2016

Immigrants and Refugees as Vulnerable Populations: Considerations for School Based Health Centers

Gaia D. C. Oliver
Wright State University - Main Campus

Follow this and additional works at: https://corescholar.libraries.wright.edu/mph

Part of the Public Health Commons

Repository Citation

This Master's Culminating Experience is brought to you for free and open access by the Master of Public Health Program at CORE Scholar. It has been accepted for inclusion in Master of Public Health Program Student Publications by an authorized administrator of CORE Scholar. For more information, please contact corescholar@www.libraries.wright.edu, library-corescholar@wright.edu.
Immigrants and Refugees as Vulnerable Populations:
Considerations for School Based Health Centers

Gaïa D.C. Oliver

Wright State University Boonshoft School of Medicine

Master of Public Health

July 28, 2016
Acknowledgements

I would like to thank my professors, Dr. Rogers, Dr. Dohn, Dr. Redko, and Lori Metivier, Kiser K-6’s site coordinator Teresa Wendell, as well as my parents (Dr. Joan Chisholm and Gerald Oliver) for supporting me and helping me with this cumulating experience process.
Table of Contents

Abstract ............................................................................................................................................4
Introduction ..................................................................................................................................... 5
Statement of Purpose ...................................................................................................................... 7
Vulnerable Populations ................................................................................................................... 9
   Immigrants and Refugees ............................................................................................................10
School Based Health Clinics ..........................................................................................................19
   The School Based Health Clinic ...............................................................................................19
   Aim of School Based Health Systems .......................................................................................20
School Based Health Clinics: Evidence through Practice ..........................................................20
   Increased Infrastructure and Support for SBHCs .....................................................................23
   Benefits of SBHCs for Children of Immigrants and/or Refugees ...........................................25
Case Study: Kiser K-6 ..................................................................................................................26
   Kiser K-6 Neighborhood Census Tract Data .............................................................................26
   Kiser K-6 Neighborhood Zip Code Data ...................................................................................32
   Kiser K-6 Self-Reporting & Parent Surveys ..............................................................................35
   Dayton Children’s Hospital Community Assessment ............................................................36
Discussion and Recommendations ...............................................................................................37
References ..................................................................................................................................... 40
Appendix A: List of Competencies Met in CE .............................................................................49
Abstract

School based health centers (SBHC) have been shown to benefit domestic populations both in terms of bettering health and bettering academics while being effective over the long term. There is, however, lacking evidence on how they impact immigrant and refugee communities, which are some of the most vulnerable United States communities in terms of health risks. Through discussion of literature, this paper defines and reviews the criteria for vulnerable populations and explains how this term applies to immigrant and refugee populations. School based health centers and their documented health and academic benefits for domestic high risk populations are discussed and extrapolated to the vulnerable immigrant and refugee populations. A case study of Kiser K-6, a school in Dayton, Ohio, is presented to illustrate the potential impact of a school based health center. The population of the neighborhoods in the Kiser K-6 district is described through census and neighborhood data to give a description of the school’s student body. Based on the evidence-based recommendations this manuscript recommends establishing an SBHC at Kiser K-6.

*Keywords:* SBHC, Clinic, Children, Adolescents, Students
Immigrants and Refugees as Vulnerable Populations: Considerations for School Based Health Centers

The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization [WHO], 1948). The health, productivity, and quality of life of a community or country reflects its entire population, not only those who are most numerous or appear to be in the best health. Even in higher income countries it is not uncommon for large sections of a population to be disproportionally vulnerable to negative health outcomes due to social determinants of health (Orlowski, 2014). It is therefore important to work to improve the health of vulnerable populations within a larger population in order to improve the mean health of the population as a whole. Vulnerable populations are defined in public health as “any individual, group, or community whose circumstances create barriers to obtaining or understanding information or the ability to react as the general population” (Nick et al., 2009, p. 1). “Circumstances that may create barriers include, but are not limited to: age, physical, mental emotional or cognitive status, culture, ethnicity, religion, language, citizenship, geography or socioeconomic status” (Nick et al., 2009, p. 1). These barriers can be grouped into three health domains: physical, psychological, and social (Anonymous, 2006); see Figure 1.

---

1 Cited from Iowa Public Health Preparedness Program, 2008: this online resource is no longer available
2 Cited from Iowa Public Health Preparedness Program, 2008: this online resource is no longer available
Figure 1: Three Domains of Barriers

As an example, groups with barriers in the physical domain might children and the elderly. Barriers that fall in the psychological domain include chronic mental conditions such as schizophrenia. Lastly in the social domain vulnerable populations can include immigrants, and refugees (Anonymous, 2006). It is possible that some vulnerable populations may fall into more than one domain of vulnerability, such as children who are immigrants. Protecting the health of vulnerable populations also benefits the larger population of which they are part.

One method of protecting multiple vulnerable populations is the School Based Health Center (SBHC)\(^3\). SBHCs target not only children as a vulnerable population and their health, but also any other vulnerable populations children may fall into, like religious, cultural, physical, cognitive, or geographic groups. Protecting individuals when they are most vulnerable can help to improve health outcomes of a population and increase quality of life for that generation and generations that follow.

---

\(^3\) In this manuscript the term School Based Health Center is used rather than another popular term School Based Health Clinic to reflect inclusion of public health services alongside clinical services in these organizations.
Statement of Purpose

In this paper the aim was to provide a rationale and framework for the creation of SBHCs for schools with immigrant student populations. SBHCs target a vulnerable population children and adolescents: within that vulnerable population, SBHCs target the further vulnerable populations of ethnic and racial minorities. Within a minority population the population of immigrants exists (Figure 2). While most of the literature pertaining to SBHCs reviewed for this manuscript focuses on the United States (U.S.), the literature pertaining to immigration can apply to any immigrant, refugee, or displaced person, and is not specific to immigrants coming to the U.S.

![Figure 2. Potential overlap of vulnerabilities in SBHC population.](image-url)

The definitions for the terms *immigrants*, *refugees* and *displaced persons* are presented in Table 1. *Immigrant* is a broad term which can include refugees and displaced persons. *Refugees* are a subgroup of immigrants and *displaced persons* can be a subgroup of immigrants or refugees, depending upon their reasons for being displaced. For the purposes of this paper, *displaced persons* will be considered as and included within the category of *refugees*. 
Table 1

*Definitions of Immigrants, Refugees, and Displaced Persons*

<table>
<thead>
<tr>
<th>Population</th>
<th>Description</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Immigrant</strong></td>
<td>A person who comes to a country to live there.</td>
<td><a href="#">Immigrant (n.d.)</a></td>
</tr>
<tr>
<td><strong>Refugee</strong></td>
<td>A refugee is someone who fears being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion. A refugee is outside the country of his or her nationality, and is unable to, or unwilling to be protected by that country.</td>
<td><a href="#">World Health Organization (WHO), 2016a</a></td>
</tr>
<tr>
<td><strong>Displaced Persons</strong></td>
<td>In the context of emergencies, displaced people are people who have had to leave their homes as a result of a natural, technological or deliberate event. Displaced people include internally displaced people (people who remain in their own countries) as well as refugees (people who cross international borders).</td>
<td><a href="#">World Health Organization (WHO), 2016b</a></td>
</tr>
</tbody>
</table>

Immigrants, whether they be refugees or not, are vulnerable populations in any country to which they immigrate. Because there is evidence that SBHCs are beneficial for the health maintenance and improvement of vulnerable, high risk, and minority populations, their use would be expected to be beneficial for all populations. The use of SBHCs could specifically benefit immigrant and minority populations’ health. Implementation and widespread use of SBHCs in schools with such populations would likely have a positive effect on the health of the student body and the community in which the school is located.

To achieve this aim I provide background information and a review of the literature that defines and discusses terms that explain target and ideal populations, benefits of SBHCs, and provide a case study of a school which, because of its population, would benefit from implementation of an SBHC.
Vulnerable Populations

Derose, Escarce, and Lurie (2007) combine definitions by Aday (2001) and Flakerud and Winslow (1998) to describe vulnerable populations as “groups of people within a population that are at increased risk for poor physical, psychological, and social health outcomes and inadequate health care” (Derose, Escarce, & Lurie, 2007, p. 1). These authors state that vulnerable populations are at disadvantages with regard to health compared to the general population because of factors outside their control such as a lack of socioeconomic and societal resources, and political and social marginalization (Derose et al., 2007). Ethnic minorities, women, children, the elderly, veterans, lesbian, gay, bisexual, transgender and queer (LGBTQ) groups, and immigrants and refugees are frequently classifiable as vulnerable populations.

SBHCs stand to be most beneficial for vulnerable and high risk populations because they reduce barriers and increase access to care that define vulnerable populations. Further, SBHCs provide social support and mental health treatment that can be invaluable for these underserved populations. Providing health services to these populations is not only important for their benefit, but also for the benefit of the overall population. If a vulnerable population does not have good health care, the larger society of which it is a part misses opportunities for social and economic growth and development (Ekpu & Brown, 2014; Heckman, 2006; Heckman & Raut, 2015). Ill populations utilize more resources than healthy ones; money is spent for healthcare rather than other expenses like education and community enrichment. Higher incidence of illness and prevalence of chronic disease in vulnerable populations can occur without proper health care and lead to further and more serious health problems. Health issues in children can cause parents to miss work if they or their children get sick and need in-home care. Thus parents lose wages and their employers lose productivity. If children become ill or struggle with chronic health issues,
they are more likely to miss school, which could lead them to be not being promoted to the next
grade or not achieve the academic success of which they are capable. The society will ultimately
suffer economically because of loss of parents’ wages and will miss out on future opportunities
because of the lower education reached by the students who miss school (Heckman, 2006;
Heckman & Raut, 2015). In situations where parents do not have insurance or use emergency
rooms in place of primary care physicians when their children are sick, their visits take away
from the intended use of emergency services. This misuse of emergency services puts
unnecessary strain on the resources of emergency rooms to assist people who are experiencing
emergencies like heart attacks, or trauma, or who are in need of immediate medical attention.
The misuse of these resources would be less prevalent if proper preventative health care or
alternatives to emergency room care were accessible, and vulnerabilities of these populations
were being addressed so as to make them less vulnerable.

**Immigrants and Refugees**

As defined in Table 1, a refugee is a person who fears persecution because of their race,
religion, culture, nationality or membership of a particular social group or political option; this
may include displaced persons (WHO, 2016b). In many cases there is crossover between these
two groups of people, and both can fall into the category of a vulnerable population due to a
plethora of factors that accompany migration to a new country. Immigrants and refugees can be a
great boon to the communities they migrate to and live in because they offer knowledge, skills,
experience, and diversity to the communities of which they become part. Not only do they
increase the diversity of an area to which they migrate, but they can introduce their domestic
neighbors to new cultures, experiences, food, and ways of life which ultimately benefit the
overall population by fostering knowledge exchange and cultural diffusion. Furthermore,
immigrants can revitalize communities that may be shrinking due to domestic population
migration, lack of “desirable” jobs (Garrett, 2006, p. 10) or an aging workforce. Immigrants
often start small businesses in the communities to which they immigrate (Welcome Dayton,
2016) which can help to stimulate local economies and create new jobs. Despite a negative
portrayal in the American media (Confessore, 2016), many varying groups, agencies, and
citizens welcome immigrants into their local culture, encourage participation in their
communities, and are proud to have such diversity (Welcome Dayton, 2016). This
encouragement betters both the community its and immigrants as it establishes friendships and
support systems that can help with immigrants’ integration to their new communities, which in
turn can help immigrants to feel safe, valued, and socially connected, which promotes mental
wellbeing and community building.

Challenges immigrants and refugees face when coming to the United States.

Immigrants can face a considerable number of challenges when coming to the U.S. The first
challenge is the reason they are immigrating. The circumstance of becoming and being a refugee
is often traumatic, as they immigrate due to forces beyond their control (war, famine, natural
disaster) which compel them to leave. These forces may leave mental or physical injuries on the
people who flee, causing high stress which can lead to many health concerns while they are
immigrating and once they have arrived in their new country (Garrett, 2006). A refugee’s final
destination is often not their first stop on their immigration journey. It is not uncommon for
refugees to start off in refugee camps on their home continent or in a country that borders their
home country, awaiting a potential return to their homes and/or processing by international
agencies. Refugee camps often can be dangerous and stress-inducing due to overcrowding, lack
of resources, or poor security inside the camp (War International, (n.d.); Wilson, 2011); these
factors can lead to additional trauma. In cases of child refugees, schooling and education are additional factors to be considered. Because of the different reasons for which a refugee might be in a refugee camp, the amount of time spent living in the camp can be weeks to years. Not all refugee camps provide schools for their children and adolescents to continue education while living in the camp (Schmidt, 2013; Solis, 2016). Consequently, months to potentially years of education are lost, putting refugee children at a disadvantage. Resettlement services are typically available for refugees in formal recipient countries, and can include educational, housing, and food assistance (National Immigration Forum, 2010).

Immigrants who choose to go to a new country, as opposed to those who are refugees, experience less outright trauma and are more in control of factors associated with their entire immigration process. However, they still leave much of what is familiar to them (language, food, culture) in their countries of origin and start over in their new countries with fewer resources. In contrast to refugees, immigrants are less likely to receive support or resettlement services like educational, housing, or food assistance because they chose to immigrate instead of being forced from their homes (National Immigration Forum, 2010).

Further challenges tend to arise once immigrants and refugees settle in the U.S. Issues such as securing safe housing, learning and speaking a new language, transportation, obtaining work, prejudice, adjusting to a new culture, raising their children to succeed in school, and other issues often present themselves (Nuñez, 2014). One of the first things immigrants encounter when moving to the U.S. is American culture. Their sudden and constant exposure to it can cause culture shock due to how different it can be from the cultures of their countries of origin. Culture shock is defined as a sense of confusion and uncertainty sometimes with feelings of anxiety that may affect people exposed to an alien culture or environment without adequate preparation.
(Culture shock, n.d.). Culture shock has the potential to make immigrants feel isolated in their new homes and homesick for their countries of origin (C. Bitwayiki, personal communication, March 19, 2016; Garrett, 2006). This isolation and homesickness can impair health or prevent integration into a new community and culture, which can make more it difficult to adjust and live healthily in their new country.

When first coming to any new country, finding housing can be difficult, especially if immigrants do not already have family or friends in the areas in which they settle. Negotiating with landlords about rent or finding a less expensive dwelling to rent or purchase can not only be difficult because of monetary issues, but also because of language barriers (Garrett, 2006; Norman, 2009; Nuñez, 2014). Additionally, because of language barriers, immigrants and refugees are frequently victims of unsafe housing and landlord abuse like the overcharging of rent (Garrett, 2006). Furthermore, if immigrants come to the U.S. through a sponsoring agency, that agency might help them for a short period by paying rent on their behalf and assisting with food. However, it may not be clearly stated or correctly understood that the sponsoring agency will not permanently support them (C. Bitwayiki, personal communication, March 19, 2016). This can lead to confusion and unfortunate circumstances where dependent immigrants who do not yet have methods to support themselves in the U.S. are left without a way to pay for food and housing (C. Bitwayiki, personal communication, March 19, 2016). Language barriers are central to many other challenges faced by immigrants and refugees: most interactions come with the necessity of learning and speaking a new language (Nuñez, 2014). If immigrants and refugees immigrate to a new country with low proficiency in the language of that country, (coming to the U.S. with low English proficiency for example) they may not be perceived as competent or educated, find a job, participate fully in school, make new social connections, or feel safe
(Garrett, 2006). This is especially true when dealing with legal issues, crime reporting, and health care (Nuñez, 2014).

A further language-related challenge is education. Education is not just a challenge for those who seek to continue education in the U.S., but also for both those who have low educational attainment in their countries of origin (Garrett, 2006), or who have high educational attainment but cannot use it in the U.S. (Yildiz, 2009). A person seeking to continue education in their new country may receive a grade level placement based on age rather than level of completed education (Nuñez, 2014). This may be problematic for them in class, as their teachers may not properly aid them because of their inability to communicate on the same level as the rest of their class in English; in turn, teachers may incorrectly assume these children are less capable or less interested in learning. This is especially problematic for children who have been educated in refugee camps where there is no consistent curriculum and who may often be missing years of schooling (Schmidt, 2013; Solis, 2016). For example, a 14-year-old refugee student may only have a second grade education but may be placed in eighth or ninth grade.

Those who are highly educated in a different language or with credentials not recognized as sufficient by the U.S. to work may be unable to find jobs because of the differences in their educations and educations offered in the U.S. (Yildiz, 2009; Garrett, 2006). This introduces the challenge of finding work in the U.S. Immigrants are expected to quickly show proof that they are looking for employment or find jobs and earn income in their new countries sometimes to fulfill social service requirements (N. Rogers, personal communication, July 19, 2016). Finding and keeping employment has the potential to be a challenge because of language barriers, low language proficiency, and institutional and personal bias (Camarota, 2015; Confessore, 2016; Murphy, 2011). Prejudice and stereotypes can cause employers to be hesitant to hire an
immigrant or refugee who does not have the language skills of a potential domestic employee (Garrett, 2006). Furthermore, low language skills can make it difficult to interact with employers, fellow employees, and clientele. With regards to prejudice in the U.S., there exists considerable animosity towards immigrants, and the idea that they might be taking jobs that would otherwise go to American citizens is a sentiment that is repeatedly discussed by politicians and the media (Camarota, 2015; Confessore, 2016; Murphy, 2011). This sort of prejudicial thinking can negatively influence employers who have the opportunity to hire immigrants, as well as potential co-workers who may treat immigrant co-workers rudely or unfairly. This discrimination can lead to situations where fewer immigrants are able to find and keep jobs because their potential employers are biased against them and their work environments are unwelcoming. These situations can lead to short-term and life-long lower income, lower quality of living, living in poverty, and the potential to severely negatively impact not only immigrant safety and integration into their new societies, but also immigrant health.

Outside of language and prejudice-related problems, access to and staying employed can be impacted because of transportation (Garrett, 2006). Being able to travel to and from a job and transportation type are important factors that can determine if an immigrant is able to obtain work. If there are no employers hiring in the immediate area where an immigrant family lives, transportation to employment opportunities is needed. If no public transportation system exists in the area where the immigrant family lives, they will have to rely on walking or on private transportation to commute to work. Private cars can be expensive to purchase and maintain: for some immigrants who must prioritize food, housing and clothing over the costs of a car, it can be unaffordable. Multiple families may opt to share a car or carpool together, but this situation only works when they all work near each other and it is not ideal because work schedules can vary
Even when public transportation is available, bus and train schedules can be unreliable or irregular, which can prevent immigrants from having reliable transportation to and from work.

**Immigrant and refugee health.** When immigrant populations are undervalued in their communities, their health and wellbeing is undervalued as well. Immigrant health is important for a variety of reasons, but can be starkly different from domestic populations because of environmental factors from their home countries, different health risk factors because of cultural or life history, mental health challenges due to high-stress situations because of experiences before or during immigration, and feelings of isolation in a new country, as well as many other influences (Lynch & Smith, 2005). Immigrants may not view risks to health in the same way as domestic populations or domestic physicians and have not usually had access to more than basic preventative health care; this can discourage them from seeking help for health troubles until a condition becomes chronic or advanced. Additionally, immigrants may approach disease and health risks differently than domestic populations. For example: domestic populations are taught to recognize smoking or tobacco use as a health risk for cancers, heart disease, and respiratory and pulmonary problems later in life: immigrant populations may regard tobacco use (smoking cigarettes or using hookah, for example) as important cultural practices that strengthen bonds between those who smoke, and build comradery (O. Tahtamooni, personal communication, March 19, 2016). The health risks are still present despite cultural connotations associated with tobacco use, but a domestic population can understand written warnings on tobacco products and may have had tobacco education which makes them value warnings about health risks associated with tobacco use, whereas an immigrant population may not have such knowledge, be able to read such warnings, and may not value them if they are aware of them. Additionally, where
domestic populations are encouraged to be more aware of their health through a number of programs associated with prevention such as healthy eating campaigns, injury prevention, safety precautions, and school health programs, immigrants may have never encountered such programs or may not be able to understand such programs in their new countries due to language barriers. This could lead immigrants to be both unaware of the benefits of such programs as well as unaware of the health risks these programs are designed to help prevent. Moreover, many immigrants blame the country to which they immigrate for causing them to become sick, stating that they and their families did not have these medical conditions when in their home countries (C. Redko, personal communication, February 3, 2016). Immigrants may not have recognized these health risks in their countries of origin. For example, some immigrants come to the U.S. having undiagnosed diabetes: once diagnosed in the U.S., they claim they never had diabetes until arriving in the U.S. Therefore, their diabetes is the fault of the U.S. lifestyle, as opposed to genetics or other factors (C. Redko, personal communication, February 3, 2016).

In addition, the U.S. has a very peculiar health care and health insurance system that is often difficult to navigate and use. The goal of passing the Affordable Care Act (ACA) was to make health care more accessible and affordable to large portions of the population that had been previously uninsured, including legal and lawfully present immigrants in the U.S. (National Immigration Law Center, 2014; Medicare and Medicaid Services, n.d.). Unfortunately, despite the passing of the ACA, the system continues to be difficult to understand. This convoluted system is a challenge for domestic populations to use, which suggests that it may be more difficult for immigrant populations to navigate (Brust, 2013). For newly arriving immigrants who may have health concerns and little money, it can be difficult and potentially financially
catastrophic to obtain medical care or treatment in the U.S. due to the high cost of health care, even with health insurance.

**Health of children and adolescents in immigrant and refugee families.** Given the evidence illustrating the vulnerability of children and immigrants, the children of immigrants or children who are immigrants themselves have more vulnerable health than their parents or peers by merit of being categorized within two vulnerable populations (children and immigrants)(see Figure 1). Immigrant children and adolescents have similar health risks and concerns as their adult parents because they are immigrants, but also face the different health risks and challenges associated with being dependent minors, and being in vulnerable and impressionable points in their lives developmentally. Children are tasked with the challenges of navigating new schools, trying to learn and participate in a foreign language, and coping with stresses they may encounter from being different, which may even include bullying (Rivara & Le Menestrel, 2016). Also, in countries that have preventative care infrastructure, some immigrants from countries where such infrastructure is not present may not utilize preventative health care options (dentists, vision checks, disability testing, mental illness testing, etc.) because they are more accustomed to reactive health care characterized by only visiting health care providers once they are ill.

These stresses and risk factors make it important to focus closely on the health of immigrant children and adolescents because preventative and protective measures can help to maintain good health in such vulnerable populations. Additionally, many parents may not be familiar with using health insurance and large healthcare systems. An SBHC offers solutions which have the potential to benefit both parent and child.
**School Based Health Center/Clinic**

Building upon the description of vulnerable populations and how and why children, immigrants, children of immigrants, and immigrant children are categorized into these populations, this section discusses literature that provides evidence for the role of SBHCs in addressing health issues for vulnerable and high-risk populations such as students from ethnic and racial minorities. There is a lack of information about how SBHCs specifically impact the immigrant and refugee student populations that may be included in the ethnic and racial groups in the studies.

**The School Based Health Clinic**

SBHCs are health clinics, much like an urgent care clinic or a physician’s office, located in schools with the aim to provide health care to the student population of the school. They differ from a typical school nurse’s office because of the increased range of services offered and the increased and varied personnel that staff them (Zimmerman, Campisteguy, Parks, & Richardson, 2011). Where a school nurse’s office might have one nurse employee, an SBHC can be staffed by nurse practitioners, doctors of nursing practice, licensed practical nurses, registered nurses (RNs), physician’s assistants, or physicians who can conduct well child visits, physicals, and chronic disease monitoring. Allied and public health professionals can also work through the center to provide assorted other medical services including dental health services, health education and promotion, and reproductive health services to the students at the school over the entire school week and occasional weekends. In fact, some SBHCs have hour requirements for staff depending on their training, such as 20 hours a week for a primary care provider, 20 hours for an RN, and 30 hours for support staff such as office assistants or medical secretaries (Nystrom & Prata, 2008). Furthermore, SBHCs (as opposed to a standard nurse’s office) offer a
type of social support for the students at the schools, which not only has been shown to benefit their physical and mental health, but can assist them with grade promotion (moving from one grade to the next) and graduating (McCord, Klein, Foy, & Fothergill, 1993).

**Aim of School Based Health Systems**

The aim of an SBHC is to provide a range of medical treatment and preventative services to the students of the school including immunizations, sports physicals, mental health counseling, nutrition and diet counseling, treatment of minor illnesses and injuries, and monitoring of chronic conditions like asthma; some SBHCs even offer dental programs and reproductive health counseling. A side effect of this on-site medical treatment and health monitoring is perceived support on the part of the students; students at SBHC schools reported “feeling that adults supported them in succeeding” (McCord et al., 1993; Strolin-Goltzman, Sisselman, Melekis, & Auerbach, 2014, p. 87). A secondary goal of SBHCs is to promote academic performance by improved access to health care for underserved youth at risk (Strolin-Goltzman et al., 2014). When youth remain healthy they perform better in school and better meet their potential to achieve higher academic success. The perceived social support offered by these centers’ students is reported to make their students feel more connected to the school, which leads to students enjoying school more and being more motivated to perform well academically (Strolin-Goltzman et al., 2014).

**School Based Health Clinics: Evidence through Practice**

Across the literature, high risk students are described as those who experience external factors that could prevent them from coming to school and from not succeeding academically. Such factors include increased health risk due to socioeconomic reasons, low attendance rates, behavioral issues, or dropping out of school due to failing grades. These risks can overlap: for
example, some students have poor attendance rates because of chronic health issues which
prevent them from coming to school. SBHCs have been shown to benefit the general population
of students that they serve, but their greatest impact is with high risk students (McCord et al.,
1993; Parasuraman & Shi, 2014; Walker, Kerns, Lyon, Bruns, & Cosgrove, 2010). The benefit
of SBHCs for high risk populations suggests that they also would be of similar benefit for
vulnerable populations, such as immigrants and refugees. Vulnerable populations within the
youth population face disadvantages in health care and access that their less vulnerable peers do
not face because of their socioeconomic, ethnic, and immigrant status in addition to any
disability or membership in other vulnerable categories.

SBHCs are not a new concept: they have been a growing concept since the SBHC
movement started in the mid-20th century. They are an established evidence-based practice
supported by a growing body of literature. A few selected studies are reviewed here to highlight
some of the major benefits of SBHCs.

In a study about SBHC use in Greensboro, North Carolina (McCord et al., 1993), high
risk students who used the SBHC had fewer absences, were more likely to stay in school, and
more likely to be promoted to the next grade or graduate as opposed to those who did not use it,
or those who registered but did not use it. Within the high risk students in the study, the Black
male subgroup, considered the highest risk group for drop out, benefited the most from SBHC
use (McCord et al., 1993). In a more recent study conducted over a course of five semesters in
the Seattle school district, SBHC users who received mental health treatment had significantly
more rapid increases in their grade point average (GPAs) than non-users; users who received
SBHC medical treatment had higher increases in attendance than non-users (Walker et al., 2010).
This study also reported that a likely secondary benefit to SBHCs was that children with
respiratory illnesses that could have kept them home from school were able to be treated in school, thus keeping them healthy and lowering their rate of absences. A third study (Strolin-Goltzman et al., 2014) focused on SBHCs effects on students’ school connectedness as defined by the Centers for Disease Control and Prevention (CDC): “the belief held by students that adults and peers in the school care about their learning as well as about them as individuals” (CDC, 2009, p. 3). School connectedness is positively associated with better grades and attendance, and is protective against health and behavioral risk (Strolin-Goltzman et al., 2014; Hanson & Austin, 2003; Abbott et al., 1998; McNeely & Falci, 2004; Resnick, Bearman, & Udry, 1997). The researchers found that an SBHC increased overall school connectedness in its user population more than in its non-user population. SBHC users reported enjoying school more than non-users, were more attached (felt safer, had more respect, felt connected through activities) to their school than non-users, had significantly higher GPAs than non-users, and were promoted to the next grade at a higher rate than non-users (Strolin-Goltzman et al., 2014). The consolidated findings of the three studies discussed above are listed in Table 2 for easier comparison.

---

4 This definition is carried over from previous work by the Centers for Disease Control and Prevention (CDC) (2009, 2015).
### Table 2
Comparing SBHC Studies

<table>
<thead>
<tr>
<th>Study:</th>
<th>Walker et al., 2010</th>
<th>Strolin-Goltzman et al., 2014</th>
<th>McCord et al., 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population in Study</td>
<td>n= 3,298</td>
<td>n=793</td>
<td>n=322</td>
</tr>
<tr>
<td>Clinic Non-user/ Registered N</td>
<td>n= 1,861</td>
<td>—</td>
<td>n=133</td>
</tr>
<tr>
<td>Clinic User N</td>
<td>n= 444</td>
<td>n= 793 (across several schools)</td>
<td>n=159</td>
</tr>
<tr>
<td>Registered (but non-user or excluded from study)</td>
<td>n= 993</td>
<td>—</td>
<td>n=30</td>
</tr>
<tr>
<td>Study Design</td>
<td>Longitudinal (2.5 years)</td>
<td>Comparative</td>
<td>Longitudinal (1 year)</td>
</tr>
<tr>
<td>Grade Levels in Study</td>
<td>High School (9th – 11th graders)</td>
<td>Elementary – 233, Middle – 110, High School – 450</td>
<td>Middle/High School (12-20 years)</td>
</tr>
</tbody>
</table>

**Findings for SBHC Users (as compared to non-user/non-registered)**

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Higher Rate for users</th>
<th>No Difference</th>
<th>Higher Rate for users</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>Increased/ Higher &amp; Faster for users</td>
<td>Higher for users</td>
<td>—</td>
</tr>
<tr>
<td>Tardiness/ Absences</td>
<td>—</td>
<td>Users more tardy</td>
<td>Lower rates of absences for users</td>
</tr>
<tr>
<td>Discipline &amp; Referrals &amp; Suspension</td>
<td>Higher Rate of Referrals</td>
<td>—</td>
<td>Users more likely to be suspended</td>
</tr>
<tr>
<td>Stay in School, vs. Drop Out</td>
<td>—</td>
<td>—</td>
<td>Users more likely to stay in school</td>
</tr>
<tr>
<td>School Bonding</td>
<td>—</td>
<td>Higher</td>
<td>—</td>
</tr>
<tr>
<td>Grade Promotion &amp; Graduation</td>
<td>—</td>
<td>More Likely</td>
<td>More Likely for users</td>
</tr>
</tbody>
</table>

**Increased Infrastructure and Support for SBHCs**

SBHCs first appeared in the 1970s: through evidence gathering from different models they have grown and expanded through the end of the 20th century. At the start of the 21st century SBHCs gained momentum, expanding further and becoming more prevalent than ever before. In 2004 the School Based Health Care Policy Program (SBHCPP) was launched by the W. K. Kellogg foundation to build infrastructure and support through policies, associations, funding
and collaborative partners to make SBHCs more feasible and sustainable (Zimmerman et al., 2011). The program resulted in two important pieces of legislation: The Children’s Health Insurance Program Reauthorize Act (CHIPRA) and The Patient Protection and Affordable Care Act (ACA) (Zimmerman et al., 2011) (see Table 3). The program also empowered several national associations dedicated to increased number, quality, and performance of SBHCs.

Table 3

Recent Infrastructure and Support Developments for SBHCs

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Children’s Health Insurance Program Reauthorize Act (CHIPRA)</td>
<td>Defined SBHCs and authorized SBHCs to receive payment for services.</td>
</tr>
<tr>
<td>The Patient Protection and Affordable Care Act (ACA)</td>
<td>Created a federal grant program for SBHC capital improvements which means construction renovation and equipment and other support funds.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>National Associations and Divisions Invested in SBHCs</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center for School, Health and Education American Public Health Association (APHA) Division of Public Health Policy and Practice</td>
<td><a href="http://www.schoolbasedhealthcare.org/index.php/about/the-centers-home-at-apha/">http://www.schoolbasedhealthcare.org/index.php/about/the-centers-home-at-apha/</a></td>
</tr>
<tr>
<td>Center for Health and Healthcare in Schools</td>
<td><a href="http://www.healthinschools.org/">http://www.healthinschools.org/</a></td>
</tr>
<tr>
<td>American School Health Association (ASHA)</td>
<td><a href="http://www.ashaweb.org/">http://www.ashaweb.org/</a></td>
</tr>
<tr>
<td>National Assembly on School Based Health Care (NASBHC)</td>
<td><a href="http://www.nasbhc.org/site/c.pjJ0J6MJqE/b.3826861/k.BDD2/Home.htm">http://www.nasbhc.org/site/c.pjJ0J6MJqE/b.3826861/k.BDD2/Home.htm</a></td>
</tr>
<tr>
<td>Centers for Disease Control and Prevention (CDC) Division of Adolescent and School Health (DASH)</td>
<td><a href="http://www.cdc.gov/healthyouth/">http://www.cdc.gov/healthyouth/</a></td>
</tr>
</tbody>
</table>

Sources: Zimmerman et al., 2011; Strozer, Juszczak, & Ammerman, 2010

CHIPRA and the ACA have made sustainable financial models for SBHCs possible, adding patient revenue through third party reimbursement to the traditional grant funds (School-Based Health Alliance, n.d.). Some SBHCs utilize contributions from non-profit agencies,
private partners, local boards of health, and boards of education, and build working partnerships with local health systems, hospitals, and federally qualified health centers (FQHCs) (Health Foundation of Greater Cincinnati, 2015). Some districts include their SBHCs in community learning centers or community schools, giving the SBHC the ability to serve the greater community in addition to its students: this maximizes patient load and use of services (Health Foundation of Greater Cincinnati, 2015).

**Benefits of SBHCs for Children of Immigrants and/or Refugees**

Immigrant children and the children of immigrants stand to benefit from SHBCs because of the multitude of preventative and medical screening and services they can offer. As previously discussed, SBHCs can offer substantial social support to children and adolescents, as well as provide health services, and foster academic improvement in students. This is important for domestic students, but for students who are immigrants or are children of immigrants this support is more important because of the potential for lack of support elsewhere in their lives (Oxman-Martinez et al., 2012). As new students to a school, or as students whose families may not have lived in the area (let alone the country) for a long period of time, the social support can help them feel more confident about going to school (McCord et al., 1993; Strolin-Goltzman et al., 2014), which can encourage them to be invested in learning and succeed. Additionally, SBHC staff is likely to create a rapport with students, which provides the students with adults they can feel safe around and whom they can trust. This relationship between students and SBHC staff can encourage the children to report if they are going through difficulties, are dealing with abuse, or living in dangerous conditions (McCord et al., 1993; Strolin-Goltzman et al., 2014).

Having conveniently located healthcare services removes stress from immigrant parents who may encounter barriers to securing such services for their children such as long work hours
or language barriers. These barriers make it difficult to navigate the logistics of obtaining a primary care physician (PCP) and may cause parents to resort to using emergency rooms unnecessarily (Adams & Johnson, 2000). Other aspects of SBHCs that may specifically benefit children who are immigrants or children of immigrants are on-site public health services. Public health services can include health education and promotion, which can teach children about preventative health to ensure better quality of health for themselves and their families now and in the future. Public health services can also include reproductive health services and mental health counseling for students to make them aware of different aspects of their health and wellbeing, and of ways to protect it. Lastly, because of the on-site nature of SBHCs, these lessons would not interrupt regular schooling: health service professionals would be available in the school to provide this education (Zimmerman et al., 2011). SBHCs offer children an opportunity to learn about basic health care behaviors which can keep them healthy and in school. This helps address common concerns like poor hygiene, poor eating habits, and oral hygiene onsite and as part of the basic education that students can share with their parents and implement in their communities.

**Case Study: Kiser K-6 School**

The case study section of this paper provides a description of Kiser K-6, a school in Dayton, Ohio (USA) that could benefit from having an SBHC. This section of the paper will provide and discuss demographic information and census tract data for the Kiser school district to illustrate why its student population qualifies as vulnerable or high risk. This builds the case for locating an SBHC at Kiser. Based on information from census tract data, zip code data, surveys of parents and students, and a community health needs assessment from Dayton Children’s Hospital, the health needs and risks of the school’s population are discussed.
Kiser K-6 Neighborhood Census Tract Data

Kiser K-6 school located in Dayton, Ohio (USA) (Figure 3) is an exemplary candidate for implementation of an SBHC. Dayton has a population of an estimated 143,355 people and encourages immigrants to live there, as evidenced by its Welcome Dayton community initiative (Welcome Dayton, 2016) and large immigrant population. Although the domestic-born population of Dayton has decreased since 2009, the immigrant population has grown by over 50% (Welcome Dayton, 2016). Like the city in which it is located, Kiser has a diverse student community. The school operates as a neighborhood school center, one of five in the Dayton Public School (DPS) system. A Neighborhood School Center (NSC) is a school that functions as a community center and the center for the redevelopment of the neighborhood in which it is located (Dayton Public Schools, 2015). The objective behind NSCs is that, with the school as a center for its community, the academic and social success of the students will become the shared responsibility and collaborative goal of both the community and school.

Figure 3. Location of Kiser Elementary School in relation to City of Dayton.
Source: Google Maps, 2016
Kiser K-6 pulls students from three zip code areas: 45404 (most), 45414 (partial), and 45431 (partial) and five census tracts (0017.00, 0018.00, 0806.00, 0807.00, and 0903.02). Using 2015 census tract data from the Financial Institution Examination Council (FFIEC) Geocoding/Mapping System (Federal Financial Institution Examination Council [FFIEC], 2015) and zip code data from the Advameg Inc.’s City-Data.com website (Advameg Incorporated, 2013), descriptive population information about the residents of the Kiser K-6 school district is displayed in Tables 4 and 6. There is some overlap of populations in the zip codes and the tracts: zip code 45404 encompasses census tracts 0017.00, 0018.00 and a portion of 0903.02; zip code 45414 encompasses a portion of census tract 0807.00; and zip code 45431 encompasses a portion of 0903.02. Because a majority of the Kiser K-6 district is located in census tracts 0017.00 and 0018.00, the demographic information of those tracts may be more representative of the student body of Kiser K-6 than census tracts 0806.00, 0807.00 and 0903.02. This is because although portions of tracts 0806.00, 0807.00 and 0903.02 fall into the district boundaries, the majority of those tracts lay outside of its boundaries.

---

5 City-Data.com pulls its data from multiple public and private sources which it does not list on its website. FFIEC geocoding system uses U.S. Census data.
Table 4

*Census Tract Comparative Data*¹

<table>
<thead>
<tr>
<th>Census Tract</th>
<th>0017.00</th>
<th>0018.00</th>
<th>0806.00</th>
<th>0807.00</th>
<th>0903.02</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portion of tract in Kiser School District</td>
<td>Entire</td>
<td>Entire</td>
<td>Northeast Section of tract</td>
<td>Southeast Section of tract</td>
<td>Southwest section of tract</td>
</tr>
<tr>
<td>Tract income level²</td>
<td>Low</td>
<td>Low</td>
<td>Middle</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>2010 Tract Median Family Income</td>
<td>$12,054</td>
<td>$29,494</td>
<td>$55,352</td>
<td>$39,388</td>
<td>$42,759</td>
</tr>
<tr>
<td>2015 Estimated Tract Median Family Income</td>
<td>$12,470</td>
<td>$30,516</td>
<td>$55,207</td>
<td>$40,756</td>
<td>$44,246</td>
</tr>
<tr>
<td>% below Poverty Line</td>
<td>61.58</td>
<td>44.29</td>
<td>21.06</td>
<td>16.73</td>
<td>17.35</td>
</tr>
<tr>
<td>Tract Population</td>
<td>763</td>
<td>6117</td>
<td>1573</td>
<td>2135</td>
<td>6296</td>
</tr>
<tr>
<td>Tract Minority Population³</td>
<td>168</td>
<td>1491</td>
<td>70</td>
<td>78</td>
<td>1026</td>
</tr>
<tr>
<td>Tract Minority %</td>
<td>22.02</td>
<td>24.37</td>
<td>4.45</td>
<td>3.65</td>
<td>16.30</td>
</tr>
<tr>
<td>Median House Age (Years)</td>
<td>57</td>
<td>70</td>
<td>61</td>
<td>42</td>
<td>43</td>
</tr>
</tbody>
</table>

1. Data from FFIEC, 2015, definition from FFIEC, 2014.
2. If the Median Family Income % is < 50% and > 0 then the Income Level is Low.
   If the Median Family Income % is >= 50% and < 80% then the Income Level is Moderate.
   If the Median Family Income % is >= 80% and < 120% then the Income Level is Middle.

**Income level.** As shown in Table 4, Kiser K-6 pulls students from a varied population spread across five census tracts. Focusing on income level for the tracts Table 4 shows that two
of the five census tracts are categorized as low income level tracts, one is a moderate income level tract and two are middle income level tracts. Tracts can be defined as low, moderate, middle, upper, or not known when compared to the national median. Low income tracts are defined as census tracts where the median family income percentage is less than 50% but above 0% of the FFIEC’s estimated median family income (FFIEC, 2014). Moderate tracts are those were the median family income percentage is greater than or equal to 50% but less than 80%, and middle tracts are those where the median family income percentage is greater than or equal to 80% but less than 120% (FFIEC, 2014). These levels are indicative of how much an average family in that area has at its disposal to pay for food, shelter, clothing, and medical care. Income level is also reflected by the estimated and recorded median incomes of families in each tract (also shown in Table 4).

**Poverty.** Living in poverty puts a population at a higher risk of experiencing negative environmental factors such as violence, less safety, and dangerous living conditions, among others (Berrebi, 2015; FFIEC, 2014). As a result, living in poverty can have a negative impact on individual health as well as the health of a population. People living in poverty are at increased risk for shorter lives, chronic illnesses, poor mental health, and decreased quality of life (Berrebi, 2015; FFIEC, 2014; WHO, 2016c). According to the United States Census Bureau, the poverty rate of the U.S. population in 2014 was 14.8% (2015 data are not yet available). Merriam-Webster dictionary defines the poverty line as “the basic level of income that makes it possible for a person to pay for basic food, clothing and shelter” (poverty line, n.d.). The U.S. government defines poverty specifically using a threshold adjusted for the number of people in a household (United States Census Bureau, 2015); standards for 2015 are presented in Table 5. As seen in Table 4, in all five census tracts the percentage of people who live below the poverty line is
higher than the national average, and in the case of tract 0017.00 more than half the population lives below the poverty line. Residents in the Kiser K-6 district are at risk for poor health due to such large percentages of the population living below the poverty line.

Table 5

*Poverty Thresholds for 2015 by Size of Family and Number of Related Children under 18 Years*

<table>
<thead>
<tr>
<th>Size of family unit</th>
<th>Related children under 18 years</th>
<th>Eight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>One</td>
</tr>
<tr>
<td>One person (unrelated individual).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 65 years..................</td>
<td>12,331</td>
<td></td>
</tr>
<tr>
<td>65 years and over..............</td>
<td>11,367</td>
<td></td>
</tr>
<tr>
<td>Two people.....................</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Householder under 65 years....</td>
<td>15,871</td>
<td>16,337</td>
</tr>
<tr>
<td>Householder 65 years and over.</td>
<td>14,326</td>
<td>16,275</td>
</tr>
<tr>
<td>Three people...................</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Four people....................</td>
<td>18,540</td>
<td>19,078</td>
</tr>
<tr>
<td>Five people....................</td>
<td>24,447</td>
<td>24,847</td>
</tr>
<tr>
<td>Six people....................</td>
<td>29,482</td>
<td>29,911</td>
</tr>
<tr>
<td>Seven people..................</td>
<td>33,909</td>
<td>34,044</td>
</tr>
<tr>
<td>Eight people...................</td>
<td>39,017</td>
<td>39,260</td>
</tr>
<tr>
<td>Nine people or more...........</td>
<td>43,637</td>
<td>44,023</td>
</tr>
</tbody>
</table>

Source: United States Census Bureau, 2015

**Minority populations.** As defined by the U.S. Census, minority populations include people identifying as one or more of the following categories: American Indians, Asian/Hawaiian/Pacific Islander Populations, Blacks, Hispanic or Other/Two or more races.

While there is not a separate category for immigrants or refugees in the census bureau’s data, immigrants and refugees are typically included in these minority categories. As shown in Table 4, each of the five tracts in the Kiser district have minority populations. However, the two tracts that comprise the majority of the district (0017.00 and 0018.00) have a notably larger percentage
of minority residents than the other three (0806.00, 0807.00, 0903.02) and the state of Ohio (Exner, 2016). Minority populations tend to be among populations that are more severely impacted by poverty and its adverse health effects (Berrebi, 2015).

**Age of houses.** The age of houses in a geographic area can have a large impact on the health of the population that resides in them, especially considering the amount of time people spend inside their homes. Older homes, especially those built before 1978, have a higher risk of having lead based paints in them (United States Environmental Protection Agency, 2016). Lead is known to cause health problems when ingested in significant amounts, especially in children and infants (United States Environmental Protection Agency, 2016). The ingestion of lead can occur when paint chips containing lead based paint are directly consumed, or when dust from lead based paint is inhaled. Older homes can have additional health risks including accumulation of radon gases in areas where it is endemic (which can cause heart problems and cancer), pipes containing lead, cancer-causing asbestos, and faulty wiring (Old House Web, 2016). As illustrated in Table 4, all tracts in the Kiser K-6 school district have houses with a median age over 35 years. This indicates that a large number of houses in the district were built before 1978 and could have a negative impact on the health of their residents. Given the percentage of residents living below the poverty line in these areas, housing maintenance to solve such environmental health risks may not be financially feasible.

**Kiser K-6 Neighborhood Zip Code Data**

Zip code data are available for the neighborhoods in the Kiser K-6 district and provide another representation of the district’s student body. Zip codes 45404, 45414, and 45431 are all located within the Kiser K-6 school district boundaries. The majority of the Kiser K-6 district is in zip code 45404 and only small sections of the district are in zip codes 45414 and 45431.
Therefore, the majority of the student body is expected to reflect the demographic information in zip code 45404. While these zip code data discuss the same population as the census tract data already discussed, each offers information on different variables. Looking at both data types provides a better perspective on where in the district trends in income, poverty, unemployment, age of houses and minority population distribution exist. Data for zip code variables are presented in Table 6.

Table 6

*Comparative Zip Code Data*¹

<table>
<thead>
<tr>
<th>ZIP CODES</th>
<th>45404</th>
<th>45414</th>
<th>45431</th>
<th>State Average (when applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment %</td>
<td>23.5% (significantly above state avg.)</td>
<td>14.3% (above state avg.)</td>
<td>8.9% (above state avg.)</td>
<td>2013: 6.7% - 7.4% 2014: 5.1% - 6.5%</td>
</tr>
<tr>
<td>% of residents with income below poverty level (2013)</td>
<td>36.2%</td>
<td>18.4%</td>
<td>11.2%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Households receiving SNAP² benefits</td>
<td>1,506</td>
<td>1,637</td>
<td>1,099</td>
<td>No data given</td>
</tr>
<tr>
<td>Family households w/ FHH³</td>
<td>1,434 of 8,155</td>
<td>3,101 of 17,145</td>
<td>3,014 of 21,655</td>
<td>No data given</td>
</tr>
<tr>
<td>% of houses built before 1970</td>
<td>72.2%</td>
<td>59.90%</td>
<td>47.78%</td>
<td>No data given</td>
</tr>
<tr>
<td>% minority population (2010)</td>
<td>18.91%</td>
<td>19.26%</td>
<td>18.15%</td>
<td>Approx. &gt; 23%</td>
</tr>
<tr>
<td>% foreign born population</td>
<td>4.7%</td>
<td>2.0%</td>
<td>5.6%</td>
<td>4.1%</td>
</tr>
<tr>
<td>% of foreign born population that are U.S. citizens</td>
<td>29.3%</td>
<td>73.9%</td>
<td>47.3%</td>
<td>No data given</td>
</tr>
</tbody>
</table>

1. Except where noted, data shown reflects (2010-2013) (Advameg Incorporated, 2013)
2. Supplemental Nutrition Assistance Program (United States Department of Agriculture Economic Research Service [USDA], 2015; USDA, 2016)
3. Female Head of Household (Head of household, n.d.)
Median income, unemployment, poverty, and households receiving SNAP. Median household income in two of the three zip codes (45404, 45414) in the Kiser K-6 district fall below the state average. Table 6 shows that unemployment is above the state average in all the Kiser zip codes. In 45404 it impacts nearly a quarter of the population and is three to four times higher than the state average. This rate of unemployment speaks to the ability of this population to provide food, shelter, and afford health care for themselves and their dependent(s).

The Federal government makes its Supplemental Nutrition Assistance Program (SNAP), which replaced its food stamps program, available through state and local agencies. SNAP offers financial assistance to low-income families and individuals to help buy food, which benefits their communities as well (United States Department of Agriculture (USDA) Economic Research Service, 2016). SNAP benefits assist families who meet certain financial criteria to purchase necessities like food. Households that qualify for SNAP benefits may struggle with food insecurities or live in food deserts, which are areas where acquisition of food is difficult because there are no grocery stores (USDA, 2015). Due to food insecurities or difficulty acquiring food, these individuals may face increased health risk.

Female head of household. The female head of household statistic does not include female householders living in non-family households or female householders who live alone. Head of household status in federal income tax law indicates “a person filing a tax return who manages a household which has dependents such as children or other dependent relatives living in the home, but does who not file on a joint return with a spouse” (Head of household, n.d.). Female head of household status can indicate that only one person in the household works or that it is a single mother household, among other things. Single mothers and their households are more likely to face hardships such as lower median wages than married couples, higher chance
of living in poverty, struggle with food insecurity, and lack of health insurance (Dawn, 2015), which may put those households at risk of negative health effects.

**Houses built before 1970.** As shown in Table 6, a majority of the houses in these zip codes were built before 1978, and in two zip codes (45404, 45414) well over half of the houses were built before 1970: a third in the remaining zip code (45431) were also built before 1970. As discussed in the census tract section, older houses put their residents at risk for negative health effects associated with hazards that are commonly present in older homes due to fewer health-protective regulations.

**Minorities and foreign-born populations.** Unlike census tract data, the zip code data for the Kiser K-6 school district includes information about immigrants who live in each zip code. This indicates that some of the minorities reported in the census data are foreign-born, because the tracts overlap with the zip codes. These data also include foreign-born people who may not be considered minorities by the census bureau or who do not self-identify as minorities, but who are still part of the vulnerable population as immigrants (Krogstad, 2014). As shown in Table 6, in two of Kiser’s three zip codes, the percentage of the population who are foreign born is larger than the average for the state.

**Kiser K-6 Self-Reporting and Parent Surveys**

In 2014 the Kiser administration conducted a study to assess health concerns of its students and parents. The study included parent telephone interviews and student health surveys. The purpose of the study was to utilize health concerns of the student body as a basis for proposing Kiser as a site for an SBHC. Surveys included 40 students and 62 families and were conducted through a combination of in-person and telephone interviews. From this and additional school data, Kiser created a report detailing partial demographic information about its
students as well as their health concerns and the health concerns of their parents. Kiser self-reported a student body of approximately 548 students in the 2014-2015 school year: approximately 50 percent were categorized as African American, approximately 31% were Caucasian, and the remaining (approximate) 19% consisted of other ethnic minorities including Latino/ Hispanic children and immigrants or children of immigrants from Rwanda, Russia (Ahiska Turks), Vietnam, Tanzania, Senegal, and Arab countries (Mihata, Strickland, Finlay, & Wendell, 2014). A survey of approximately 40 students revealed that almost half of them had suffered from headaches, stomachaches, and colds or fevers in the previous year, with smaller numbers suffering from dental problems (Mihata et al., 2014). Although only a small sample of the overall student body responded to the survey it was noted that the most common illnesses they reported could easily be treated in an SBHC. Seventy-eight percent (78%) of families relied on Medicaid or federal assistance to pay for healthcare services (Mihata et al., 2014). This is significant because enrollment in an SBHC saved Medicaid approximately $35.20 per child per year over the course of a three year time period (Guo, Wade, Pan, & Keller, 2010). Not only would this be beneficial for Medicaid, but it would reduce direct and indirect health related costs to families. Furthermore, approximately 25% of the student population relies on emergency rooms for routine health care and a majority (86%) of families surveyed would “probably” or “definitely” use an SBHC if one were available at Kiser (Mihata et al., 2014).

Dayton Children’s Hospital Community Assessment.

The 2014 Kiser report includes a community health needs assessment for Montgomery County created by Dayton Children’s Hospital, a non-profit hospital located in the same neighborhood as Kiser K-6. The assessment included data related to hospital visits. It is important to note that although these data are not linked to any one specific county, when the
location of Dayton Children’s Hospital in the same neighborhood as Kiser is considered; it is likely that there is some crossover in the populations of Kiser and those who are recorded in hospital visits. SBHCs are able to treat some of the top causes of hospital visits (including both in-patient requiring an overnight stay, and outpatient) including: infectious and parasitic diseases, asthma, and mental disorders (Dayton Children’s Hospital, 2014). The use of SBHCs to treat these illnesses has the potential to reduce hospital visits, including unnecessary emergency room visits. The community assessment also listed the most common outpatient diagnoses for both commercial health insurance and Medicaid users. Medicaid users were responsible for 72.4% of hospital visits in 2011 (Dayton Children’s Hospital, 2014). The most common outpatient reasons for these hospital visits were: flu vaccines, Attention Deficit Hyperactivity Disorder (ADHD), and routine child health exams. All these could easily be provided by an SBHC. Top parental concerns included accidental injury and diet and nutritional information (Dayton Children’s Hospital, 2014). SBHC clinic staff could disseminate information about the dangers of accidental injury and promote better eating habits and better health. These results suggest that the student population of Kiser K-6 and their families would stand to benefit greatly from the implementation of an SBHC.

**Discussion and Recommendations**

There is clear and mounting evidence that a plethora of vulnerable populations benefit from the implementation of school based health clinics (Health Resources and Services Administration (HRSA), (n.d.); Zimmerman et al., 2011). Improved health and attendance facilitates promotion of social support for students (Strolin-Goltzman et al., 2014) and improved grade promotion (McCord et al., 1993). SBHCs benefit students who might otherwise not receive well-child visits, or who may be kept home from school due to chronic illnesses like diabetes or
asthma. Because children are a vulnerable population SBHCs serve as a protective influence to their health because having an SHBC available will remove a barrier to health care access which might otherwise impede them from receiving adequate treatment. This paper focused largely on the multiply vulnerable population of children of immigrants or refugees and children who are immigrants or refugees themselves. This population is doubly vulnerable because they or their parents may not be able to advocate for their health due to language barriers, cultural barriers, employment or financial restraints, or a number of other factors that domestic children and parents would not experience as barriers to health care. Further research about and for the benefit of immigrants and refugees concerning their specific health risks would assist in identifying and reducing the barriers to health that they face. Based on the literature for other vulnerable populations, an SBHC would be an effective solution to provide the best protective and preventative health care possible to these vulnerable groups. Further research investigating positive benefits of SBHCs specifically for immigrant and refugee children and populations would a good first step in improving their health through SBHC use. The ACA’s focus on preventative services (United States Department of Health and Human Services, 2015) and the fact that 78% of Kiser’s student population is Medicaid-eligible means that an SBHC could be financially sustainable. The population of Kiser has a lower than average income per family household, many of whom live in older homes that pose health risks to the residents. Many residents are vulnerable as foreign-born residents or minorities themselves, and many rely on government assistance to afford basic medical treatment. This population would benefit through reduced barriers to access and the preventative healthcare provided by an SBHC.

SBHCs have been opened in nearby Cincinnati, Ohio, where over 1,000 students with chronic conditions were identified (Health Foundation of Greater Cincinnati, 2015). This
allowed for more than 800 clinic visits in under a year (Health Foundation of Greater Cincinnati, 2015). In Cincinnati, a cost-effective formula for SBHC placement requires a student population of roughly 600 students with at least 75% relying on Medicaid for healthcare (Health Foundation of Greater Cincinnati, 2015). Kiser has a student population that is nearly 600 students (n=548 in 2014), and with the inclusion of student families, staff, and the community (Mihata et al., 2014) that number would increase. The survey of Kiser families found that 78% of them relied on Medicaid. With health and academic benefits for students, the implementation of an SBHC would be ideal for an NSC such as Kiser K-6, and would allow it to better serve its students and its community. As an evidence-based intervention, SBHCs are a growing trend for healthcare of children around the country. School districts and healthcare systems should collaborate to explore and establish funding in addition to grants to sustainably fund SBHCs.


Ekpu, V. U., & Brown, A. K. (2014). Tobacco use Insights, 8(X)


Google Maps. (2016). Kiser Elementary School, Leo Street, Dayton, Ohio (31 July. 2016). Retrieved from https://www.google.com/maps/place/Kiser+Elementary+School/@39.7684284,-84.1730052,14z/data=!4m5!3m4!1s0x884083c534aa00cb:0x4b05529fb2e351ec!8m2!3d39.7838961!4d-84.1753081


### Appendix A: List of Competencies Met in CE

**Tier 1 Core Public Health Competencies**

<table>
<thead>
<tr>
<th>Domain #1: Analytic/Assessment Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes factors affecting the health of a community (e.g., equity, income, education, environment)</td>
</tr>
<tr>
<td>Identifies quantitative and qualitative data and information (e.g., vital statistics, electronic health records, transportation patterns, unemployment rates, community input, health equity impact assessments) that can be used for assessing the health of a community</td>
</tr>
<tr>
<td>Selects valid and reliable data</td>
</tr>
<tr>
<td>Describes public health applications of quantitative and qualitative data</td>
</tr>
<tr>
<td>Describes assets and resources that can be used for improving the health of a community (e.g., Boys &amp; Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #2: Policy Development/Program Planning Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes implications of policies, programs, and services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #3: Communication Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicates in writing and orally with linguistic and cultural proficiency (e.g., using age-appropriate materials, incorporating images)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #4: Cultural Competency Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes the concept of diversity as it applies to individuals and populations (e.g., language, culture, values, socioeconomic status, geography, education, race, gender, age, ethnicity, sexual orientation, profession, religious affiliation, mental and physical abilities, historical experiences)</td>
</tr>
<tr>
<td>Describes the diversity of individuals and populations in a community</td>
</tr>
<tr>
<td>Describes the ways diversity may influence policies, programs, services, and the health of a community</td>
</tr>
<tr>
<td>Recognizes the contribution of diverse perspectives in developing, implementing, and evaluating policies, programs, and services that affect the health of a community</td>
</tr>
<tr>
<td>Describes the effects of policies, programs, and services on different populations in a community</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #5: Community Dimensions of Practice Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognizes relationships that are affecting health in a community (e.g., relationships among health departments, hospitals, community health centers, primary care providers, schools, community-based organizations, and other types of organizations)</td>
</tr>
<tr>
<td>Suggests relationships that may be needed to improve health in a community</td>
</tr>
<tr>
<td>Supports relationships that improve health in a community</td>
</tr>
<tr>
<td>Collaborates with community partners to improve health in a community (e.g., participates in committees, shares data and information, connects people to resources)</td>
</tr>
<tr>
<td>Uses assets and resources (e.g., Boys &amp; Girls Clubs, public libraries, hospitals, faith-based organizations, academic institutions, federal grants, fellowship programs) to improve health in a community</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #6: Public Health Sciences Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retrieves evidence (e.g., research findings, case reports, community surveys) from print and electronic sources (e.g., PubMed, Journal of Public Health Management and Practice, Morbidity and Mortality Weekly Report, The World Health Report) to support decision making</td>
</tr>
<tr>
<td>Recognizes limitations of evidence (e.g., validity, reliability, sample size, bias, generalizability)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #7: Financial Planning and Management Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes public health funding mechanisms (e.g., categorical grants, fees, third-party reimbursement, tobacco taxes)</td>
</tr>
<tr>
<td>Provides information for development of contracts and other agreements for programs and services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain #8: Leadership and Systems Thinking Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorporates ethical standards of practice (e.g., Public Health Code of Ethics) into all interactions with individuals, organizations, and communities</td>
</tr>
<tr>
<td>Describes public health as part of a larger inter-related system of organizations that influence the health of populations at local, national, and global levels</td>
</tr>
<tr>
<td>Describes the ways public health, health care, and other organizations can work together or individually to impact the health of a community</td>
</tr>
<tr>
<td>Contributes to development of a vision for a healthy community (e.g., emphasis on prevention, health equity for all, excellence and innovation)</td>
</tr>
<tr>
<td>Participates in professional development opportunities</td>
</tr>
</tbody>
</table>
### Concentration Specific Competencies

<table>
<thead>
<tr>
<th><strong>Global Health:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify strategies that strengthen community capabilities for overcoming barriers to health and well-being</td>
</tr>
<tr>
<td>Exhibit interpersonal skills that demonstrate willingness to collaborate, trust building abilities, and respect for other perspectives</td>
</tr>
<tr>
<td>Identify and respond with integrity and professionalism to ethical issues in diverse economic, political, and cultural contexts</td>
</tr>
<tr>
<td>Apply the health equity and social justice framework for the analysis of strategies to address health disparities across different populations</td>
</tr>
<tr>
<td>Conduct evaluation and research related to global health</td>
</tr>
<tr>
<td>Enhance socio-cultural and political awareness</td>
</tr>
<tr>
<td>Apply systems thinking to analyze a diverse range of complex and interrelated factors shaping health at local, national, and international levels</td>
</tr>
</tbody>
</table>