Increasing the Number of Adolescents with Annual Preventative Healthcare: A Policy Analysis

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Executive Summary

Despite evidence that preventative healthcare throughout adolescence profoundly impacts health across the lifespan, the number of adolescents receiving preventative health services is decreasing. During annual visits adolescents receive age-appropriate screenings and health education that contributes to improved health literacy and decreases rates of chronic disease in adulthood. Access and equity have been identified as the primary barriers to receiving preventative healthcare and are more prevalent in minority and disadvantaged communities. The community services task force (CSTF) has proposed the utilization of school-based health centers (SBHCs) to address the above barriers to adolescent health.

This paper is a policy analysis that utilizes Bardach & Patashnik's (2020) eightfold path to consider viable policy alternatives to increase the number of adolescents receiving preventative healthcare services through SBHCs in the state of Michigan. Michigan has endorsed SBHCs for decades; but, despite consistent support and proven sustainability, many adolescents in the state of Michigan do not have access to quality preventative healthcare. A thorough review of the literature paired with an extensive environmental scan provided the foundation for thoughtful engagement with relevant stakeholders. Stakeholder feedback was organized into themes and viable policy recommendations were constructed. Based on the information that was gathered it is the recommendation of the authors that a multi-pronged approach including includes maximizing current state and federal funding, increasing the number of partnerships with FQHCs to meet the national average of fifty percent, and modifying existing eligibility criteria to improve diversity within the current applicant pool.

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Routine healthcare during adolescence is important for decreasing a multitude of chronic diseases. Although individuals within this population are often perceived as "healthy", the behaviors established throughout adolescence impact health across the lifespan (Colizzi et al., 2020; Harris et al., 2017). Poor health habits, missed screenings, and limited health literacy are associated with increased rates of hypertension, hyperlipidemia, diabetes, obesity, mental illness, substance abuse, and communicable diseases (Grunfeld et al., 2013; Lebrun-Harris et al., 2022; Office of Disease Prevention and Health Promotion [ODPHP], n.d.-a). Increasing the number of adolescents who receive annual preventative health services to 82.6% has been identified as an objective for HealthyPeople2030 (ODPHP, n.d.-a).

Despite ample evidence to support the value of annual visits, this measure has worsened with a relative decrease of 9.1% (Grunfeld et al., 2013; Lebrun-Harris et al., 2022; ODPHP, n.d.-a). Additionally, the amount of adolescents who received preventative health care services decreased from 78.7% in 2016-2017 to 69.6% percent in 2020-2021 (ODPHP, n.d.-a). This decrease has been attributed to a lack of accessible, equitable, and culturally competent care (Love et al., 2019)

Problem statement

The current trends in adolescent healthcare reveal a decrease in the utilization of preventative services and a subsequent decline in screening and counseling for at-risk behaviors. This measured reduction has the potential to alter the course of an individual's health across the lifespan (Grunfeld et al., 2013; Lebrun-Harris et al., 2022; ODPHP, n.d.-a). The community services task force (CSTF) has identified access and equity as barriers to achieving the Healthy People 2030 target to advance the percentage of adolescents who have had a preventative healthcare service in the past year (ODPHP, n.d.-b). As a solution, the CSTF proposes the implementation of SBHCs in low-income communities to

improve health outcomes (ODPHP, n.d.-b). We propose additional funding to increase the number of SBHC's in Southeast Michigan.

Significance to Practice/Population health

The World Health Organization (WHO) defines adolescence as a transitional period of rapid growth and development between the ages of 10 and 19 years of age (World Health Organization [WHO], n.d.). As of 2019, 42 million adolescents in the United States comprised nearly 12.8% of the population (ODPHP, n.d.-c). During this time, multiple adverse health related behaviors are prevalent making access to preventable healthcare fundamental. SBHCs provide adolescents with primary, mental, and preventative healthcare services and are especially vital in underserved communities. SBHCs can improve physical and mental health by administering immunizations, managing chronic conditions (obesity and asthma), anxiety and depression screening, decreasing hospital admissions, and limiting the use of substances (Keeton et al.,2012; Ran et al., 2016). SBHCs were also effective in educating adolescents about sexual risk and pregnancy prevention, therefore leading to a decrease in at-risk behaviors (Thongkorn & Chaimongkol, 2023) and increased use of contraceptives (Bersamin et al., 2018).

In addition to improved access and health outcomes, SBHCs support academic performance through improved attendance and decreased healthcare costs by preventing unnecessary emergency room visits (Goddard et al. 2022). In a study by Goddard et al. (2022) a total of 45 students were seen for asthma related care in one SBHC; 44 were sent back to their classroom and one student was sent home after receiving treatment from an advanced practice registered nurse (APRN). In this scenario, utilization of the SBHC led to a savings of 166 hours of classroom instruction and a cost savings of $67,770 when compared to an emergency room (ER) visit (Goddard et al. 2022). Ran et al. (2016) estimates a cost savings of up to $970 per visit. Guo et al. (2010) assessed quarterly Medicaid reimbursement for a total of 5056 students and it was calculated that utilization of SBHCs saved

Medicaid $35 per student per year. Low-income adolescents have a higher prevalence for at-risk behaviors and increased morbidity and mortality; therefore, access to SBHCs is vital (Arenson et al., 2019).

SBHCs address barriers to access in vulnerable populations including cost, transportation, parent availability, and compliance (Love et al., 2019). Lack of healthcare coverage decreases access to necessary resources that improve adolescent health and well-being. As most SBHCs are located on site, transportation barriers are eliminated (Kjolhede & Lee, 2021; Arenson et al., 2019). They address financial obstacles for underinsured or uninsured adolescents and improve health equity by enrolling eligible students in health care plans (Kjolhede & Lee, 2021). Parents, caregivers, and school leaders also benefit from SBHCs. Parents or caregivers understand that their child is receiving healthcare without leaving school at low or no cost, while school leaders benefit as there is a decrease in misused instructional time and nonattendance (Kjolhede & Lee, 2021). SBHCs improve adolescent health outcomes, provide preventative healthcare, and decrease financial burden (Love et al., 2019). Despite the evidence, SBHCs are underutilized in the state of Michigan.

Gap Analysis

The number of SBHCs in the United States has increased significantly over the last twenty years (Love et al., 2019). The School-based Health Alliance (SBHA) conducted the National School-Based Health Care Census report in 2016-2017 and reported that there were a total of 2,584 SBHCs serving school-aged students in the United States (SBHA, 2018). SBHCs provide healthcare access to underserved communities of which 46% are urban, 36% are rural, and 18% are suburban (SBHA, 2018). In Michigan there are 699 school districts (U.S. News & World Report, 2024) that are served by 279 SBHCs (School-Community Health Alliance of Michigan [SCHA-MI] 2020; Michigan Department of Health and Human Services [MDHHS], 2021-a). Despite continued growth and consistent funding, only half of

Michigan counties have access to a SBHC (SCHA-MI, 2020). More SBHCs are needed to meet the demands of adolescent health.

Project Aim

A policy analysis is being completed to identify potential options for increasing access to SBHCs in the state of Michigan. As evidenced by Healthy People 2030, increasing the number of adolescents who receive preventative healthcare is an objective that is yet to be met, and in fact continues to decline (ODPHP, n.d.-a). SBHCs have demonstrated success in providing preventative care, however, many adolescents are without access to school-based health (SBH). This Doctor of Nursing Policy Project seeks to evaluate potential policy options to proliferate the number of SBHCs in Michigan and propose a solution to meet the Healthy People 2030 objective AH-01 (ODPHP, n.d.-a).

Background

Within the adolescent population significant disparities exist for racial and ethnic minorities connected to social determinants of health (SDOH). SDOH are characteristics of an individual's environment that both directly and indirectly affect their health and wellness (ODPHP, n.d.-b). They are further qualified by the following five domains: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context (ODPHP, n.d.-b). Approximately half (49%) of adolescents identify as a minority, one-third live in poverty, and ten percent reside in rural communities (ODPHP, n.d.-c). Despite being at an increased risk for adverse health outcomes, adolescents who identify with the above SDOH are unlikely to receive preventative care, health maintenance, or mental well-being services (Love et al., 2019).

The United States began utilizing SBHCs in the 1960's and 1970's to address increases in adolescent pregnancy rates in urban communities (Love et al., 2019). Over the last 60 years the concept of SBH has evolved to better serve at-risk populations and address their unique health care needs (Love et al., 2019). The United States began closely tracking data on SBHCs in 1985 beginning with 31 SBHCs in

18 communities (Love et al., 2019). A significant increase occurred over the next decade with much of the expansion credited to private philanthropic funding from the Robert Johnson Wood Foundation (RJWF) (Love et al., 2019). Sponsorship of SBHCs occurs in a variety of ways including local health departments, area hospital systems, and nonprofit or community-based organizations (Love et al., 2019). At present, more than half of SBHCs are sponsored by federally qualified health center's (FQHCs), but only twenty percent of FQHCs are associated with a SBHC presenting an ample opportunity for growth (Love et al., 2019).

Since 2001, government programs at both the federal and state level have been the dominant source of funding for SBHCs (Love et al., 2019). The expansion of the primary care safety net and the realization of the affordable care act (ACA) corresponded with an increase in SBHCs (Love et al., 2019). However, state government grants were cited by 71% to 76% of SBHCs as their primary source of funding which tends to fluctuate with the political climate (Love et al., 2019). The growth and expansion of SBHC's in states with adequate funding is double that of their poorly funded counterparts (Love et al., 2019).

The Michigan Department of Health and Human Services (MDHHS) has supported SBH through the child and adolescent health center (CAHC) program for over 35 years (T. Doll, personal communication, February 12, 2024). The program has developed site models with varying scope, to address the unique needs of a diverse population. The three primary models include CAHCs, school wellness programs (SWPs), and sites that expand, and enhance emotional health (E3) (Bureau of Grants and Purchasing, 2024). For the purposes of this project, we will focus on CAHC sites which provide both clinical and mental health services, staff an advanced practice provider, and align with the national standard of SBHCs (Bureau of Grants and Purchasing, 2024). At present, the state of Michigan has 124 CAHC sites in 41 counties (SCHA-MI, 2020).

Policy Model

This policy analysis will utilize Bardach's Eightfold Path (Bardach & Patashnik, 2020). The framework consists of eight domains that serve to identify and address existing threats to population health (Bardach & Patashnik, 2020). These domains include defining the problem, assembling the evidence, selecting criteria, constructing alternatives, projecting outcomes, confronting tradeoffs, deciding on the most effective alternative, and telling the story. (Bardach & Patashnik, 2020). This project will apply steps one through seven to create viable policy options to address gaps in access to adolescent preventive care through the increase of operational SBHC's in Michigan. After a thorough policy analysis, we will generate a policy recommendation based on the economic impact, feasibility, and magnitude of significance to public health (Centers for Disease Control and Prevention [CDC], 2022).

Phase One

Phase one of the project, further classified into steps one through three, requires data collection and assessment (Bardach & Patashnik, 2020). The first step we completed was to identify the problem (Bardach & Patashnik, 2020). Using healthy people 2030 objective AH-01, we identified preventative healthcare in adolescents (12-17 years of age) as an area of concern. In step two, we assembled the evidence (Bardach & Patashnik, 2020), which included a thorough literature search of multiple databases, acquisition of publicly available data from SBHA, ODPHP, MDHHS, and a focused environmental scan. In addition, we identified potential stakeholder who could provide valuable insight into the feasibility, sustainability, and public and economic impact (CDC, 2022) of SBHCs within the community. Feedback from stakeholders was analyzed and common themes generated. In step three we compiled all data listed above and constructed alternatives for viable policy alternatives to mitigate the problem (Bardach & Patashnik, 2020).

Phase Two

Phase two of the project consists of steps four through seven in Bardach's eight-fold path (Bardach & Patashnik, 2020). In steps four and five we selected criteria to evaluate the alternatives

(Bardach & Patashnik, 2020) including public health impact, economic impact, and sustainability (CDC, 2022) and projected outcomes (Bardach & Patashnik, 2020). In these steps we analyzed facts, extrapolated outcomes, and assessed the relative value (Bardach & Patashnik, 2020). This process is discussed in length in the policy alternative section of this paper and displayed in Appendix A.

Step six required the authors to consider trade-offs (Bardach & Patashnik, 2020) which included resource expenditure and subsequent financial burden of the alternatives on the MDHHS, Michigan Department of Insurance, state and private healthcare plans, and the Michigan Department of Education. We anticipated that the trade-offs would evolve after careful consideration of stakeholder feedback. These trade-offs are discussed throughout the policy alternatives section of this paper.

In step seven of this policy analysis the authors considered and prioritized the alternatives (Bardach & Patashnik, 2020) and determined the most viable policy recommendation to increase the utilization of SBHCs in the state of Michigan. On April 25, 2024 the authors will complete step eight of the pathway by disseminating the evidence (Bardach & Patashnik, 2020) to a group of our peers at Michigan State University.

SWOT Analysis

A SWOT analysis was conducted to identify strengths, weaknesses, opportunities, and threats to increasing the number of SBHCs in Michigan. This analysis is depicted in Appendix B.

Strengths

For 35 years SBHCs have been an integral participant in adolescent health (T. Doll, personal communication, February 12, 2024). They improve access to care and academic performance especially in low-income areas and have demonstrated proven success in preventative care and management of chronic disease (Bhatta et al., 2017; MacGeorge et al., 2018; Raphael et al., 2022; Silberstein et al., 2020). At present, there are 124 SBHCs in Michigan with most clinics being in underserved communities

(SCHA-MI, 2020). Michigan has traditionally been supportive of SBHCs with most receiving state funding (SCHA-MI, 2020).

Strong partnerships with existing sponsors have been successful in maintaining and improving SBHCs. Sponsors include FQHCs, medical centers, nonprofit or community-based organizations, local department of health, and schooling system (SBHA, 2023-a). Local health care systems have partnered with municipal health centers such as MDHHS to implement SBHCs in their communities. For example, one health system has a total of 14 SBHCs that provide services such as chronic disease management, sports physicals, sick visits, immunization, STI testing and treatment and reproductive health (Henry Ford Health, n.d.-a). While another provides comprehensive preventable services that include physical and behavioral health in 23 schools throughout Southeast Michigan (Ascension, 2023).

Weaknesses

Although funding remains consistent, adequate access to funding continues to be a barrier. There are 699 school districts in the state of Michigan (US News & World Report, 2024) and only 124 SBHCs leaving many communities and adolescents without access to SBH (SCHA-MI, 2020; MDHHS, 2021-a). In 2023, the MDHHS allocated 2.4 million dollars to establish 26 additional SBHCs (MDHHS, 2023-a); however, at the close of the 2023 RFP cycle, funding remained unclaimed (T. Doll, personal communication, February 12, 2024).

In addition, most SBHCs are based in low-income communities (SCHA-MI, 2020), but there are low-income families that live or attend school in affluent communities and lack access to affordable healthcare (T. Doll, personal communication, February 12, 2024). SBHCs have proven successful in providing quality healthcare to adolescents, but many communities either cannot satisfy the eligibility criteria or remain resistant to their presence (T. Doll, personal communication, February 12, 2024). Many communities are either unaware of the benefits of SBHCs or don't fully understand the services provided and the positive impact it could have on their families (T. Doll, personal communication,

February 12, 2024). This resistance has been attributed by the SBHA as either a knowledge deficit or a misguided understanding of their scope and the services they provide (K. Conway, personal communication, February 22, 2024). As a result, the SBHA advocates for the sustainability and growth of SBHCs through dissemination of information that demonstrates the impact SBHCs have on healthcare and education (SBHA, 2023-b).

Opportunities

There are many opportunities for SBHC's in Michigan. Hospitals systems are a vital resource in developing and maintaining SBHCs. Section 501(r)(3)(A) requires hospitals to conduct a community health needs assessment (CHNA), which fosters collaboration between school districts and hospital systems to create solutions (Internal Revenue Service (IRS), 2023). Increasing partnerships between hospital systems and SBHCs directly relates to an increase in SBHCs. Moreover, SBHCs can acquire FQHC status if they are near a larger organization that is affiliated with FQHC status (Swider & Valukas, 2004). Affiliation with a FQHC leads to more federal funding which subsequently leads to the sustainability of these clinics.

The SBHA is an advocacy group that promotes SBHCs at the federal and state level. The SBHA supports high-quality healthcare and preventative services to adolescents at SBHCs across the county (SBHA, 2022-a). Additionally, they advocate for funding within Medicaid and the Children's Health Insurance Program (CHIP) (SBHA, 2022-a). SBHA encourages the expansion of federal Community Health Center (CHC) funding which low-income families rely on for comprehensive health care (SBHA, 2022-a).

Threats

Community involvement and support from school-board officials, health care providers, and the public is essential to the growth and development of SBHCs. One southeast Michigan school district recently voted against a plan for a new SBHC due to concerns that its establishment would divert from educational dollars (The Detroit News, 2023; Sprigg et al., 2017). For SBHCs to be successful the

community must have a clear understanding of SBH, including how SBHCs are beneficial to their families. In addition, health care providers, school board officials, and administrators must work collaboratively to ensure that available funds are used resourcefully to meet student needs (Keeton et al., 2012).

SBHCs require annual funding to maintain their sustainability. Community partnerships provide resources and strength to SBHCs (Swider & Valukas, 2004; SBHA, 2022-b). Without stable partnerships and sufficient funding, SBHCs cannot survive. Although local health system support does exist as mentioned above, there remains room for growth. For example, one area health system has hospitals in three different counties, but only two of those counties have a SBHC (Henry Ford Health, n.d.-b). Another health system supports 23 SBHCs across 5 counties; however, in those five counties alone there are 113 school districts (Ascension, 2023; Oakland Schools, n.d; Wayne RESA, 2024; Macomb County Michigan, 2024; Genessee Intermediate School District, 2024; K12 Academics, n.d.). Moreover, in the past several years two sets of large cross-market health system mergers have occurred in Michigan (Kaiser Family Foundation (KFF), 2023). Historically, similar mergers have led to increased costs and reduced community involvement, posing a threat to SBHCs (Kaiser Family Foundation (KFF), 2023).

Review of the Literature

A review of the literature was conducted utilizing CINAHL and Pubmed databases. Inclusion criteria consisted of full-text articles written in English and published from 2018 to present. Search terms were created with the intent to determine prevalent barriers in the delivery of adolescent preventative healthcare and identify viable solutions, specifically through SBHCs. The search terms applied were: adolescen* OR teen* OR “high school” OR “middle school” AND “school-based clinic*” OR “school-based clinic*”. An initial search of the databases produced a total of 62 articles with an additional 17 records identified through other sources. Of the original 79 articles, a screen of the titles revealed 10 duplicates; leaving 69 abstracts to be screened. During the initial screening, 60 articles were excluded due to

different population, intervention, or outcome, relevance to the clinical question, or country of origin other than the United States (US). After screening the abstracts 9 articles were included in the qualitative synthesis (See Appendix C). From those 9 articles the following themes were identified: access, utilization of services including vaccination, preventative screenings, and health management, improved outcomes, and barriers to implementation including knowledge deficit, lack of trust or community support, and increased cost (see Appendix D).

Access

Access is often overlooked as a barrier to adolescent healthcare as federal and state programs exist to provide adolescents with healthcare coverage (Garney et al., 2021). Although healthcare coverage is an essential element of access, it is not exclusive. To recognize access as a barrier, we must expand our definition to include the ability to obtain services in a timely manner from a qualified provider (Garney et al., 2021). At particular risk for poor adherence to preventive healthcare are adolescents who identify as a minority, live in poverty, or experience other health-related disparities (Duck et al., 2023; Barton, 2019). SBHC's provide access to preventative healthcare services for adolescents who lack the resources (time, transportation, and health literacy) to seek care at an outside institution (Bhatta et al., 2017; Duck et al., 2023; Gruber et al. 2021, MacGeorge et al., 2018; Raphael et al., 2022; and Silberstein et al., 2020). Adolescents who utilize SBHC's as their primary medical home receive prompt treatment for both acute and chronic conditions in a convenient location that eliminates barriers associated with time and transportation (Gruber et al., 2021; MacGeorge et al, 2018; Raphael et al., 2022).

Utility of services (vaccination, screenings, health management)

SBHCs offer a variety of services to the adolescent population including preventative healthcare (screenings and immunizations), health maintenance, health education, and chronic disease management (Nahum et al., 2021; Soleimanpour et al., 2018). Beyond improving access to the above services, SBHC's outperform their traditional counterparts in disease identification and management

through increased rates of health-related screenings, prompt follow-up, and shorter intervals between diagnosis and treatment. (Bhatta et al., 2017; MacGeorge et al., 2018; Raphael et al., 2022; Silberstein et al., 2020).

Barton et al. (2019) and Bhatta et al. (2017) established that SBHC's are the optimal environment to identify adolescent depression and social and behavioral determinants of health (SBDOH). Most screenings took five minutes or less to administer, increased identification of moderate depressive disorder and SBDOH, and generated appropriate referrals for at-risk students (Barton et al., 2019; Bhatta et al., 2017). Screening tools provide valuable information that has the potential to save time, money, and resources but is often omitted in acute adolescent visits (Bhatta et al. 2017).

Improved Outcomes

The literature also supports improved outcomes for SBHC's management of acute and chronic diseases. Attention deficit hyperactivity disorder (ADHD) is a common interactive or behavioral condition that affects adolescents both socially and academically (MacGeorge et al., 2018). The CDC prevalence data estimates that from 2016 to 2019 3.3 million adolescents in the United States and 9.6% of Michigan children across the ages of 3-17 were diagnosed with ADHD. Due to the powerful social and academic components of ADHD, schools are already actively involved in the diagnosis and non-pharmacologic management of ADHD. When SBHCs undertake the medical management of ADHD adolescents are more likely to have guideline-driven ADHD care with appropriate follow-up (MacGeorge et al., 2018). Similarly, Raphael et al. (2022) discovered that adolescents were more probable to seek diagnosis and care for sexually transmitted infections (STIs) at SBHCs than outside family planning clinics. In addition to increased screening and identification, on average adolescents received treatment 12 days sooner than those attending an outside clinic (Raphael et al., 2022).

Although the evidence was inconclusive regarding SBHC's as an avenue to improve vaccination, SBHCs can influence vaccination rates indirectly through education (Siddiqui et al., 2022). According to

Siddiqui et al. (2022) enhanced education increased vaccination coverage by 19% (Siddiqui et al., 2022). With that knowledge, SBHCs have a unique opportunity to augment vaccination rates through presentations and other educational materials geared towards groups of adolescents and their families (Siddiqui et al., 2022; Gruber et al., 2021).

Barriers to Implementation

Despite the many advantages of SBHCs, several barriers persist in their successful implementation and long-term sustainability (Gruber et al., 2021; Nahum et al., 2021). The literature provides a comprehensive review of stakeholder perspectives on both the utility and feasibility of SBHCs. Gruber et al. (2021) and Nahum et al. (2021) both identified a knowledge deficit of students, staff, and caregivers as a significant barrier to the utilization of services. Teachers and parents alike cited a lack of trust and poor communication as limitations to effective and efficient care (Gruber et al., 2021; Nahum et al., 2021). According to Nahum et al. (2021) additional themes of parental mistrust were identified: safety, efficacy, competency, confidentiality, government oversight, and external influences. Both Gruber et al. (2021) and Nahum et al (2021) propose solutions to the above barriers through improved collaboration (education, shared calendars, and scheduling) and an increased presence of SBHC providers within the classroom and community. The most common barriers cited within the literature were related to confidentiality, a lack of knowledge, limited access, and increased cost (Garney et al., 2021; Love et al., 2019). SBHCs have been identified as a viable solution to address the above barriers (Love et al., 2019; ODPHP, n.d.-b; Solemainpour et al., 2021); however, they remain underutilized (Gruber et al., 2021; Keeton et al, 2012; Nahum et al., 2021).

Environmental Scan

An extensive environmental scan was conducted to assess best practices for implementation of policy to increase SBHCs and maintain sustainability. Data was collected from SBHA (2023-b), to identify states with the highest percentage of SBHCs relative to the number of public schools (see Appendix E).

For the purposes of this project, we will include the following states in our environmental scan Hawaii, New York, California, and Oregon.

In Hawaii, 9.2% of public schools have a SBHC whereas only 2.8% of Michigan public schools have a SBHC (SBHA, 2023-b). Hawaii began to invest in SBH in 2014 with the Hawai'i Keiki (HK): Healthy and Ready to Learn program. HK began as a collaboration among the Hawaii Department of Education (DOE) and the University of Hawaii's school of nursing (Mattheus et al., 2022). The program has experienced a tremendous amount of growth secondary to overwhelming support from the Department of Health and Department of Education, increasing their support staff by 57 percent from 2021 to 2022 (Mattheus et al., 2022). In addition, the DOE has allocated supplemental funding to have a health support staff on site for every school (Mattheus et al., 2023).

There are 682 SBHCs in the state of New York (SBHA, 2023-b) and a total of $17 million state dedicated funds in fiscal year 2017 (Love et al., 2019). New York's SBHCs are funded by multiple sources including government financial support, grants, organizational backing, and third-party revenue (Philanthropy New York, 2014). Medicaid is the most significant third-party payer which supplies 89% of reimbursement for the program (Philanthropy New York, 2014).

In 2022 to 2023 there were six funders awarded to New York School-Based Health Foundation (NYSBHF) with grants ranging from $95,000 to $400,000 (New York School-Based Health Foundation (NYSBHF), 2024). In 2022, Congress passed the Omnibus Appropriations package (H.R. 2471) which included 30 million dollars for SBHCs within section 330 Health Centers program (Procopis, 2022). This was an increase from the previous year of 25 million dollar (Procopis, 2022). Mount Sinai Hospital in New York currently provides care to more than 2,000 students in 6 different SBHCs (County Health Rankings and Roadmap, 2023).

California has 400 SBHCs (SBHA-CA, n.d-a) and, although they are much larger than Michigan, has a goal of growing to 500 by the year 2030 (SBHA-CA, n.d-a). Senate Bill 564 along with Public Law

111-148 establish the grants and funding necessary for the continuation of SBHCs (SBHA-CA, n.d-b). California also has a Local Control Funding Formula which allocates resources to those most in need and increases funding (SBHA-CA, n.d-c). Recently, California is recommending the Strategic Anti-Violence Funding Efforts Act which will allow funds gained from closing two prisons to be directed to increase access of clinical and psychological health services for adolescents through SBHCs (SBHA, 2023-c). If this bill is passed, a total of $50 million in yearly subsidy would be accessible for SBHCs (SBHA, 2023-c).

Oregon operates a statewide network of SBHC consisting of 121 SBHCs (SBHA, 2023-b) in 25 counties (County Health Rankings, 2023). The Oregon ACTION Grant Program assists SBHCs in 4 different counties (School-Based Health Alliance-Oregon (SBHC-OR), n.d-a) and last March Senate Bill 549 was introduced into the Oregon legislature which will allow the state to provide funding to local communities and their associated school-districts according to their needs (SBHC-OR, n.d-b).

A search of the SBHA, health departments, the National Association of State Boards of Education (NASBE), and Substance Abuse and Mental Health Services Administration (SAMHSA) was conducted throughout this policy project. According to NASBE (2022), only one-third of states bill Medicaid for eligible school health services. Currently, only Oklahoma, Arkansas, Louisiana, and Wyoming have effectively adopted funds from Project AWARE (state funding) and ESSER (federal funding) (NASBE, 2022). In 2022 and 2023 only one city in Michigan has received the Project AWARE grant which was the Ottawa Area Intermediate School District in Holland (Substance Abuse and Mental Health Services Administration (SAMHSA), 2023).

Cost Benefit Analysis

We incorporated two significant studies (Guo et al., 2010; Ran et al., 2016) to complete a cost-benefit analysis of SBHCs as an avenue to increase adolescent preventative visits. Guo et al. (2010) explored the role and value of SBHCs regarding health inequity. Most students enrolled in the SBHCs assessed in this study were uninsured or low-income and faced barriers to preventative care including

socioeconomic status, discrimination, and lack of access (Guo et al., 2010). Cost was assessed across three arenas: healthcare, patient/family, and initial startup/facility costs. Healthcare costs included operational costs, pharmacologic expenses, medical equipment, and provider reimbursement, whereas patient costs included copays and productivity loss (Guo et al., 2010). In contrast, benefits were primarily defined as improved health status, a decrease in resource utilization, and costs saved from alternative/inappropriate avenues of care. Guo et al. (2010) calculated a savings of 1.35 million dollars over 3 years from the utilization of SBHCs.

Ran et al. (2016) included 21 studies in their economic evaluation of SBHCs. The articles all shared similar criteria when outlining costs verse benefits. Costs including mainly start-up cost and annual operating costs (Ran et al., 2016). The benefits included healthcare costs that were otherwise averted including hospitalization, emergency room visits, pharmacologic intervention, referrals, and private clinic visits as well as costs associated with loss of productivity (Ran et al., 2016). The findings of the systematic review were that SBHCs provide quality cost-effective healthcare with significant savings noted particularly for Medicaid (Ran et al., 2016).

Stakeholder Identification

Policymakers and stakeholders were identified, each with a distinct responsibility and perspective to implement more SBHCs and improve population health (see Appendix F). The pertinent stakeholders include state legislatures, health departments, school boards, advocacy groups, and health care providers. State legislatures play an integral role in development of SBHCs, authorizing policy change and allocating funds in the state of Michigan. Health departments promote and manage health-related priorities to improve population health. The Michigan health department collaborated with the department of education to establish programs whose primary objectives are to increase healthcare access to adolescents. One such program is the implementation of SBHCs (MDHHS, 2023-b). School districts work collaboratively along with MDHHS to implement these programs that will meet the needs

of adolescents. SBHA is an organization whose goal is to improve the health of adolescents and advocate for SBHCs (SBHA, 2023-a). This organization has many initiatives that support SBHCs and help adolescents reach their full potential (SBHA, 2023-a). Healthcare providers are an imperative stakeholder as they provide adolescents with primary health care, mental health care, and preventative services. Collaboration between these stakeholders is key to a successful SBHC including identifying role expectation and coordination of care. As previously stated, there are multiple adolescent and familial benefits to implementing more SBHCs. The use of SBHCs has improved graduation rates of high school adolescents, especially in high-risk students, in comparison to non-sbhc users (Kerns et al., 2011).

Methods

Project Site and Population

Preventative health services that promote adolescent mental and physical well-being are vital components to a thriving community. During a comprehensive review of the literature stakeholders with a vested interest in adolescent health were identified. Because this project unifies two distinct professions within a common setting to achieve a shared goal a diverse group of stakeholders were identified. This policy analysis project will be implemented in various settings throughout Oakland County. The following stakeholders were contacted: 2 Michigan state legislators, 2 school administrators, School-Based Health Alliance, and the Oakland County health department.

Setting Facilitators and Barriers

Significant barriers to the implementation of this project include variability of community knowledge and engagement along with stakeholder response, availability, and geographic location. To address these potential barriers, virtual meeting software will be utilized whenever possible to provide flexibility to stakeholders. In addition, high-power/high interest stakeholders will be contacted first to improve response rate and feedback received from those interviews will be analyzed when moving

forward with low power/low interest stakeholders. Experienced and knowledgeable stakeholders will be identified and contacted. Interviews secured and valuable information obtained.

A standardized questionnaire for each stakeholder category will be created and approved by faculty prior to interviews to ensure efficiency in information gathering. Stakeholder responses will be recorded in writing or typographically and aggregated based on common themes.

Data Collection procedure, Measurement Instrument/Tools

The Implementation of this analysis involved qualitative data collection through stakeholder interviews facilitated by the stakeholder questionnaire (see Appendix G). Throughout the interviews, stakeholder responses were recorded typographically and or in writing. Common themes were identified and aggregated based on stakeholder response and further synthesized during data analysis.

Timeline

This project was implemented following submission of the initial policy proposal in October 2023. Implementation took place from January 2024 to March 2024. Following implementation, an analysis of stakeholder feedback allowed the authors to formulate viable policy alternatives and provide a formal recommendation by March 2024. The project will conclude with dissemination of the evidence on April 25, 2024 (see Appendix H).

Data Analysis

Quantitative data was obtained through stakeholder interviews conducted virtually and in-person depending upon stakeholder preference and availability. Stakeholders were located throughout central and southeast Michigan including Ingham, Oakland, and Wayne Counties. Twenty stakeholders were contacted of which nine responded and participated.

Stakeholders who participated were identified as individuals who could provide valuable insight into the feasibility, sustainability, and public and economic impact of SBHCs within the community. Those involved included two state representatives, an administrator for CAHC through the MDHHS,

school board officials, school administrator, advocacy grant writer, previous and current healthcare administrators, and a healthcare provider.

Stakeholders were organized into categories based upon their expertise and influence and asked a set of standardized questions related to SBHCs. Notes were recorded by the authors on separate word documents which were later examined for accuracy and breadth. Once all interviews were completed the documents were reviewed, and recurrent themes identified. In total, five themes were identified and explored.

Theme 1: Access

All stakeholders agreed that existing SBHCs have improved access to preventative services within the state of Michigan and that increasing the number of SBHCs would be advantageous to the surrounding community. One stakeholder identified SBHCs as instrumental to improved mental and physical health but deemed their current structed as inadequate to manage significant poverty. Three stakeholders felt that access to mental health services was the primary motivation for establishing SBHCs and one stakeholder found preventative services were significantly under-utilized. One stakeholder felt that access to SBHCs was beneficial to school of choice districts, while another stakeholder viewed this as a barrier – citing that parents with longer commutes may not see a benefit to having their child seen on site as opposed to an outside provider.

Theme 2: Funding

Although, all stakeholders were aware that funding exists, three were uncertain if current funding was adequate. Two stakeholders felt that current funding was sufficient for growth, and one expanded on that further by noting there is available funding that is not being utilized. In contrast, two stakeholders viewed current funding as inadequate, one of which proposed increased federal funding as an area of interest. One stakeholder voiced strong support of the current funding measures citing a relatively stable increase of funding throughout the years as well as strong bipartisan support. Another

stakeholder felt initial funding was likely adequate, but subsequent funding for maintenance was lacking.

Theme 3: Program awareness

Multiple stakeholders stated that communities are not aware of the school-based clinic and what they can provide/do for the students. One school administrator stated that because the school has open enrollment, most students travel further, and their parents don't want to necessarily utilize the program. Two stakeholders advocated for more aggressive outreach from local healthcare partners such as health departments and major hospital systems with experience in establishing SBHCs. One stakeholder recognized the benefits to the above organizations in increased revenue and decreased healthcare costs but admits that these benefits are often hidden or buried and therefore difficult to conceptualize.

Theme 4: Grant requirements

Multiple stakeholders expressed concern over the current format for accessing available funding. A request for proposal (RFP) is the application process to access funds for SBHCs. Throughout the interview process two sub-themes were identified for this category including RFP complexity, and restrictive criteria. Regarding RFP complexity, three stakeholders felt that new agencies who were unfamiliar with writing the RFP were at a disadvantage when applying for funding. One stakeholder felt that without experience it was nearly impossible to navigate in such a short timeframe. In addition, funding is competitive, and two stakeholders cited experience as beneficial to increasing scores. Restrictive criteria were identified by three stakeholders as the primary barrier to expanding SCBHs into more rural areas within the state. One stakeholder further clarified that the minimum student requirement for full clinical sites likely prohibits many districts from applying for funding.

Theme 5: Knowledge Deficit/Lack of Buy in

Stakeholders agreed that most of the public has a poor understanding of what services SBHCs are able to provide to the community. Three sub themes were identified surrounding knowledge deficits and lack of buy-in with stakeholders. These sub themes included: healthcare/insurer knowledge deficits, parental/student knowledge deficits, and informed consent. Three stakeholders felt that parents/guardians were concerned with their child being treated by a healthcare provider without them being present and speculated that these concerns arose from the types of services that would be provided. Two stakeholders felt that these deficits were best dissolved over time through relationship building, improved communication, and consistent education. Another stakeholder felt that strong interprofessional relationships with educators and administrators increases parental support and encourages student participation. Regarding health systems and insurers, two stakeholders identified collaboration with external physicians, referrals, and reimbursement as a barrier to utilization of services-especially in smaller communities.

Seven stakeholders indicated that informed consent was a barrier to utilization of services and one stakeholder provided qualitative data to support this claim. In one school-district in Southeast Michigan, less than fifteen percent of students have an informed consent on file. Four stakeholders indicated that Michigan state laws surrounding the distribution of services related to reproductive health was a barrier in SBHC. One stakeholder went on to explain that SBHCs are not able to provide students with birth control or refer them to an abortion clinic because it could jeopardize state funding. This stakeholder went on to say that the key to a successful clinic is to build trust with parents, students, and guardians.

Two stakeholders elaborated on the topic of parental mistrust in SBHCs, stating that parents believe that the centers will perform abortions or will give out birth control without the parent's knowledge. Another noted that birth control is a major issue that school clinics face; however, it is currently illegal to distribute birth control on school grounds. The clinics have a hard time utilizing

preventative contraceptives such as condoms for protection of STIs and prevention of pregnancy. They can treat STIs but do not have the ability to give students contraceptive condoms. However, he states that minors can consent to their own care as it pertains to mental health, substance abuse and sexually transmitted infections under minor consent laws. (Michigan, N.D).

Policy Alternatives

Increase State Funding

At present there are 279 SBH program sites in the state of Michigan this includes CAHCs, SWPs, and E3s (T. Doll, personal communication, February 12, 2024). Of these sites 124 are full clinical sites that staff an advanced practice provider and a master's level mental health provider (T. Doll, personal communication, February 12, 2024). These sites are accessible to students and community members five days per week with varying hours of operation (Bureau of Grants and Purchasing, 2024). In addition, the State of Michigan recognizes the need for modified site options for districts that cannot meet the current funding criteria and have created alternative site options (T. Doll, personal communication, February 12, 2024). These alternative sites include 35 SWP sites which consist of a registered nurse paired with a master's level mental health provider and 104 E3 sites which only staff a mental health provider (Bureau of Grants and Purchasing, 2024). Flint has a total of 10 combination sites that staff a variety of nursing and mental health professionals and there are six BHS sites that are similar to E3 sites; however, these sites receive funding allocated in response to the Flint Water Crisis (T. Doll, personal communication, February 12, 2024).

Funding for SBHCs is allocated through the department of education from the K-12 state aid budget (T. Doll, personal communication, February 12, 2024). As per the 2023-2024 state aid budget 33,000,000 dollars was allocated for primary health services or SBHCs (Michigan Legislature, 2024). Each year a portion of the state funding is designated for the establishment of new school based-health centers (T. Doll, personal communication, February 12, 2024). At present there is 4,460,000 dollars in

available funds for the establishment of up to twenty new clinical sites within the State of Michigan (Bureau of Grants and Purchasing, 2024). The RFP was released early 2024 and requests for funding were due on 3/12/24 (Bureau of Grants and Purchasing, 2024).

Discussion

The current program for SBHCs managed by the MDHHS has allowed for consistent growth in the number of SBHCs operating within the State of Michigan. After an extensive review of the funding and meeting with relevant stakeholders, we conclude that the current funding is adequate for continued growth. This observation is evidenced by 35 years of consistent advancement and a recent excess of funding at the conclusion of RFP cycles that has carried over to the next fiscal year (2023-2024) (T. Doll, personal communication, February 12, 2024).

Increase Private-public Partnerships

Although funding is secured through the Department of Education, school-districts partner with external agencies to apply for state funding and provide services within their community (T. Doll, personal communication, February 12, 2024). At present, one-third of school districts are partnered with a hospital system, one-third with a health department, and one-third with a FQHC (T. Doll, personal communication, February 12, 2024). FQHCs receive additional funding from the federal government allocated within section 330 of the Public Health Act (Love et al., 2019).

Discussion

The primary care safety net is a collective term to identify providers, institutions, programs, and funding dedicated to service of the poor and uninsured (Institute of Medicine [IOM] Committee on the Changing Market, Managed Care, and the Future Viability of Safety Net Providers., 2000). Federal funding of SBHCs has always been tied to FQHCs. Section 330 of the Public Health Service Act authorizes the Health Center Program to provide funds to eligible Community Health Centers (Love et al., 2019). Funding is comprised of multi-year base funding and annual discretionary appropriations (National

Association of Community Health Centers [NACHC], 2023). Following a significant increase in 2015, program funding has remained relatively stable at 5.6 billion dollars due to consistent bipartisan congressional support (NACHC, 2023). As of the 2016-2017 census, FQHCs accounted for fifty-one percent of sponsoring agencies nation-wide (Love et al., 2019); however, only thirty percent of SBHCs in the state of Michigan are sponsored by FQHC's (T. Doll, personal communication, February 12, 2024). As a result, we believe that there is significant room for growth in partnerships with FQHCs.

Modify Existing Eligibility Criteria

Each year a portion of the K-12 state aid budget by virtue of the Michigan Compiled Law (MCL) 388.1631a is allocated for the development of new SBHCs (Michigan Legislature, 2024). To apply for funding applicants must fulfill current eligibility criteria which include a strong relationship with their collaborating school district, the ability to demonstrate qualifications and need, an extensive program plan, a brief overview of additional funding sources, and a budget summary (Bureau of Grants and Purchasing, 2024). Applications are graded on a point system that considers organizational culture, experience, capacity, community need, and program plan and must receive a minimum of 70 points to be considered for funding (Bureau of Grants and Purchasing, 2024). Applicants are eligible to apply for up to four additional sites per application cycle as long as two of the sites are in counties without an existing SBHC (Bureau of Grants and Purchasing, 2024). In addition, applicants must be able to meet the match requirement of thirty percent for each subsequent year the SBHC receives state funding (Bureau of Grants and Purchasing, 2024). The match can be obtained either through cash donations (hard match), in-kind donations (soft match), or billing revenue. Priority is given to sites in counties without existing SBHC programs (Bureau of Grants and Purchasing, 2024). Successful applicants are those who can meet performance criteria as discussed below (Bureau of Grants and Purchasing, 2024).

Discussion

At present, full clinical SBHC sites are eligible for base funding up to 275,000 dollars per year this is an increase from 195,000 dollars in 2017 (Bureau of Grants and Purchasing, 2024; MDHHS, 2017). To be considered a full clinical site the SBHC must located on school grounds and provide services to students five days per week for at least 30 hours (Bureau of Grants and Purchasing, 2024). They staff an advanced practice provider and a master's level mental health provider. Patient volume is determined by school size (Bureau of Grants and Purchasing, 2024). Schools with greater than 700 students must treat at least 500 unduplicated patients per year, and those with less than 700 students must treat at least 350 students per year (Bureau of Grants and Purchasing, 2024).

Alternative clinical sites and SWP sites were created as an option for school-districts and communities that are unable to meet the criteria listed above (T. Doll, personal communication, February 12, 2024). They receive less funding than full clinical sites but have less stringent requirements (Bureau of Grants and Purchasing, 2024). Alternative SBHC sites staff the same providers as full clinical sites but are only required to provide services three days per week for a minimum of 24 hours (Bureau of Grants and Purchasing, 2024). They are required to serve at least 200 unduplicated students per year and are eligible to receive up to 180,000 dollars of funding (Bureau of Grants and Purchasing, 2024). SWPs staff a registered nurse under the supervision of an off-site physician and a master's level mental health professional (Bureau of Grants and Purchasing, 2024). They are required to provide services five days per week for at least 30-40 hours and see at least 250 unduplicated students per year (Bureau of Grants and Purchasing, 2024). They are eligible to receive up to 200,000 per year of funding (Bureau of Grants and Purchasing, 2024).

The development of tiered site structures and funding availability has allowed for additional diversity within the applicant pool. However, the complexity of the application process paired with the requirement to treat a set number of unduplicated patients remains a barrier for many districts (T. Doll, personal communication, February 12, 2024). As discussed in the data analysis, one stakeholder

disclosed that approximately 15 percent of students had a consent for treatment in their file. In a school of 750 students that is significantly less than the 500 unduplicated students that are required by the current eligibility criteria (Bureau of Grants and Purchasing, 2024).

Sustainability Plan

Sustainability is a fundamental component of productive policy analysis (Bardach & Patashnik, 2020). SBHCs provide many benefits to not only students but also to adults in the community. As a result, SBHC have secured both state and federal support through the expansion of the Primary Care Safety Net, the Affordable Care Act of 2010, and Section 330 of the Public Health Act (Amelia Kohm & Lauren Rich; Love et al., 2019). In the past, SBHCs have experienced bipartisan support and subsequently consistent increases in both state and federal funding (NACHC, 2023). Despite the stability of funding, barriers to establishing SBHCs remain including community support, administrative burden, and provider recruitment and retention. Facilitating and developing long lasting partnerships is critical for sustainability. These partnerships span the private-public sector and include local advocacy groups as well as state and federal programs that promote provider retention and assist with reimbursement.

Advocacy groups such as the SBHA (national) and school-based health alliance of Michigan (local) provide support to SBHCs through advocacy efforts to maintain/increase current state and federal funding and promote fiscal sustainability through improved reimbursement by Medicaid and CHIP (SCHA-MI, 2024). In addition, local chapters provide resources for establishing and maintaining SBHCs and assistance with funding applications, significantly reducing administrative burden. Maintenance of federal loan forgiveness and repayment programs including the National Health Services Corps which increases provider recruitment and retention by designating scholarships and permitting loan repayment to health care providers in underserved communities (Rural Health Information Hub, 2023).

Discussion

Policy alternatives were discussed at length throughout data analysis and common opportunities for growth that were identified included advocacy, outreach, and education. The most common barriers to establishing SBHCs in areas without an existing presence were lack of community support, knowledge deficits, and inability to meet current eligibility criteria. Stakeholders felt that community members were concerned with the facilities scope particularly as it relates to reproductive health. Similarly, barriers to utilization of existing facilities primarily consist of lack of parental consent for comparable concerns.

It was the opinion of most stakeholders that due to consistent bipartisan support and strong partnerships; funding is not a barrier to increasing the number of SBHCs in the State of Michigan. Most stakeholders agreed that rigid eligibility criteria limited the diversity of the applicant pool. Stakeholders also emphasized the importance of community outreach, program transparency, and limiting misinformation.

A review of stakeholder interviews provided the authors with a foundation for constructing viable policy alternatives. Utilizing the CDC framework, alternatives were evaluated based upon feasibility, sustainability, and public health and economic impact (CDC, 2022) (see Appendix A). Below you will find the authors' recommendation for increasing the number of adolescents with preventative healthcare in the State of Michigan.

Recommendation

After careful consideration of stakeholder feedback and potential alternatives for improving access to SBHCs in the state of Michigan there is no one solution to solve the problem. Instead, we recommend a multi-pronged approach that includes maximizing current state and federal funding, increasing the number of partnerships with FQHCs to meet the national average of fifty percent, and modifying existing eligibility criteria to improve diversity within the current applicant pool.

Conclusion

The number of adolescents with annual preventative healthcare continues to decrease from a baseline of 78.7 percent in 2016-2017 to 69.6 percent in 2020-2021 (ODPHP, n.d.-a). SBHCs accommodate the unique needs of the adolescent in an accessible and safe environment thereby improving health outcomes by increasing access to preventative health care (ODPHP, n.d-b). Despite consistent growth and proven sustainability, several regions within the state of Michigan have a low presence of SBHCs or SBHCs are absent altogether. These regions tend to be rural and include areas such as central Michigan, northeast Michigan, and the Upper peninsula (MDHHS-b, 2021). At present, to remain eligible for funding renewal providers are required to see a certain number of unduplicated patients (Bureau of Grants and Purchasing, 2024). Although the number of unduplicated students is adjusted for school-size, in many districts this requirement is unrealistic and should be re-evaluated. Modifying eligibility criteria in this way will allow smaller districts to consider pursuing a SBHC. This paired with an increase in the number of partnerships with FQHCs would supply additional funding and support to more rural areas.

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Appendix A

Table 1

Policy Evaluation Criteria

Policy Analysis: Evaluation Criteria				
Criteria	**Public Health Impact**	**Feasibility**	**Economic and Budgetary Impact**	
Scoring Definitions	***Low:*** *small reach, effect size, and impact on disparate populations* ***Medium:*** *small reach with large effect size or large reach with small effect size* ***High:*** *large reach, effect size, and impact on disparate populations*	***Low:*** *No/small likelihood of being enacted* ***Medium:*** *moderate likelihood of being enacted* ***High:*** *High likelihood of being enacted*	***Less favorable****: High costs to implement* ***Favorable****: Moderate costs to implement* ***More favorable****: Low costs to implement*	***Less favorable:*** *costs are high relative to benefits* ***Favorable:*** *costs are moderate relative to benefits* ***More Favorable:*** *costs are low relative to benefits*
Policy 1: Increase state funding	Low **Medium** High Concerns about the amount or quality of data (yes/**no**)	Low **Medium** High Concerns about the amount or quality of data (yes/**no**)	**Less favorable** Favorable More favorable Concerns about the amount or quality of data (yes/**no**)	**Less favorable** Favorable More favorable Concerns about the amount or quality of data (yes/**no**)
Policy 2: Increase public/private partnerships	Low Medium **High** Concerns about the amount or quality of data (yes/**no**)	Low Medium **High** Concerns about the amount or quality of data (yes/**no**)	Less favorable **Favorable** More favorable Concerns about the amount or quality of data (yes/**no**)	Less favorable **Favorable** More favorable Concerns about the amount or quality of data (yes/**no**)
Policy 3: Modify existing eligibility criteria	Low Medium **High**	Low **Medium** High	Less favorable **Favorable** More favorable	Less favorable Favorable **More favorable**

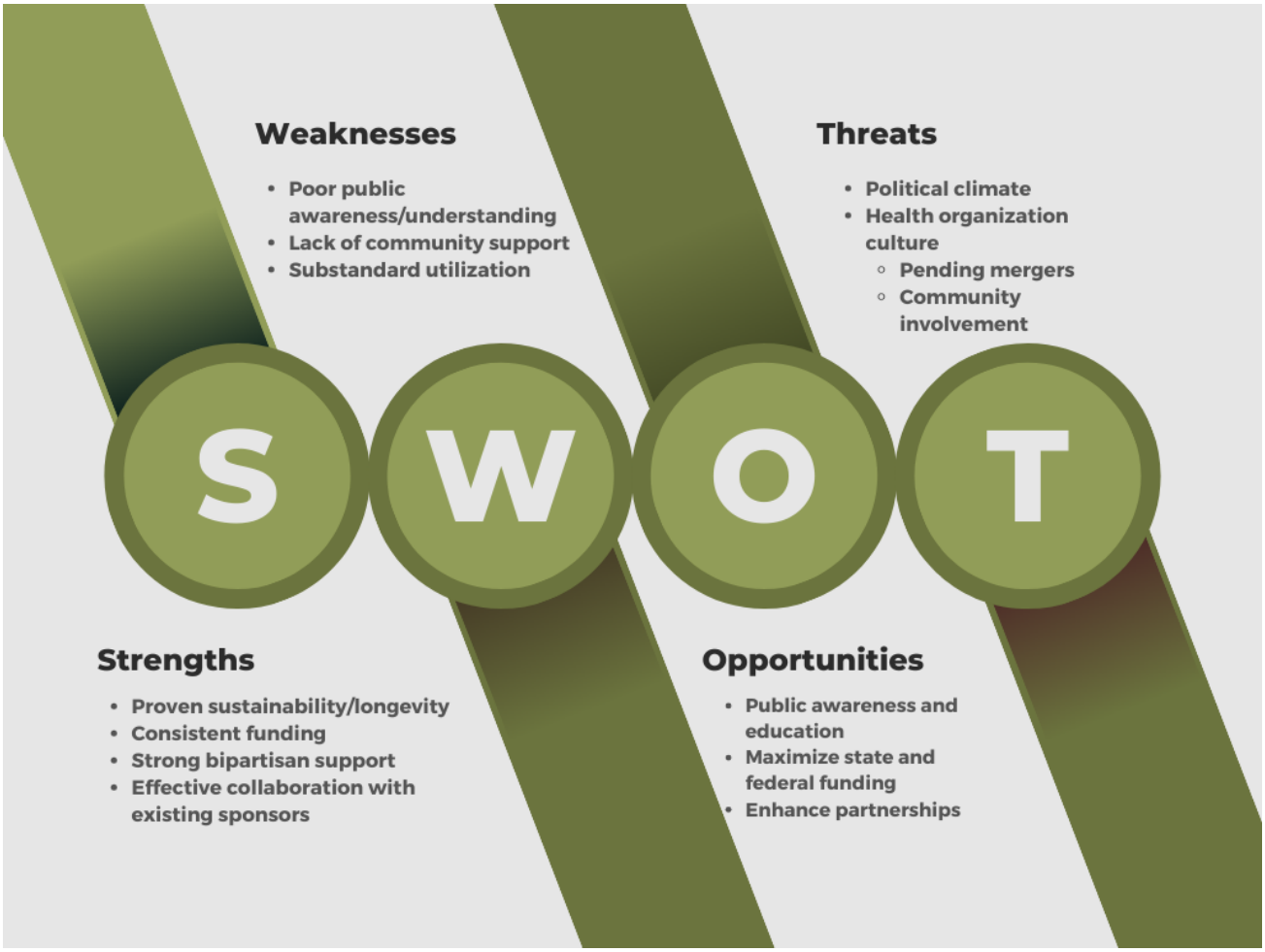
	Concerns about the amount or quality of data (yes/**no**)	Concerns about the amount or quality of data (**yes**/no)	Concerns about the amount or quality of data (**yes**/no)	Concerns about the amount or quality of data (yes/**no**)

Table adapted from CDC (2022).

Appendix B

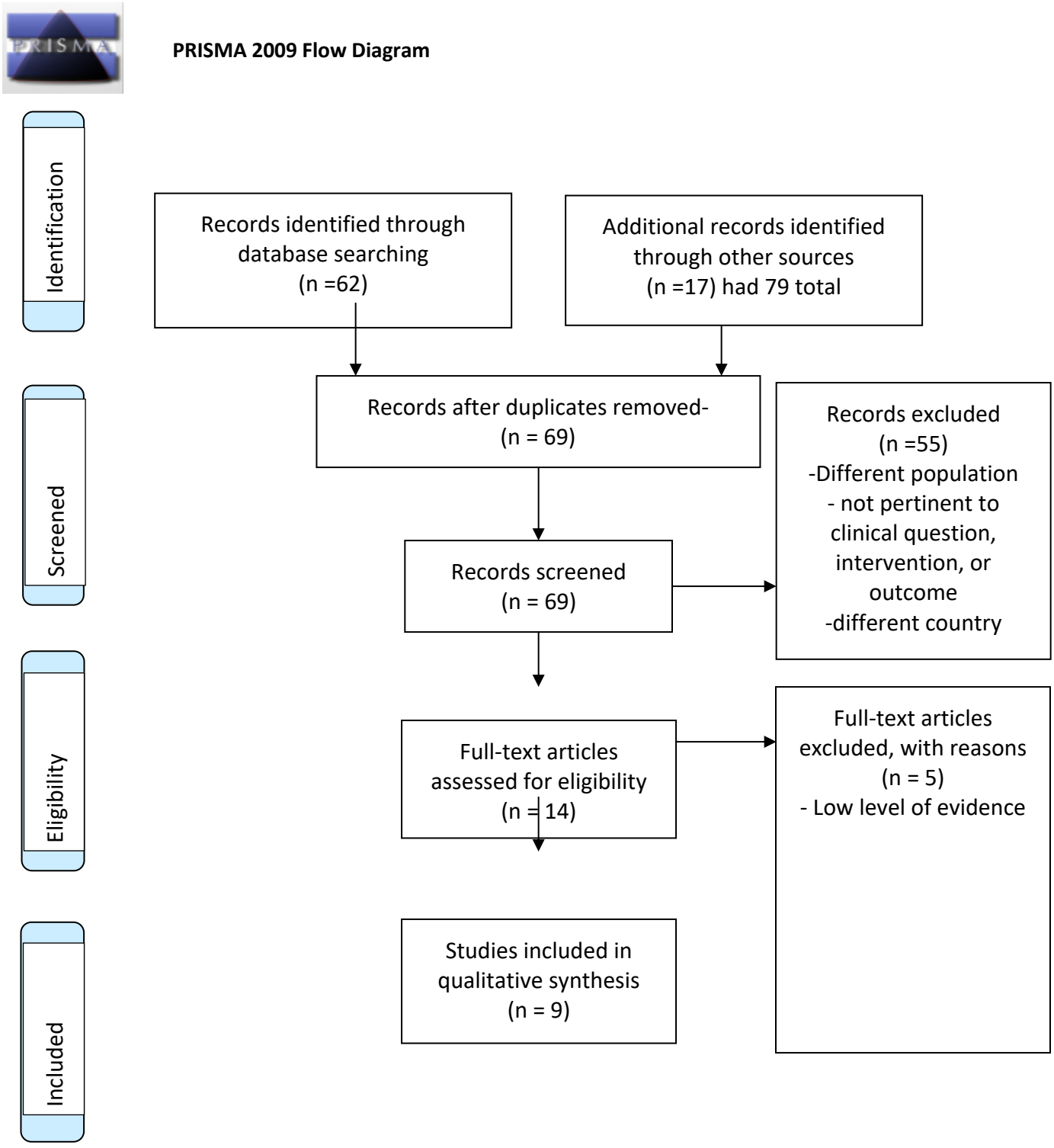
Figure 1

SWOT Analysis



Appendix C

Diagram 1



PRISMA Flow Diagram as adapted from Moher et al. (2009).

Table 1

Literature Table

Author/Title	Level of Evidence	Purpose of the project/research	Framework	Results	Relation to Project	Implications for Practice
Barton et al. (2015)	Level V-Quality Improvement A screening set was developed and implemented	Purpose of this article was to assess the ability to screen for SDOH at a SBHC, and to create a new tool that is available to the public.	Business Process Re-engineering (BRP)	48 students concluded the screening set. Over half the students had positive results on the 2 depression questions (56% and 52%). Three anxiety questions were positive in 52%, 50% and 37%. Both anxiety and depression had the topmost positive responses. depression and anxiety had the highest positive responses.	Evidence states that adolescent health screening is both effective and efficient.	This article provides us with evidence that having a screening tool at a school-based clinic and the services readily available improves issues that otherwise go undetected.

Bhatta et al. (2017)	Level 4 non RCTs 1 site study.	Purpose of this article was to identify risk for depression among children ages 12-18 who attended a SB pediatric clinic via a routine health screening.	The Donabedian model		There is evidence that shows that improved mental health screening in a school-based clinic can lead to prompt diagnosis and early intervention.	
Gruber et al. (2021)	Level 4-qualitative study (analysis)	Purpose of this article was to pinpoint implementors and identify limitations to student access school-based clinics. It allowed insight into what participants (students, teachers) think of health service.	None	4 categories resulted from this article. 1.Students knowledge of SBHC. 2. Teacher's perception and experience with SBHC. 3. Accessing and utilizing SBHC services 4. policymakers' suggestion to improve SBHC and school relationship.	Quality analysis provides evidence on what policymakers understand about a school-based health service. Their perception-if it's something that can be implemented and how to improve it.	Evidence suggests that students and teachers don't fully understand the scope of a school-based health clinic. It highlights how crucial the student/provider relationship is and the school/SBHC relationship is.

MacGeorge et al. (2019)	Level 3-Retrospective cohort review of charts	The possible benefits of SBHC for managing ADHD in adolescents. Compared ADHD adherence in adolescents aged 5-12 in a SBHC vs. continuity care	None	This study showed that SBHC can improve adherence to chronic conditions when compared to continuity clinic.		SBHC has been shown to overcome barriers to the recommended care for children with ADHD
Nahum et al. (2021)	Level 1-Systematic Review	This systemic review helps categorize themes that leads to parental trust or mistrust in SBHC.		This study identified 9 themes that are closely connected to parental trust in SBHC. Those themes included, Trust, Safety, Effectiveness, communication, confidentially, providers, government and authorities, pharmaceutical industry, research and data sharing, school nurses, health workers school staff and their training and credentials.		As providers, understanding the reluctancy of parents towards SBHC will lead providers to better understand parents and more utilization of SBHC.

Raphael et al. (2022)	Level 3-Retrospective cohort study	The purpose of this study was to compare school-based clinics and family planning clinic for prevalence of STIs pre and during Covid-19, rates of treatment and the times (days) it takes from testing to treatment among adolescents (less than 18 y.o) from Jan 1st, 2019, to Dec 31st 2020.	None	A total of 2,439 adolescents were seen during that time period. A total of 1,579 were seen at a SBC and 860 were seen at FPC. 90% of patients received at least one STI test at FPC and 30.1% at SBCs. Positive results were higher in FPC than in SBCs. There was a higher prevalence rate at a school-based clinic than FPC. At SBC, female testing was significantly higher than at FPC. Patients that were seen at the school-based clinic had a higher chance of completing treatment when compared to FPCs. Time from testing to treatment is about 11 days less at SBCs than FPC.		When compared to family planning clinic, school-based clinics are able to provide care more efficiently and effectively
Siddiqui et al. (2022)	Level 1-Systematic Review	The reason for this study was to appraise the efficiency of intervention to better	None	Of the 95 studies that were analyzed. It revealed that vaccination education increases vaccination coverage. The influence		Vaccination education via reminders, visual aids, printable information, gift vouchers, physician training and

		improve the rates of vaccination in adolescents.		of school-based clinics is still uncertain.		reminders all improve vaccination rates. Primary and secondary outcomes both showed uncertainty effects of school-based clinics on vaccination rates.
Silberstein et al. (2019)	Cross-sectional cohort study level 5	To assess the effectiveness of school-based blood pressure screening and to fill in any screening gaps now addressed by the American Academy of Family Physicians.			Blood pressure screening for all school age children in lower socioeconomic areas is crucial as it results in findings of hypertension even in healthy-weight individuals.	This study suggests that low income and minority are limited in their access to healthcare, therefore providing blood pressure screening in a school setting would be beneficial.
Soleimanpour et al. (2021)	Cross-sectional cohort study level 5	The aim of this study was to assess the different characteristics or better understand	None	High frequency users (10X or more) were more likely to do worse in school, use substances such as cigarettes or vaping, drink alcohol. But they	SBHC continues to demonstrate its necessity in the communities especially in low-income communities.	This study shows that older students are frequent users of SBHC for mental health, reproductive health, etc.

	Or retrospective cohort study level 3	the health needs of 9th - 11th graders who use SBHC 10X or more times		were more likely to report mental health issues, chronic sadness, report ever being victimized or bullied. High frequency users also were more likely to be of non-white race and stated they received more reproductive health care.		With an increased use of SBHC, more health disparities will be challenged and addressed.

Appendix D

Table 1

Literature Synthesis

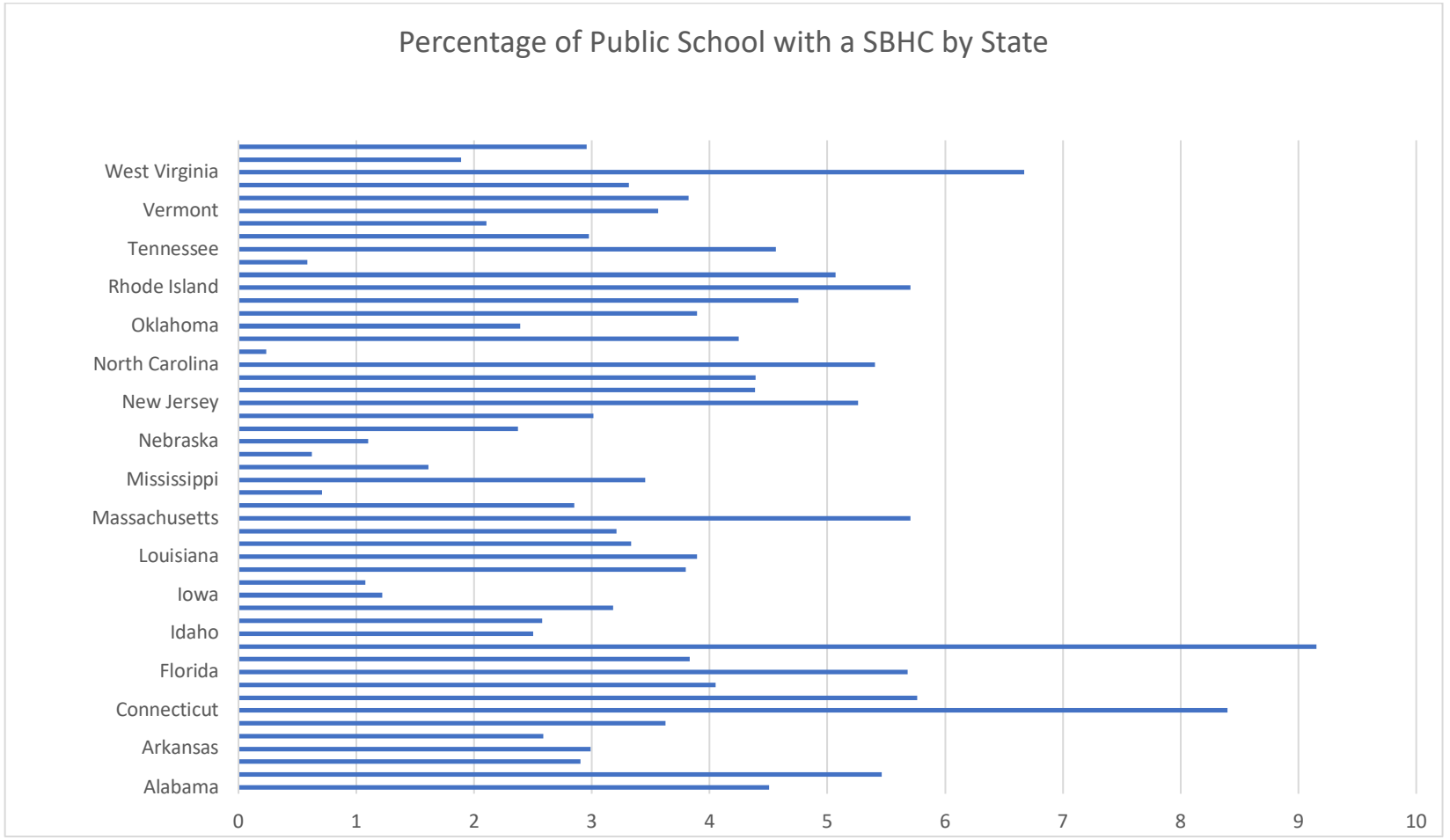
	Studies	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Themes										
Access		x	x	x	x		x		x	
Vaccination				x		x		x		x
Screenings		x	x		x	x	x		x	x
Health management			x		x		x		x	
Improved outcomes					x		x			
Knowledge deficit				x		x				
Lack of trust or community support				x		x				

Note. Themes identified in the literature are designated with X. A: Barton et al. (2019), B: Bhatta et al. (2017), C: Gruber et al. (2021), D: MacGeorge et al. (2019), E: Nahum et al. (2021), F: Raphael et al. (2022), G: Siddiqui et al. (2022), H: Silberstein et al. (2019), I: Soleimanpour et al. (2021).

Appendix E

Graph 1

Environmental Scan



Appendix F

Table 1

Stakeholder Identification

Number	Stakeholder description
1	State Representative
2	State Representative
3	Michigan Department of Health and Human Services Administrator
4	School Board of Education
5	School Administrator
6	School-based Health Alliance of Michigan (SCHA-MI) grant-writer; former health system administrator
7	Health system administrator
8	School-based health center provider

Appendix G

Stakeholder questions for legislators

1. What do you know about SBHCs?
2. Do you think there is a problem with access to care in adolescents in your district?
3. Why do you think SBHCs aren't utilized more?
4. What is one barrier to preventing all schools from utilizing SBHC?
5. What is the main method of funding SBHC?
6. Are there eligibility requirements for funding/ grants (inclusions/ exclusion)?
    1. What are they?
7. Anything else you would like to add?

Stakeholder questions for health department

1. What do you know about SBHCs?
2. Do you think there is a problem with access to care in adolescents in your district?
3. Why do you think SBHCs aren't utilized more?
4. What is one barrier to preventing all schools from utilizing SBHC?
5. What is the main method of funding SBHC?
6. Anything else you would like to add?

Stakeholder questions for school district/board

1. What do you know about SBHCs?
2. What are the needs/gaps that you have identified utilizing SBHC?
3. Does the full grant/ funding go towards the school-based clinic?
4. Have you noticed a difference in graduation rates since the adoption of SBHCs?
5. Do you think this has improved access to care for the students?
6. Anything else you would like to add?

Stakeholder questions for School-Based Health Alliance

1. What efforts are set in place currently to improve SBHC or increase the number of SBHC?
2. What do you think is the main challenge to the development of SBHCs?
3. Where do you get funding for these clinics?

Appendix H

Figure 1

Project Timeline