentiality requirements found in the Health Insurance Portability and Accountability Act (1996) and, consequently, cannot be shared with the school unless the parent consents to that disclosure in writing as well. The school board's attorney

should work alongside legal representatives of the SBHC to draft parental disclosure consent forms and coordinate their timing and retention.

The most common structure of the healthcare provider is an affiliation with a federally qualified health center (FQHC; Community Preventive Services Task Force, 2016). FQHCs are entities receiving a Public Health Service Act (1991) Section 330 grant from the Health Resources & Services Administration, which provides for funding to provide primary care and other health services to medically underserved populations. Aside from that federal grant, an FQHC is eligible for enhanced Medicaid reimbursement (Federally Qualified Health Centers, 2016). FQHCs serve communities wherein a large portion of the population comes from low-income backgrounds, making the FQHC a natural healthcare provider for SBHCs since a majority (92.8%) of SBHCs serve students from low socioeconomic backgrounds (Price, 2016). The predictable funding sources of FQHCs and their existing clinical infrastructures make them a particularly attractive partner for school districts seeking to open a center (Nystrom & Prada, 2008; Washington & Brey, 2005). Figure 3, using data from the 2013-14 School-Based Health Center Census, shows a significant (27.5%) increase in the number of FQHCs as operators of SBHCs over the past twelve years.

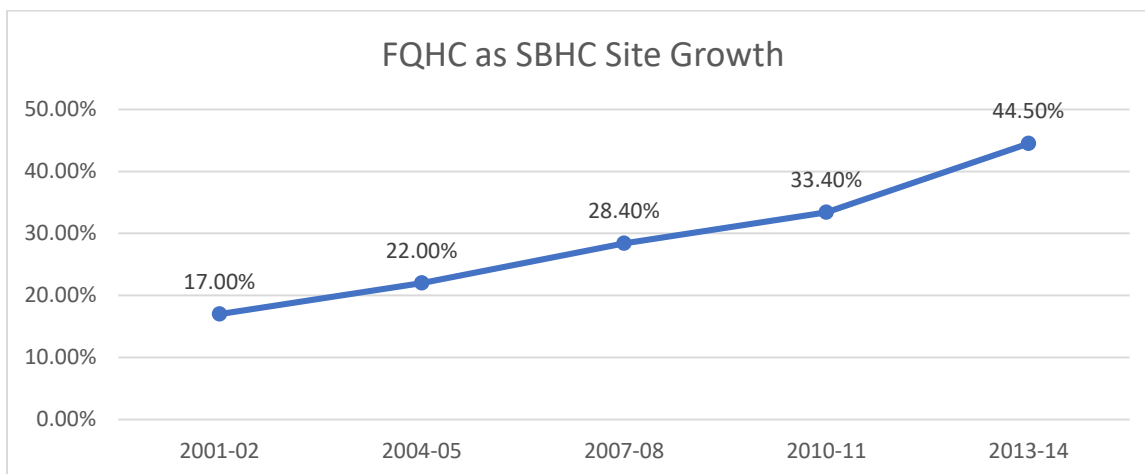


Figure 3. FQHC as SBHC site growth. Source: School-Based Health Alliance (2015).

The mission of an SBHC is to serve all students seeking services, regardless of insurance status, which is congruent with the mission of an FQHC: to serve all those seeking care without regard to the ability to pay (Centers for Medicare and Medicaid Services, 2016; Keeton, Soleimanpour, & Brindis, 2012). Further, FQHCs receive revenue, in part, based on the number of students enrolled to receive care, known as capitation payments (Poppitt, & Dacso, 2010; Swider & Valukas, 2004). This further incentivizes FQHCs to maximize the number of students to whom they deliver care (Sprigg et al., 2017). Studies have shown that for an FQHC SBHC to be economically viable, it should have at least five hundred students in its care (Sprigg et al., 2017). While the literature suggests that, largely, FQHCs are the preferred sponsors of SBHCs, a noted limitation is that they are not available in every community (Horton & Lima-Negron, 2009).

While the formation of most SBHCs originates with the school, some healthcare providers are motivated to approach a school district about starting a center. Hospitals are faced with a growing number of unnecessary visits to the emergency department that could be handled in alternative outpatient settings (Weinick, Burns, & Mehrotra, 2010). As a result, some hospitals have sought to start SBHCs as a strategy for reducing emergency department visits (Allison et al., 2007; Barnett & Allison, 2012; Guo et al., 2010). Recent changes in the *Patient Protection Affordable Care Act* (2010) require those hospitals designated as non-profits to perform community needs health assessments and make investments in community healthcare initiatives. The opening of SBHCs has helped hospitals to achieve that goal while, at the same time, providing access to healthcare for students (Price, 2017).

Conclusion

While recognition of the link between health and educational outcomes occurred as early as the nineteenth century, early efforts to provide primary healthcare in schools had mixed results. It was not until the second half of the twentieth century that school districts and clinicians joined to expand the level of healthcare offerings in schools. In an effort to improve academic achievement and close the achievement gap, school communities have expanded their focus from the improvement of instruction to other means of achieving these goals. Researchers have stated that a student's health or lack thereof, combined with inaccessibility to healthcare, has deleterious effects on student achievement, particularly for students from low-SES backgrounds.

During the course of this literature review, the researcher has noted a causal link between student health and educational outcomes. A student's sense of connectedness to the school has been shown to improve academic achievement, educational attainment, and attendance. Studies on SBHCs demonstrate statistically significant positive correlations between the presence and use of an SBHC and school connectedness. Further, previous studies have indicated a statistically significant positive correlation between the presence and use of SBHCs and the following discrete variables of educational outcomes: GPA, school completion, and student attendance.

There is a paucity of research on a school district's implementations of an SBHC; thus, there is a need for further research in this area. To overcome this dearth of knowledge, the researcher reviewed materials from professional organizations, peer-reviewed cost studies, and policy papers published by major think tanks such as Brookings. In reviewing all of this material, the researcher found that when implementing and maintaining an SBHC, the school

administrator must be attentive to stakeholder groups as well as to the operational, staffing, and financial needs of centers. In the next chapter, the researcher will discuss the methodology that was used to gather and report information on the implementation and management of SBHCs.

Chapter III

Methodology

Research Design

The researcher has selected a case study design to investigate this topic. The proposed research sites include three schools located in NJ that have each used a different method of implementing and operating a school-based health center. The intent of this study is to provide an in-depth description and analysis of the units of study, to wit three school-based health centers in NJ, which form a bounded system (Merriam & Tisdell, 2016).

Research Questions

This descriptive, qualitative study sought to examine the implementation of school-based health centers in three New Jersey public schools with regard to their operation and finances, and determine methods upon which school administrators determine the efficacy of such programs. The case study analysis allowed the researcher to analyze the following questions:

1. What is the process by which three New Jersey school districts implemented school-based health centers?
 - a. What is the method of formation and structure of the school-based health centers in three New Jersey school districts?
 - b. What types of services do the school-based health centers in three New Jersey school districts offer to students?
 - c. What are the personnel needs of the school-based health centers in three New Jersey school districts?
 - d. What are the major sources of revenue and expenditures for the school-based health centers in three New Jersey school districts?

2. How is the efficacy of school-based health centers assessed for its impact on educational outcomes defined by the literature as (a) school connectedness, (b) student achievement, (c) student attendance, and (d) educational attainment?

The purpose of this study was to provide information to current school administrators and others on the implementation and operation of school-based health centers in New Jersey. A case study was chosen based on its ability to allow the research to “explore a bounded system (a case) . . . through detailed, in-depth data collection involving multiple sources of information and reports a case description and case themes.” (Creswell, 2013, p. 97). The bounded system (Merriam & Tisdell, 2016), in this case, is the three SBHCs chosen to be part of this study.

Sample

Purposeful sampling was employed to obtain a sample that contained each method of school-based health center implementation identified in the literature as a school district operated center, a collaborative center, or a federally qualified health center in a school. The purposeful sample helped the researcher gain an in-depth understanding of each of these methods of implementation (Patton, 2015). Further, the researcher was familiar with these school districts and has collegial relationships with top administrative personnel in those districts which was critical in securing access.

Profile of Sites

School A is a PK-12 school district in New Jersey that is designated as District Factor Group (DFG) “B” by the State of New Jersey. DFG denotes to the community’s relative socioeconomic status (New Jersey Department of Education, 2018), which in this case is the second lowest of eight rankings that the state uses to categorize school districts from “A” to “I”.

The district is a former Abbott or SDA district. This refers to the designation it received in a second iteration of the landmark NJ school funding case *Abbott v. Burke II* (1990) which in brief provided supplemental funding to 31 school districts who were found not to be providing a constitutionally guaranteed thorough and efficient to their students and had many students coming from low SES backgrounds, low proficiency achievement, and a high number of learners requiring specialized services. The SBHC in School A exists in the district's sole high school which serves students in grades nine to twelve. According to the NJ DOE School Performance Report during the 2016-2017 school year, School A had an enrollment of 1,409 students of which 76% were reported as being economically disadvantaged.

School B is a PK-12 school district in New Jersey consisting of eight schools that is designated as DFG "CD", the third lowest ranking given by the state. School B is also a former Abbott district. The SBHC in School B exists in an elementary school which serves students in grades preschool to fifth. According to the NJ DOE School Performance Report, during the 2016-2017 school year, the school had an enrollment of 450 students of which 71% were reported as being economically disadvantaged.

School C is a PK-12 school district located in New Jersey consisting of eleven schools that are designated as DFG "A", the lowest state ranking. School C, like the other two sites in the study, is a former Abbott district. The SBHC in School C exists in the district's sole high school which serves students in grades nine to twelve. According to the NJ DOE School Performance Report, during the 2016-2017 school year, the school had an enrollment of 1,942 students of which 87% were reported as being economically disadvantaged.

Schools A, B, and C were specifically chosen because each represented a specific model of implementation, the researcher was familiar with the overall school system the center existed

in, and the access and availability of the sites. Boddy (2016) found that even case studies with a single sample can be valid and relevant depending on the subject of the study. A small sample size bounded case study was common among previous research on implementation of SBHCs. In a study by Nystrom and Prada (2008), five of forty-three SBHCs in Oregon were selected as a sample, “because it was not feasible to conduct in-depth case studies in all systems.” A later study by Padula et al (2018) on cost and staffing of a center used a sample of just one school-based health center in Baltimore, Maryland.

Data Collection

The main source of data collection was interviews and procurement of documentary evidence. Interviews were used as, “a process in which a researcher and participant engage in a conversation focused on questions related to a research study” (DeMarrais, 2005, p. 55).

Interview questions were formulated specifically to answer the research questions in this study.

The researcher sought to obtain official documents (Bogdan & Bilken, 2016, p. 60) on the operation and finance of the SBHCs in the sample; specifically, district policies, financial statements, and contractual agreements. Where documents are not readily available the researcher filed Open Public Records Act requests to obtain them. Document collection was chosen as a method to obtain descriptive information and technical data (Merriam & Tisdell, 2016).

In soliciting approval of the school district superintendents to conduct interviews with district staff, the researcher asked to interview the person in the district most knowledgeable about the SBHC since this study seeks factual information rather than perceptions. To obtain interview data the researcher utilized semi-structured interviews to obtain specific data from all of the interviewees guided by a list of questions (Merriam & Tisdell, 2016). The interview

questions were formulated to elicit factual information from the respondent (Patton, 2015). The interview questions were informed by the literature on the implementation of SBHCs in other states (Colorado Association for School-Based Healthcare, 2010a; Nystrom & Prada, 2008; WV School Health Technical Assistance Center at Marshall University, 2014) and assist in answering the research questions (Table 1). During the interviews, the researcher took notes on a pad and stopped to ask clarifying questions when necessary. After the interview was over the researcher typed up the notes taken during the interview and included them in the case record.

Table 1

Connecting the Research Questions with Respective Interview Questions

Research Question	Aligned Interview Questions
What is the method of formation and structure of the school-based health centers in the study?	I. Does the center operate under a formal agreement with the school district?
What types of services do the school-based health centers that are part of the study offer to students?	I. What types of services are provided to students? For example, primary care, mental health, dental? a. What are students typically seen in the center for (i.e., wellness exams, acute care, chronic condition management, mental health counseling)?
What are the personnel needs of the school-based health centers in the study?	I. What is the staffing makeup of the center? a. How many clinical employees work in the center? b. What are their specific positions (e.g., physician, nurse practitioner, registered nurse, mental health counselor, etc.)? c. How many administrative staff work in the center? d. What are their specific positions (e.g., reception, billing). e. Do school personnel other than those assigned to the center perform services related to it?
What are the major sources of revenue and expenditures for the school-based health centers in the study?	I. How is the center funded? a. Does the school fund any costs associated with the center? If so, does the district fund all expenses for the center from the general fund? b. Does the center bill health insurance programs or Medicaid?

	<ul style="list-style-type: none"> c. Do students' families have to pay for any services in the center including co-pays? d. Is any revenue received from grant programs (state, federal, or private)? II. What are the average operating expenses of the center annually? <ul style="list-style-type: none"> a. What is the biggest operating expense? b. Have you had to make any capital purchases related to the program in the past five years, for example; construction, renovations, purchases of medical equipment over \$3,000?
<p>How is the efficacy of school-based health centers assessed for its impact on educational outcomes defined by the literature as (a) school connectedness, (b) student achievement, (c) student attendance, and (d) educational attainment?</p>	<ul style="list-style-type: none"> I. Are there any policies or regulations in place that govern the center? <ul style="list-style-type: none"> a. Does the center have a written policy and procedures manual? b. Did the center have to obtain any special licensing before opening or on a continuing basis? II. Is anyone responsible for monitoring the quality and effectiveness of the center? <ul style="list-style-type: none"> a. How is the performance of the center evaluated? b. How often does staff at the center meet with school administration? c. Does the center have oversight from any external organizations? <ul style="list-style-type: none"> i. If yes, which agency and what are their rules and regulations? ii. Is the center inspected by this agency, and if so, how often?

Data Analysis

According to Merriam and Tisdell (2016), “data analysis is the process of making sense out of the data. And making sense out of the data involves consolidating, reducing, and interpreting what people have said and what the researcher has seen and read- it is the process of making meaning” (p. 202). To answer the research questions posed by this study, interviews were conducted and documents were collected. All of the data collected was compiled and organized by site for analysis.

In analyzing financial data obtained, the researcher used his training and experience as a certified school business administrator and certified public accountant to construct a financial

accounting of operations for each center in the study using information obtained through interviews and document collection. Financial information obtained fell into the category of either revenue or expense. Revenue was defined as any financial input into the center either from the school district's general fund, grants, or insurance reimbursements. In cases where health insurance reimbursements were not accessible the researcher used the per member per month capitation rate for Medicaid reimbursements, or used the estimated number of visits for the year multiplied by the average reimbursement rate for a well child visit identified by the International Statistical Classification of Diseases version number 10 current procedure terminology as code Z00.129 (World Health Organization, 2004). In reviewing expenses, they fell into two categories fixed or variable. Fixed expenses included overhead cost allocations for utilities, maintenance, and administration. Variable expenses included staff salary, benefits, and supplies. Where salaries were not publicly available, such as in the case of privately-operated collaboration centers, the salary and benefit cost of each position was estimated using the Bureau of Labor Statistics May 2017 New Jersey occupational employment and wage mean annual wage for the position.

A coding scheme was created to assist the researcher in organizing the interview notes and documentary evidence into discrete categories (Bogdan & Bilken, 2016). Data collected was coded into five categories identified in the literature as integral factors in SBHC implementation and design—operations, staffing, financial, policy, and monitoring (Colorado Association for School-Based Healthcare, 2010a; Lear, 2007; Nystrom & Prada, 2008; Price, 2016, 2017; Sprigg et al., 2007; WV School Health Technical Assistance Center at Marshall University, 2014)—according to the following coding scheme:

- Operations – hours center is open, types of services offered, how students access services, interaction of SBHC with school staff;
- Staffing – the composition of staff primarily assigned to the center and ancillary school staff that support the center;
- Financial – the major sources of revenue and expenses for the center;
- Policy – policies or regulations that the school, state, or federal government has in place supporting the SBHC; and
- Monitoring – what measures are used to evaluate the effectiveness of the center.

In coding the data collected, the researcher was able to answer the research question of what methods of formation and structure were used to open the SBHC, the types of services the SBHCs offer to students, the typical personnel needs of the SBHC, and the major sources of revenue and expenditures for the SBHC.

Role of the Researcher

In performing research at these sites, the primary method of data collection was the researcher through interviews (Appendix A) with school personnel responsible for the implementation, management, and operations of the SBHC. Written documentation on operational policies and procedures along with financial data was collected where available. The literature review will assist the researcher in answering the research questions with the interviews and data analysis either supporting or refuting what happens in practice. The researcher used these multiple sources of information to report the case description (Creswell, 2013).

Ethical Considerations

To gain access to the three school districts and conduct interviews of staff members, the researcher requested permission from the Superintendent of Schools in accordance with university Institutional Review Board (IRB) protocol. IRB approval was granted prior to commencing interviews. Informed consent was obtained from interviewees before questioning began. The names and position titles of those interviewed are not disclosed in this study.

Validity and Reliability

The researcher enhanced the validity and reliability of the study by collecting data through both interviews and collection of documentary evidence. By collecting data using more than one method and from more than one source the researcher triangulated the data, which Merriam and Tisdell (2016) describe as “a powerful strategy for increasing the credibility or internal validity of your research” (p. 245). To ensure the reliability of the interview questions, the researcher had a jury of school administrators evaluate them for clarity and thoroughness in the context of the research questions. At the conclusion of the interviews, the researcher sent the interviewees his notes from the interview and asked for any additions or corrections.

The researcher acted as a single coder. The goal of coding was to organize data collected into various invariant (Zhao et al., 2018) themes. Further, “the coding instrument is capable of varying but stays invariant with the invariant target” (Zhao et al., 2018, p. 6)—that is, although evidence collected could fall into the codes of operations, staffing, financial, policy, or monitoring the categorization of evidence would be unchanged even if multiple coders were used. Therefore, to increase reliability the researcher reviewed and coded all of the evidence collected, and then after a period of two weeks reviewed and re-coded the evidence again searching for, noting, and reconciling and variation (Mackey & Gass, 2005).

Summary

This chapter described the nature of the case and the methodological processes used to collect and analyze data. A sample of school districts in New Jersey that operate a school-based health center was chosen based on their method of implementation and operations. Data were collected through interviewing and document collection. To assist in answering the research questions, the information collected was coded into categories for the purposes of organization and reporting. In the next chapter, the results of the case are reported.

CHAPTER IV

RESEARCH FINDINGS

Chapter IV presents a descriptive overview of each of the school-based health centers (SBHC) in this case study as it relates to the research question. Purposeful sampling was used to select three SBHCs, based on their differing methods of formation, for inclusion in the study. Interviews and document collection were the primary methods of data collection. Documentation was collected on the operations and finances for each of the sites. In-person interviews were conducted at two of the sites. For the convenience of the staff member at the remaining site, that interview was conducted via phone. Coding was performed to organize the data collected in order to report the case study, which assisted the researcher in identifying any themes that emerged. This chapter presents the findings of the study as well as an analysis of these findings.

Research Question 1 and Related Themes

The first research question asked, “What is the process by which three New Jersey school districts implemented school-based health centers?” In examining this question, sub-questions were used to define the process by which districts implemented the SBHC to determine the method of formation and structure of the center, the types of services that they offer to students, the personnel needs of the center, and the center’s major sources of revenues and expenses.

Coding was performed to analyze the data collected according the following scheme:

- operations—hours center is open, types of services offered, and how students access services, interaction of SBHC with school staff;
- staffing—the composition of staff primarily assigned to the center and ancillary school staff that support the center;

- financial—the major sources of revenue and expenses for the center; and
- policy—the policies or regulations that the school, state, or federal government have in place supporting the SBHC

The coding of interviews and document collection revealed the following about the three centers that were part of the study.

Operations

School A

School A runs a school-operated center within the confines of the district’s high school. The center was opened with a grant from the New Jersey Department of Children and Families to provide “primary medical linkages and mental health counseling” (School-Based Youth Services, 2019, para. 3). The SBHC is open from 7:20 am to 2:40 pm ten months per year, from September to June, congruent with the school’s times and calendar. The center defines its core services as mental health and family services, healthy youth development, substance abuse counseling and prevention, medical and nurse practitioner services, family workshops, and referrals to community-based service providers. The services of the SBHC are limited to enrolled high school students. Students must have parental consent on file to be seen in the center.

The SBHC is operated under the direction of the head nurse of the school district and all center staff report to her. As component units of the district school, faculty and administration have a close working relationship with the center. The major source of referrals to the SBHC is guidance counselors, the child study team for mental health screening and services, and the school nurse at the high school. Students do not need a referral and they can walk into the center to be seen. The staff member at School A related that “guidance and the school nurses are

always referring over students. If we had the resources, we would make this program district wide. We are so busy as it is now, I could use another half a counselor.”

Major grant funding for the center comes from the New Jersey Department of Children and Families (NJDCF), which regularly inspects the center. Center staff must provide reports to the NJDCF’s electronic tracking service. On an annual basis, the SBHC must recertify its facility, financial management, and operational protocols with the NJDCF to continue to receive grant funding.

Mental health services make up the majority of patient encounters in the center. The mental health providers in the center schedule regular, periodic counseling sessions with students, handle crises and risk assessment on an ad-hoc basis, and conduct group therapy sessions. If a student is dealing with substance abuse issues, there is a specific counselor assigned to assist the student in addressing that problem. The most common reason for a medical visit is for a physical exam to participate in sports or for working papers. In the last school year alone, six hundred sports physicals were performed. The SBHC will also see students for sick visits along with counseling and the management of chronic conditions like diabetes and asthma. The parent need not be present while any of these services are being performed if appropriate consent is granted. While there are more students served by the center for healthcare versus mental health, the patient encounter time for medical visits averages fifteen minutes while mental health visits can last anywhere from forty-five minutes to an hour.

School B

School B is a collaboration center run in an elementary school of the district in collaboration with a local academic hospital with which the school has a memorandum of understanding. The collaborating hospital is considered a non-profit for the purposes of state and

federal taxation. According to the Patient Protection and Affordable Care Act, non-profit hospitals must perform a community health needs assessment. As part of the assessment, the hospital must identify health needs in the community and implement a strategy to address those needs. Within the community, health needs assessment of School B's collaborating hospital resulted in the implementation of programs surrounding the hospital's involvement with the SBHC.

The SBHC is open twelve months per year from 8:30 am to 4:00 pm. During peak demand periods, the hours may be extended. The center defines its core services as well visits, new entrant physicals, sick visits, sports physicals, working papers, and an asthma control program. The staff member interviewed at School B stressed that the center is not meant to be a student's primary care provider (PCP), but rather is meant to enhance the services of students' PCP and to provide them care when their PCP may not be available. The physical layout of the SBHC is a reception/waiting area, one exam room, and two office spaces. Custodians assigned to the school clean the center after hours. As a satellite clinic of the local hospital, it falls under their licensing and does not require a separate certification.

Even though the center is located in an elementary school of the district, any student in grades PK-12 can access it. Parents/guardians must fill out initial intake forms to have a child become a patient of the center and, in general, they must be with the child while they are being seen as a patient in the center. The initial intake form consists of a medical history, household information, developmental history, and acknowledgement of receiving the HIPAA policy.

The major source of patient referrals to the center is through the local school nurses. The most common visits to the center are for sick visits, sports physicals, physicals needed for enrollment into school, and physicals for working papers. While appointments are taken, walk-

ins can largely be accommodated for sick visits. The center does not provide immunizations, but it provides referrals to outside providers for students who need them. Through the collaborating hospital, the school health center runs a comprehensive asthma management program, which brings a pediatric pulmonologist once a month to the center to help students manage asthma.

School C

There is a federally qualified healthcare center (FQHC) located on the site of School C. The FQHC is operated by a medical school in the community and is one of three service locations that the FQHC operates. This is the only location housed at a school in the district. The center functions under the hierarchy of the FQHC and provides medical and dental services to students during the school day. Parents/guardians must fill out a consent form for their children to be treated at the FQHC. Medical information obtained by the SBHC may not be shared with the school district unless express permission is granted by the parent/guardian. The FQHC manages and maintains all the paperwork in this process.

School C was constructed by the New Jersey School Development Authority with the intention of hosting community services in addition to the school. The SBHC was part of the design of the school building and has an entrance from the courtyard of the school for students and from the exterior of the building for the public. Security guards are posted to monitor students coming and going and to ensure the public does not access the school building. The center has a reception/waiting area, two medical exam rooms, two dental care rooms, and an office space for counseling. The district provides utilities for the building and custodians to clean the facility. The facility is 2,100 square feet and the overall size of the school is 298,000 square feet; the SBHC represents approximately 0.7% of the school facilities space in use.

Despite being co-located in a district facility, the FQHC is an independent entity with its own fee and reimbursement structure; however, the school district has an agreement with the school to provide school physicals, enrollment physicals, home schooling clearance, work paper physicals, new employee physicals, Hepatitis B Vaccinations, flu shots, and medical reviews.

All FQHCs must report their operating statistics each year to HRSA. The most recent year for which data is available is 2017, during which there were 1,558 school-based patients served, or approximately 80.23% of the school's total enrollment. Two thirds of the visits to the center were for medical care and the other one third was for dental care.

Staffing

School A

The SBHC in School A is staffed by a licensed clinical social worker, social worker, full time nurse practitioner, part time nurse practitioner, and two secretaries. The head nurse of the school district provides oversight and direction to the center. All the center's staff members are school district employees except for the part time nurse practitioner, who is employed by a local hospital and provides twelve hours of services per week to the SBHC based on a contract that the district has with the hospital. As for public-school district employees, the employment of staff in the SBHC is subject to a collective bargaining contract and their terms and conditions of employment are statutory as school employees (NJSA 18A). The district contracts with a local pediatrician who acts as medical director for the medical practice. The district also contracts with a psychologist who acts as a clinical supervisor for the mental health program.

The staff member interviewed at School A noted that, due to the length of time needed for a counseling session versus a patient exam, more resources were necessary to provide mental

health services to the same number of students. A typical patient encounter for counseling takes forty-five minutes to an hour, whereas a medical exam takes approximately fifteen minutes.

School B

The SBHC in School B is staffed by one nurse practitioner, who is an employee of the collaborating hospital. Oversight and management of the SBHC come from the district's head nurse, who is also assigned duties other than overseeing the center; however, that individual's office is located in the center, which helps them to closely work with the nurse practitioner. The collaborating hospital provides a physician who provides clinical oversight. No ancillary personnel are assigned to the SBHC other than district custodians who clean the center.

School C

Staffing for the SBHC at School C is provided by the FQHC who assigns physicians rotating through the medical school's residency program along with nurse practitioners, registered nurses, medical assistants, a dentist, a dental assistant, and a social worker. All of the staff in the center are employees of the FQHC. The district assigns security staff to the center and district facilities staff maintain the physical upkeep of the center.

Financial

School A

In school A, the major source of revenue is a grant from the New Jersey Department of Children & Families in the amount of \$341,000. The SBHC does not charge students for their utilization of the center, and health insurance status is not taken into consideration. The remaining revenue comes from the school district's general operating fund.

School B

The SBHC at School B is a joint venture between the school district and a local hospital. The major expenditure is the salary and benefit cost of a nurse practitioner from the hospital, who is assigned to the school. This cost is shared equally by the school district and the hospital. Supplies for the center are purchased by the school district through the budget and requisition process with the district's operating funds. The school district provided the initial capital outlay to purchase the exam room equipment and furniture at an approximate cost of \$5,000. The SBHC does not charge students for their utilization of the center and student health insurance status is not taken into consideration.

School C

During 2017, the SBHC at School C reported a per-patient cost of \$784, for a total operating cost of the center of \$1,221,472. This revenue goes directly to the SBHC and does not pass through the school district's operating accounts. The physical space in which the center resides was constructed as part of a larger school construction project that was entirely funded with a grant from the New Jersey School Development Authority based on the district's status as a former-abbott district.

The district pays the FQHC \$30,000 per year as part of a service agreement and \$123 per hour, billed monthly for physical exams performed. The FQHC provides its own staff and supplies. The district provides in-kind support of the physical space, utilities, custodial services, and security. The FQHC collects a student's health insurance information and bills accordingly. The FQHC may charge a student a fee; however, a student whose family can document an income at or below 200% of the federal poverty level is eligible for a discount on services, and those households at or below 100% of the federal poverty level, by law, cannot be charged at all.

Estimated School District Contribution to the SBHC

All the school’s that were part of the study contributed money and resources to the operation of the SBHC. Table 2 shows the estimated contribution that the school district is making from its’ general operating fund budget to the SBHC on an annual basis (Bureau of Labor Statistics, 2017; Howe, 2019; NJ Public Employee Salaries, 2018).

Table 2

Estimated School District Contribution to the SBHC

Estimated School District Operating Costs (Excludes Costs Borne By Outside Entities)			
	School A School Operated	School B Collaboration Center	School C FQHC
Salaries	\$ 433,838	\$ 16,204	\$ 43,750
Fringe Benefits	121,475	4,537	12,250
Purchased	68,000	80,237	45,000
Professional Services	8,500	7,500	3,000
Supplies	(341,000)	-	-
Grant Funding			
Estimated School District Contribution	\$ 290,813	\$ 108,478	\$ 104,000

Source: Bureau of Labor Statistics (2017); Howe (2019); NJ Public Employee Salaries (2018)

Policy

School A

The New Jersey Department of Children and Families provides School A with a majority of its operating funds through a school-linked grant program. Very broadly, in the Fiscal Year 2019 New Jersey budget, \$15,291,000 was appropriated for the Department of Children and Families to administer school-linked programs, of which school-based youth services programs is one of the components (NJ P.L.2018, Chap. 53). Numerous programs fall under school-linked

programs and there is no discrete reporting of the amount of grants administered to school districts for operating school-based youth services programs. Schools can receive funding from the School-Based Youth Services program for any number of initiatives, including mental health counseling, employment counseling, substance abuse education/prevention, preventive health awareness, including pregnancy prevention, primary medical linkages, learning support, healthy youth development, recreation, and information/referral (State of New Jersey, Department of Children and Families, 2019).

School B

As discussed previously, the hospital collaborating with School B is a non-profit and must perform a community health needs assessment (CNHA) to maintain its non-profit status. The CNHA must take into account input from “persons who represent the broad interests of the community served by the hospital facility, including those with special knowledge of or expertise in public health” (Patient Protection Affordable Care Act, 2010). School districts qualify as representing the broad interests of the community because attending public school is compulsory in New Jersey and a large portion of the pediatric population attends school. Partnering with school districts helps hospitals to maintain their non-profit status, while students benefit from the services being provided.

School C

In order to establish an SBHC using the FQHC structure, the community must have an existing federally qualified health center for which the SBHC can become an additional site, or the community must be eligible for a provider to receive a grant from the Health Resources & Services Administration (HRSA) to open an FQHC. FQHC funding and designation are only available to those communities designated by HRSA as “Medically Underserved

Areas/Populations are areas or populations having too few primary care providers, high infant mortality, high poverty or a high elderly population” (Health Resources and Services Administration [HRSA], 2018). A public agency or a non-profit organization can apply to HRSA for competitive grants to fund FQHCs. A maximum of \$650,000 will be awarded to successful grant applicants, and ongoing operations are funded through Medicaid and health insurance reimbursement (Health Resources and Services Administration [HRSA], 2018).

Themes for Research Question 1

Collaboration with Local Medical Community

All of the SBHCs that were part of the study had strong ties to the local medical community. School A partnered with a local hospital for part-time nurse practitioner services and local practitioners for medical oversight and direction. School B collaborated with a local hospital to create and operate the center. School C engaged the services of a local medical school to create a health center on its property. Staff interviewed at all three sites noted the connection with the local medical community as integral to the start-up and success of the center. When asked what advice they would give to a school administrator looking to start a school-based health center in the school, the staff member at School B responded, “They should start by contacting their local hospital. Collaborate and partner with practitioners in your area. They are very valuable. We could not have done it without them.” School A gave a different perspective on fitting into the local healthcare landscape responding, “assess the agencies in your area and fill in the void.” Collaboration with the local medical community has previously been identified as a key to establishing and sustaining an SBHC (Kanaan, 2007; Price, 2016, 2017).

Use of Mid-Level Practitioners

All the centers that were part of the study utilized nurse practitioners (NPs) as primary care providers. This is consistent with the literature, which showed that the most common clinical staffing in SBHCs is mid-level practitioners who work under the oversight of a physician (Gustafson, 2005; Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016). The nurse practitioner's relative autonomy in primary care and cost as compared to a physician has increased their popularity throughout the landscape of the medical community and in particular at SBHCs (Gustafson, 2005; Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016).

The New Jersey Board of Nursing regulates the practice of nurse practitioners. Within their scope of practice is the authority to “manage preventive care services, and diagnose and manage deviations from wellness and long-term illnesses, consistent with the needs of the patient” (NJAC 45:11-49). This includes the ability to prescribe medication, which the NPs did at all the centers. In order to prescribe medication, the NP must have a collaborating physician who provides protocols and clinical oversight. It is important to note that the physician does not need to be on the premises while the NPs are performing the duties within their scope of practice.

Personnel Cost as Major Expenditure

All the centers noted personnel costs as their major expenditure, even if those costs were borne by an outside entity, as in the case of schools B and C. This finding is consistent with Nystrom and Prada (2008), who found that the largest factors contributing to operating costs was the size and composition of staff and with the number of hours that they worked. Schools, by and large, are labor intensive organizations, and an SBHC, being an outgrowth of the school, is a similar service delivery organization.

School Nurse as Referral Source

In all the schools studied, the school nurse served as a primary referral source for the center. In as much as collaboration with the local medical community was reported as integral to the success of the SBHC, a close working relationship between the school nurses in the school or schools that the SBHC serves and the center was noted by those interviewed as essential to its success. This finding is consistent with Horton and Lima-Negron (2009), who identified school health personnel as critical liaisons to the SBHC.

The SBHC is Not a Replacement for the School Nurse's Office

Each of the sites that were part of the study had a school nurses office that was independent of the SBHC. Although, as noted in the previous theme, the school nurse was a critical referral source to the center, the SBHC did not take the place of the school nurse.

Although health center staff may assist the school nurse in the event of a medical emergency in the building, the statutory duties of the position remain with the school nurse (NJAC 6A:16-2.3b).

Emphasis on Referrals/Connections to Outside Providers

All of the schools described strong connections to referral sources for students to access a range of medical, dental, mental health, and social service resources. In fact, in School A, one of the measures of efficacy used for the center was the number of referrals made to other agencies. Referrals have been an integral part of the design of SBHCs since they were originally formed. As part of the grant funding received from the Robert Wood Johnson Foundation to establish the original modern SBHCs, centers were required to provide referrals and follow-ups for serious illnesses and emergencies, referrals for drug and alcohol abuse, sexual abuse, anxiety, depression

and thoughts about suicide, and referrals for sexually-transmitted diseases (Isaacs & Knickman, 1999).

Research Question 2

The second research question asks, “How is the efficacy of school-based health centers assessed for its impact on educational outcomes defined by the literature as (a) school connectedness, (b) student achievement, (c) student attendance, and (d) educational attainment? To answer this question, the researcher examined the monitoring evidence collected and coded from the three schools that were part of the study to determine how they evaluate the efficacy of their SBHCs. Monitoring was defined as using measures to evaluate the effectiveness of the centers.

School Connectedness

To evaluate the efficacy of the counseling services provided by the center at School A, a pre and post self-efficacy behavior tool was administered to students to evaluate their feelings of unhappiness, sadness, depression and suicidal thoughts, sleep habits, worrying, destructive behavior, and feelings of anger. Post assessment results subsequent to being a counseling patient at the center showed students to have diminished feelings of unhappiness, sadness, depression and suicidal thoughts, improved sleep habits and less worrying, and less destructive behavior and feelings of anger.

School A also administers the Adolescent Preventive Services survey, also known as GAPS, to all students in the school on tobacco and alcohol use, interaction with families and friends, and contraceptive use, and it found that those students who used the center showed decreased use of alcohol and tobacco and were more likely to use contraceptives than non-SBHC users who were sexually active. This finding and method of evaluation are similar to

Geierstanger et al. (2004) and Bonny et al. (2000), who studied self-reported survey data showing that students who use SBHCs are more connected to the school community and, therefore, have a propensity to engage in less risky behavior.

Schools B and C viewed their centers' function as providing a necessary supplementary service to their students, akin to providing school lunch. Those schools monitor utilization as a measure of effectiveness by tracking the number of students who visit the center to determine its success. To promote the center and develop connections to the school community, school B started a reading program awarding students a book of their choosing from a collection to those who come into the center for a well visit. The staff member interviewed at School B put it best:

Our business is about word of mouth. We aren't in this to make money. If we are doing a good job, more families will bring their kids in. When parents learn about this (the SBHC), they are amazed that the school would provide this service to their kids. Just by being here, our students and families know we care about them.

These views are similar to Barnett and Allison's (2012) findings that regardless of the motivation to impact educational outcomes, a school may start an SBHC to serve a public health benefit.

Student Achievement

In School A, student achievement is measured by tracking the accumulation of credits toward graduation, and post-high school plans for students are recorded by the guidance counselor. Bersamin et al. (2016) found that the presence of an SBHC in a school was significantly ($p < .01$) correlated to student's participation in college entrance examinations and advanced placement courses.

Schools B & C do not monitor student achievement based on SBHC presence or use. However, when asked how they monitor educational outcomes, School B did bring up a unique

program developed with the school for the management of students suspected of having a concussion. The New Jersey Legislature has enacted comprehensive guidelines on managing and treating student athletes who sustain a suspected head injury (NJSA 18A:40-41.1). The school partnered with the center to provide concussion evaluations, monitoring, and treatment. If a student is suspected of having a concussion, the NP in the center works with the teaching staff to ensure the student is provided a reduced academic load so that the brain can heal. The NP then brings the student back to the center for frequent evaluations, having them do math problems under her observation until they are discharged from care.

Student Attendance

All the schools track the attendance of those students who used their centers versus those who do not and all have found that, on average students, who use the center had a better rate of attendance. These data analyses were not controlled for factors other than attendance rates compared to a dichotomous variable of use of the center versus non-use. As school C noted,

Instead of just being sent home when they are sick a student can go straight from the nurse's office to the health center to get treated before they are picked up. They get back to school quicker and help us keep things from spreading.

Schools B & C provide enrollment physicals through the health center, decreasing the time that the student spends waiting to start attending school. At School B, the health center is located in the same place as central registration, and if a child enrolling in school does not have the requisite physical, they can often get the necessary exam the same day. Foy and Hahn (2009) found that SBHCs have a significant effect on the number of students excluded from school for the lack of a requisite physical.

Educational Attainment

In School A, educational attainment is measured by the number of twelfth graders who graduate and the number of students retained at grade level. A previous study by Kerns et al. (2011) showed that in-school clinic users were significantly ($p < .05$) less likely to drop out of school than non-users. School B and C did not monitor data related to educational attainment. School A served one specific high school and it was easier for them to track and measure this data linearly. Since school B and C have a health center open to the entire district, they noted a challenge in tracking and measuring educational attainment associated with the SBHC.

Conclusion

This case study examined the implementation of school-based health centers in three New Jersey public schools with respect to their operations and finances and the methods with which school administrators determine the efficacy of such programs. As purposeful sampling was used to determine site selection, the method of formation of the center was known before the fieldwork began. During the interviews and document review, the researcher sought to uncover what is necessary to implement and operate these centers, including how they are staffed, what major revenues and expenses they have, what policies or procedures exist supporting SBHCs, and, finally, how they are monitored.

The SBHCs varied in the services they offered to students, with the school-operated center offering mental health and medical care, the collaboration center offering primarily medical care, and the federally qualified health center (FQHC) offering medical and dental care. The use of mid-level clinical practitioners was a commonality amongst all the centers. Ancillary staff were dependent on the nature of additional services offered.

Only one of the three centers in the study, the FQHC, bills a student's health insurance or charges a student a fee to use the center. However, those families who are economically disadvantaged as defined by the federal poverty guidelines may be charged a reduced or no fee. The school-operated center received a grant from NJ to partially fund its operations. The collaboration center was half supported by a local hospital and the other half by the district. Personnel costs were the largest expense noted in operating a center.

Each of the centers varied in how they determine the impact of the SBHC on the school community based on school connectedness, student achievement, student attendance, and educational attainment. Although they did not all quantify the fact, it was clear throughout all the centers that their primary goal was to support students in their school career. Demonstrative of the construct of school connectedness is the study participant's standpoint that a student's engagement with the center and the school as a whole is, in and of itself, a measure of efficacy (Stone et al., 2013; Strolin-Goltzman, 2014).

The next chapter will discuss the implications of the study for practitioners, provide recommendations for policy, and suggest topics for further research.

CHAPTER V

SUMMARY AND CONCLUSIONS

This descriptive, qualitative study sought to examine the implementation of school-based health centers (SBHC) in three New Jersey public schools with regard to their operation and finances and to determine the methods with which school administrators determine the efficacy of such programs. Data collected for the study included interviews with school officials who were most familiar with the implementation of the health center in their district and the collection of documentary evidence. In reporting the case study, the researcher organized and coded the evidence collected to provide an in-depth description and analysis of the three school-based health centers that were part of the study.

Research Questions

The purpose of this study was to examine the implementation of school-based health centers in New Jersey public schools and to determine the methods with which school administrators can determine the efficacy of such programs. The case study analysis allowed the researcher to analyze the following questions:

1. What is the process by which three New Jersey school districts implemented school-based health centers?

- a. What is the method of formation and structure of the school-based health centers in three New Jersey school districts?
 - b. What types of services do the school-based health centers in three New Jersey school districts offer to students?
 - c. What are the personnel needs of the school-based health centers in three New Jersey school districts?
 - d. What are the major sources of revenue and expenditures for the school-based health centers in three New Jersey school districts?
2. How is the efficacy of school-based health centers assessed for its impact on educational outcomes defined by the literature as (a) school connectedness, (b) student achievement, (c) student attendance, and (d) educational attainment?

Significance of the Study

The emergence of a continuing body of literature linking healthcare to learning and student engagement, along with limited access of healthcare to students in poverty, necessitates school officials, particularly those serving a high at-risk student population, to consider opening an SBHC in their school. With so many of the nation's children turning to Medicaid or lacking health insurance, SBHCs are uniquely positioned to fill gaps in healthcare faced by our youth (Wade et al., 2008).

Much of the existing research on SBHCs focuses on the impact, effectiveness, and sustainability of the program. As Lear (2007) wrote, "no trusted body of evidence offers a guide to the school health world – its providers, services, financing, and outcomes". Currently, there is no repository of information for school officials in New Jersey wishing to implement an SBHC in their districts. There is a dearth of literature on the staffing needs (Gustafson, 2005; Keeton,

Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016), fiscal considerations (Horton & Lima-Negron, 2009; Nystrom & Prada, 2008), and methods of school-based health center implementation (Keeton, Soleimanpour, & Brindis, 2012; Lear, 2007; Price, 2016; Sprigg et al., 2007).

In pursuing this study, the researcher hoped to bring awareness of SBHCs and suggest how educational administrators, health care professionals, and local policy makers can gain key insight into, and have a repository of information on, the current methods of operating and financing a school-based health center in New Jersey.

Recommendations for Practice

When starting any new program in a school, dialogue, input, and support from various stakeholder groups are key. The same holds true when trying to implement a school-based health center (Keeton, Soleimanpour, & Brindis, 2012; Price, 2017). School administrators thinking about starting an SBHC should first talk to students, parents/guardians, and staff to determine the need for the center and the willingness of students and their parent/guardian to utilize an SBHC if it existed. Next, this study, like others (Kanaan, 2007; Price, 2016, 2017), found that school administrator's collaboration with the local medical community is integral to the success of an SBHC. To build collaboration and support, the administrator should contact their local hospital, pediatricians, and health department to determine what support they can provide and find any gaps in the healthcare services offered to students in the community.

The current methods available to school districts for operating an SBHC include opening their own center, collaborating with the medical community to open a center, or hosting an FQHC or satellite. Funding sources will vary dependent on the method of implementation and grant availability. It is important that administrators identify sustainable funding sources so as

not to create an SBHC and then see this healthcare resource taken away from students shortly thereafter due to lack of appropriations. To support the place of the health center in the school, the local board of education or governing body should pass policies and procedures consistent with state law for the operation of the SBHC. To this end, the school board attorney should review the structure of the SBHC and any agreements or contracts that the school has entered into with outside providers.

Having decided on the types of services to be offered by the SBHC and who the clinical partners will be, the next area to be addressed is staffing. Nurse practitioners are now ubiquitous in the landscape of primary healthcare (Poghosyan, 2018), and it only makes sense that districts should consider using these skilled and relatively autonomous providers in their centers. In bringing on staff, the district or provider can use a ramp up period to determine how many students, on average, will be seen in the center. As the center becomes established, it will likely become more popular and utilization will increase, necessitating more staff to continue offering the same level of service.

Finally, school administrators and the community should be aware that the SBHC should not replace the office of the school nurse. In New Jersey, school nurses are required to have certification from both the Department of Education and the Department of Health (NJAC 6A:16-2.3b). The statutory duties of the school nurse should be performed outside the auspices of the SBHC. However, as this study and others have shown (Horton & Lima-Negron, 2009), school nurses are a strong referral source to the SBHC for students in need of acute or chronic care.

Once the SBHC is open, there are several means and methods for monitoring its performance and effect on the school community. While SBHCs have been shown to positively

influence student achievement (Bersamin et al., 2016), educational attainment (Kerns et. al., 2011), and student attendance (Foy & Hahn, 2009), their overarching goal in the school should be to provide students with the feeling that their school cares about their health and wellbeing. Arguably even more important than fostering academic success, SBHCs provide a public health benefit (Barnett & Allison, 2012), which should be the community's primary focus in operating a school-based health center.

Recommendations for Policy

Research tells us that students from lower socioeconomic backgrounds are more likely to be adversely affected by a lack of healthcare than their wealthier peers (Basch, 2011a, 2011c, 2011d, 2011e, 2011f, 2011g, 2011h, 2011i; Berdahl et al., 2013; Chen, Martin, & Matthews, 2007). Students from low SES backgrounds may be eligible for Medicaid; however, NJ ranks lowest in the nation for the percentage of physicians who accept new Medicaid patients (Hing, Decker, & Jamoon, 2015). Furthermore, even if a student is low SES, they may not qualify for Medicaid based on a number of other eligibility criteria they have to meet. Two of the centers that were part of this study were successfully implemented and operated without any support from Medicaid, and their services are offered at no cost to students. SBHCs have previously been proven to fill healthcare gaps for students and support student success (Geierstanger et al., 2004; Keeton, Soleimanpour, & Brindis, 2012; Strolin-Goltzman, 2010, 2014). Approximately 40% of the State's 2,514 schools having an enrollment of over 40% of students who are eligible for and receiving free or reduced lunch (New Jersey Department of Education, 2016), yet there are only 35 reported SBHCs in NJ (School-Based Health Alliance, 2015).

Therefore, the following recommendations for policy are provided to promote school administrators establishing more school-based health centers in their schools and legislative action to provide school districts with support in starting a center:

- The New Jersey Department of Education, collaborating with the New Jersey Department of Health, should increase the public school community's awareness of school-based health center programs. This can be in the form of informational broadcasts or information sessions. The Department of Education can also promote the use of shared services where two or more school districts would join resources to fund the cost of a shared clinical practitioner.
- Existing New Jersey school-based health centers should form a professional association. Numerous other states—such as Connecticut, Delaware, and New York—have formed school-based health associations for the purposes of information collection and distribution, collaboration, professional development, and advocacy. Twenty-one states currently have a school-based health association.
- The New Jersey Legislature should allocate funding to school districts for the purpose of starting and operating an SBHC to protect its investment in K-12 education. With an approximately \$8.5 billion investment in direct K-12 aid to public schools, funding the voluntary startup of SBHCs in schools where over 40% of students receive free or reduced lunch would represent a small percentage of the overall budget while incentivizing school districts.
- Nursing schools throughout New Jersey offer programs for registered nurses to become certified as a nurse practitioners in a variety of specialties, including family nurse practitioners and pediatric nurse practitioners, which are most applicable to

clinical practice in an SBHC. With the rise of SBHCs, nursing schools should focus some of their curricula on the role that nurse practitioners can serve in schools.

Topics for Further Research

Some topics for further research include the following:

- New York runs an ostensibly successful SBHC program and has over two hundred thirty school-based health centers currently in operation, compared to New Jersey's thirty-five. A comparative case study could be conducted of New York's School-Based Health Centers with New Jersey's. Lessons learned from that comparison could be applied to increase the number of SBHCs in New Jersey.
- This study sought factual information. A follow up study could be done to obtain the perception of various groups within the school community—including students, families, administrators, and faculty—on the presence and use of SBHCs.
- This study did not gather any empirical evidence about the efficacy of SBHCs in New Jersey. A follow up study could be done to obtain quantitative measures of SBHC presence and use as it relates to school connectedness, student achievement, educational attainment, and student attendance.
- While many SBHCs are successful, a number have had to close. A qualitative case study could be performed to determine why those centers were not successful. With those findings, the practitioner community could gain insight into the factors that led some SBHCs to close.

Final Conclusions

In 1946, the federal government recognized that students from a low SES background needed proper health and wellbeing to be successful in school, and the National School Lunch Act was signed by President Truman to “safeguard the health and well-being of the Nation’s

children” (Congressional Declaration of Policy, 1946). Seven decades later, that program is alive and well, serving tens of millions of students who would not otherwise have anything to eat during school. The health and wellbeing of our nation’s children are equally at risk if they do not have access to proper healthcare resources. With a growing body of evidence linking students’ health to their ability to learn, there is an imperative need for school administrators to set up programs like school-based health centers to provide our students the support they need.

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APPENDIX A

INTERVIEW PROTOCOL

Introduction: Hello my name is Joe Howe I am a student in a graduate program at Seton Hall University doing research on school-based health centers. Today I would like to ask you questions about the center in your school to gain an understanding of how it operates. Please let me know if you are comfortable. If you are, I would like to begin the interview, we can stop the interview at any time you wish. Do you have any questions before we start?

For school operated centers:

1. Where does the center sit within the organization of the school district?
 - a. Who do center staff report to?
2. How many students are served by the center?
 - a. Is that all of the students in the school?
 - b. Do students have to sign up to become members of the SBHC?
3. How is parent/guardian consent obtained before services are provided to students?
4. What are the hours of the center?
 - a. Do students need an appointment? Can they just walk in?
5. What types of services are provided to students? For example primary care, mental health, dental?
 - a. What are students typically seen in the center for (i.e. wellness exams, acute care, chronic condition management, mental health counseling)?
6. What is the staffing makeup of the center?
 - a. How many clinical employees work in the center?
 - b. What are their specific positions (e.g. physician, nurse practitioner, registered nurse, mental health counselor, etc)?

- c. How many administrative staff work in the center?
 - d. What are their specific positions (e.g. reception, billing)?
 - e. Do school personnel other than those assigned to the center perform services related to it?
7. How is the center funded?
 - a. Is the center part of the district budgeting process?
 - b. Does the school fund any costs associated with the center? If so does the district fund all expenses for the center from the general fund?
 - c. Does the center bill health insurance programs or Medicaid?
 - d. Do students families have to pay for any services in the center including co-pays?
 - e. Is any revenue received from grant programs (state, federal, or private)?
 8. What are the average operating expenses of the center annually?
 - a. What is the biggest operating expense?
 - b. Is purchasing done using the district's purchasing process?
 - i. If not describe the purchasing process used?
 - ii. Does the center run into issues having to adhere to public purchasing rules such as delays in getting supplies or lack of appropriate vendors?
 - c. Have you had to make any capital purchases related to the program in the past five years, for example; construction, renovations, purchases of medical equipment over \$3,000?
 9. Are there any policies or regulations in place that govern the center?
 - a. Does the center have a written policy and procedures manual?
 - b. Did the center have to obtain any special licensing prior to opening or on a continuing basis?
 10. Is anyone responsible for monitoring the quality and effectiveness of the center?
 - a. How is the performance of the center evaluated?
 - b. How often does staff at the center meet with school administration?
 - c. Does the center have oversight from any external organizations?
 - i. If yes which agency and what are their rules and regulations?
 - ii. Is the center inspected by this agency, and if so how often?
 11. Is there anything you would do to improve upon the setup of the center?
 12. What advice would you give to a school administrator looking to start a school-based health center in their school?

For collaboration centers:

1. Does the center operate under a formal agreement with the school district?
 - a. How many students are served by the center?
 - b. Do students have to sign up to become members of the SBHC?
 - c. How is parent/guardian consent obtained before services are provided to students?
 - d. How are students referred to the center?
 - e. What are students typically seen in the center for (i.e. wellness exams, acute care, chronic condition management, mental health counseling)?
 - f. How would you describe the relationship of the center with school health staff?

2. What are the hours of the center?
 - a. Do students need an appointment? Can they just walk in?
3. What types of services are provided to students? For example, primary care, mental health, dental?
4. What is the staffing makeup of the center?
 - a. How many clinical employees work in the center?
 - b. What are their specific positions (e.g. physician, nurse practitioner, registered nurse, mental health counselor, etc)?
 - c. How many administrative staff work in the center?
 - d. What are their specific positions (e.g. reception, billing)
 - e. Do any school personnel perform services related to the center?
5. How is the center funded?
 - a. Does the school contribute to any costs associated with the center?
 - b. Does the center bill health insurance programs or Medicaid?
 - c. Do students families have to pay for any services in the center including co-pays?
 - d. Is any revenue received from grant programs?
6. What are the average operating expenses of the center annually?
 - a. What is the biggest operating expense?
 - b. How does the center receive its supplies?
 - c. Is the center cleaned and maintained by the district?
 - i. If not, who maintains the cleanliness of the center?
 - d. Have you had to make any capital purchases related to the program in the past five years, for example; construction, renovations, purchases of medical equipment over \$3,000?
7. Are there any policies or regulations in place that govern the center?
 - a. Does the center have a written policy and procedures manual?
 - b. Does the center have oversight or licensing from any external agency?
 - i. If yes which agency and what are their rules and regulations?
 - ii. Is the center inspected by this agency and if so how often?
8. Is anyone responsible for monitoring the quality and effectiveness of the center?
 - a. How is the performance of the center evaluated?
 - b. How often does staff at the center meet with school administration?
9. Is there anything you would do to improve upon the setup of the center?
10. What advice would you give to a school administrator looking to start a school-based health center in their school?

APPENDIX B

IRB APPROVAL

REQUEST FOR APPROVAL OF RESEARCH, DEMONSTRATION OR RELATED ACTIVITIES INVOLVING HUMAN SUBJECTS

All material must be typed.

PROJECT TITLE: The Implementation and Operation of Three School-Based Health Centers in New Jersey

H2019.1.3

CERTIFICATION STATEMENT:

In making this application, I(we) certify that I(we) have read and understand the University's policies and procedures governing research, development, and related activities involving human subjects. I (we) shall comply with the letter and spirit of those policies. I(we) further acknowledge my(our) obligation to (1) obtain written approval of significant deviations from the originally-approved protocol BEFORE making those deviations, and (2) report immediately all adverse effects of the study on the subjects to the Director of the Institutional Review Board, Seton Hall University, South Orange, NJ 07079.

[Signature]
RESEARCHER(S)
Joseph Howe

12/10/18
DATE

Please print or type out names of all researchers below signature. Use separate sheet of paper, if necessary.

My signature indicates that I have reviewed the attached materials of my student advisee and consider them to meet IRB standards.

[Signature]
RESEARCHER'S FACULTY ADVISOR [for student-researchers only]
Luke Stedrak

12/14/18
DATE

Please print or type out name below signature

The request for approval submitted by the above researcher(s) was considered by the IRB for Research Involving Human Subjects Research at the Jan 2019 meeting.

The application was approved [checked] not approved [] by the Committee. Special conditions were [] were not [checked] set by the IRB. (Any special conditions are described on the reverse side.)

[Signature] Ph.D.
DIRECTOR,
SETON HALL UNIVERSITY INSTITUTIONAL
REVIEW BOARD FOR HUMAN SUBJECTS RESEARCH

1/30/19
DATE