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"Salir Adelante": Improving the Quality of School Entrance Physicals for Immigrant Minors

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Abstract

The purpose of this QI project was to improve the delivery of school physicals in the setting of an -friendly non-profit safety-net clinic by creating a patient-centered clinical pathway to improve focused screening and referrals for newly arrived migrant children and their families by routinely assessing and addressing behavioral health care (BH) and social determinants of health needs (SDoH).

Using QI methodology and Donabedian's Structure Process Outcomes framework, the project team implemented a clinical pathway that included an immigration-focused history of present illness, systematic behavioral health (BH), and social determinants of health (SDoH) screenings embedded within an electronic health record template. The pathway included referrals to community health workers (CHWs), a social worker (SW), and behavioral health consultants (BHC). The team reviewed chart data and CHW reports to analyze patient characteristics, utilization of the EHR template, and whether patients were appropriately referred to wrap-around providers.

SDoH screening rates improved from 10% to 72% and BH screening rates from 40% to 76% of patients screened during the project implementation period. The process captured behavioral health or social needs for 60 patients and generated 58 referrals to wrap-around providers.

"Salir Adelante" demonstrates the feasibility of implementing a school physical clinical pathway tailored to the needs of a specific clinic structure and population and with the long-term goal of improving care delivery for multicultural, multilingual, newly arrived children in the context of a small, community-based nonprofit walk-in practice setting.

Introduction

Siloam Health is a faith-based non-profit healthcare organization with a reputation in the community as a welcoming clinic for the refugee and immigrant population in Nashville, TN. Thirteen percent of Nashvillians are foreign-born. Since 2012, Nashville has experienced one of the fastest-growing populations compared to any other American city (Metropolitan Government of Nashville and Davidson County, n.d.). In late 2020 and continuing through 2022, a surge of unaccompanied minor immigrant children from Central America arrived at Siloam Health Antioch for school physicals. Since opening in early 2020, the clinic has also cared for a steady stream of children with one or both parents who have recently arrived from Central and South American countries.

Families and children from Central and South America leave their countries of origin because of political and economic instability, gang and drug cartel violence, and natural disasters aggravated by climate change (Ward & Batalova, 2023, Paarlberg, 2021). Once they have arrived in the U.S., immigrants face the challenge of adapting to a new country. For many undocumented immigrants, or those in the process of seeking asylum, they have limited access to resources. Exclusionary immigration policies in Tennessee and other states prevent undocumented migrants, including children, from accessing public health insurance, food assistance programs, in-state tuition and financial aid for state colleges and universities, and applying for driver's licenses (Samari et al., 2021). These policies create social barriers for immigrants seeking healthcare and community support (Lehman-Held, et al., 2021) and can create a system of structural xenophobia or racism (Samari, et. al., 2021).

Children who are undocumented or in the process of applying for asylum do not have access to insurance in the state of Tennessee. Children without insurance are less likely to routinely access well-child visits as compared to their privately or publicly insured counterparts, with adherence rate to recommended well-child visits of 31% as compared to 66% for privately insured children and 58% for publicly insured children (Abdus & Selden, 2022). Metropolitan Nashville Public Schools require

children to show proof of a recent physical examination at the time of enrollment, thus the school entrance physical is an opportunity to engage recently arrived children and families in preventive healthcare.

The purpose of this project was to improve the delivery of school physicals by creating new clinic infrastructure and a clinical pathway to meet the needs of an economically and socially marginalized population of children. The clinical pathway included systematic behavioral health (BH) and social determinants of health (SDoH) screenings embedded within an electronic health record template and referrals to community health workers (CHWs), social workers (SWs), and behavioral health consultants (BHC). The clinical pathway was piloted in children who presented for school physicals at Siloam Health Antioch during the project timeframe of August- December 2023. By translating the evidence into practice, the primary researcher built the infrastructure for a focused screening and referral process to optimize contact time and improve access to care and social services.

Review of Literature

Periodic wellness visits are considered a standard of care for pediatric populations. While many needs are assessed and addressed at a wellness visit, a primary focus of the visit is, according to the American Academy of Pediatricians (AAP), to support the family's strengths to nurture a healthy environment for children (Wyckoff, 2017). The AAP recommends routine psychosocial screening, including developmental, behavioral health, and social needs screenings, for children and families at well-child visits (AAP, 2023). Social needs that impact a person’s health are commonly referred to as social determinants of health (SDoH). SDoH are the environmental conditions of people’s everyday lives that can impact health risks, outcomes, and quality of life (Healthy People 2030, n.d.).

There is a growing body of evidence that links SDoH to poorer health outcomes in populations experiencing discrimination, poverty, chronic stress, and violence. Immigration status is an SDoH and affects all aspects of the lives of individuals with undocumented or otherwise liminal legal status

(Castañeda et al., 2015). Undocumented status is often the equivalent of invisible status in developed countries. Authors Rami, et. al (2023) describe the recent experiences of migrating individuals as a "hypercomplex emergency" because of the converging crises of the COVID-19 pandemic, climate change, and political polarization and unrest. These conditions cause cumulative stress and at the same time limit access to resources and thus create complex risk factors for mental and physical health problems.

Central American children who migrate to the U.S. are exposed to complex and layered traumatic experiences including violence, physical and sexual abuse, deprivation, climate-related exposure, violence perpetrated by gangs, and risk of kidnapping and trafficking before, during, and after their journey (Becker Herbst et al., 2018; Cardoso, 2018; Coulter et al., 2020; Schmidt, 2022; Sidamon-Eristoff et al., 2021; Sotomayor-Peterson & Montiel-Carbajal, 2014). Unaccompanied immigrant children and those forcibly separated from caregivers have a higher prevalence of post-traumatic stress disorder (PTSD), anxiety, depression, and other forms of emotional stress (Abaya et al., 2021; Cardoso, 2018; Patel et al., 2022; Schapiro et al., 2018). The correlation between trauma exposure or adverse childhood events (ACEs) and both short-term and long-term mental illness is well-documented (Anda et al., 2006; Flaherty et al., 2006; Juster et al., 2010; McEwen, 2003; Shonkoff et al., 2012). While research specific to long-term developmental and mental sequelae in trauma-exposed immigrant children is limited, the available literature has suggested that these children are vulnerable to poor health outcomes due to trauma, separation from caregivers, and chronic post-migration stress (Cohodes et al., 2021).

Access to caregivers and mentors who are trauma-informed, a supportive school environment, access to culturally and linguistically appropriate mental health and health care, policies that consider mental health and well-being of children, and communities that are educated to receive and collaborate to promote the health of migrant families can improve mental health outcomes (Silva et al., 2022). Kronick et al., (2018) recommended a pyramid approach to interventions with immediate safety and basic physical needs met first, then focus on improving family and community support before initiating referrals to

specialized mental health care. An AAP policy statement authored by Linton, et al (2019) gives comprehensive guidance for the care of children in immigrant families. Some of the specific recommendations are to gather a medical history and details of migration, exposure to trauma and violence, offer infectious disease screenings and vaccinations, provide reproductive care for children with a history of sexual activity, provide mental health services for children with a history of trafficking or victimization, screen for food insecurity, address oral health needs, and conduct age-appropriate developmental screenings (Ciaccia & John, 2016; Linton et al., 2019).

Several studies have demonstrated the feasibility of implementing routine screening for behavioral health and/or social needs during well-child visits and utilizing care navigators to connect patients to resources in large pediatric healthcare systems with a mixed insurance status population (Gray et al., 2023; Uwemedimo & May, 2018; Yaun et al., 2022). In an example of a smaller-scale project with undocumented recently arrived unaccompanied immigrant minors, researchers Schapiro, et al., (2018) conducted physical exams and clinical interviews in a school-based health clinic to assess the strengths and health needs of a small sample of immigrant children enrolled in the school. Factors associated with a successful implementation of a screening and referral process are the embedding of questionnaires within electronic health record templates, using integrated care models and care navigators, utilizing practice champions, tailoring, or streamlining questions to the language, literacy, and perceived needs of the clinic population, and screening for needs only when a community resource is available (Herrera et al., 2019; Jones et al., 2021; Massar et al., 2022; Rudisill et al., 2023; Uwemedimo & May, 2018; Vasan et al., 2020; Yaun et al., 2022)

Some studies have also explored barriers to SDoH screening implementation in primary care practices and cite difficulties such as time for implementation, patient screening fatigue, lack of access or utilization of referrals if needs are identified, language barriers, and clinician attitudes towards effectiveness of screening, discomfort with screening questions, or lack of knowledge about community resources (Gray et al., 2023; Herrera et al., 2019; Jones et al., 2021; Massar et al., 2022; Rudisill et al.,

2023; Vasan et al., 2020). To summarize, the available evidence indicates a need for routine behavioral health and social needs screening in migrant families. Several researchers have implemented screening and referral processes within well-child visits in pediatric care settings and have documented both barriers to implementation and factors that can contribute to success.

Theoretical Models

The project is guided by the construct of resiliency. Resiliency can be thought of "as the ability to bend but not break, bounce back, and perhaps, even grow in the face of adverse life experiences" (Southwick et al., 2014, pg. 4). It is a complex, dynamic process, and individuals can develop positive coping mechanisms that foster resiliency. Resiliency is ordinary, not extraordinary. Resilience theory encourages clinicians to focus not on the negative consequences of the trauma, but instead on promoting healthy coping and functioning to foster resilience (Southwick et al., 2014). The phrase "salir adelante", translated as moving forward, overcoming, or going on with one's life, is a phrase that describes the resiliency of a generation of children migrating to the United States.

In the Society-to-Cells Resiliency Model (Figure 1), resilience is also described as "resistance, rebound, and recovery of mental and physical health after a challenge" (Szanton & Gill, 2010). Individuals are part of dynamic, complex systems, and many factors, from the micro-cellular or physiological level to the macro-societal level, can impact an individual's capacity to adapt to challenges (Szanton & Gill, 2010). Nurses and health care providers who participate in the care of children in immigrant families bear witness to the hardship, trauma, suffering, and injustice that many of these families have experienced. An awareness of the needs and vulnerabilities of immigrant families is balanced by a recognition of the strengths and the resilient capacity of this population and can guide clinicians to implement interventions that foster resilience and promote or preserve health from the cellular to the societal level. Health disparities are often rooted in systemic injustice that adversely affects an individual's ability to resist, rebound, or recover from health challenges.

Patient-centered and culturally competent care are also at the center of this quality improvement project. According to authors Saha, et. al (2008), patient-centeredness is defined as care that centers on and engages the patient as a unique person. Culturally competent care, or care that recognizes and respects the different cultural perspectives of both the patient and care provider, can be aligned within individual patient-provider interactions and within healthcare systems to improve patient outcomes and equity in marginalized populations. The IHI states that healthcare improvements should be directed to a "triple aim" of improving population health, cost per capita, and patient experience (IHI, n.d.). In 2014, the triple aim was expanded to a quadruple aim with the addition of caring for the provider to address burnout and dissatisfaction in the healthcare workforce (Bodenheimer & Sinsky, 2014). A 2022 JAMA viewpoint article calls for a fifth aim of health equity to be added, stating that without explicitly addressing health disparities, quality improvement is "a hollow victory" (Nundy et al., 2022).

Methods

The project leader (PL), a staff nurse practitioner at the Siloam Antioch clinic, elected a QI project design using Donabedian's Structure-Process-Outcome (SPO) Model to create and implement a new clinical pathway in the practice setting. The clinical pathway aimed to improve focused screening and referrals for newly arrived migrant children and their families by routinely assessing and addressing behavioral health care (BH) and social determinants of health needs (SDoH), and better understand the experiences and needs of this population. The primary outcome measure for this intervention was the number of patients screened for BH and SDoH needs and then connected to BHC, SW, or CHWs. The effectiveness of the pathway or process was measured by how often the template was utilized by clinicians. The balancing measure was time spent per patient encounter. Refer to Figure 2 for the project logic model.

Regarding ethical considerations, this was a non-experimental quality improvement project that used existing clinic processes and existing clinical staff. The project leader and team members were employed by Siloam Health and followed all clinic policies and procedures to maintain patient confidentiality.

The project was implemented in a series of phases organized by SPO. The structure phases were mapping resources, gathering background information, engaging stakeholders and the community, assessing needs, and assembling a team. During the process phase, the project leader (PL), with support from the team, designed, piloted, and then implemented the clinical pathway. The outcome phase involved evaluating outcomes and creating a sustainability plan. These project phases were cyclical and iterative, and the PL sought constant feedback from team members in a continuous improvement model.

Structure and Clinical Context

Siloam Health Antioch is located in southeast Nashville. The Antioch neighborhood is ethnically and socioeconomically diverse and is home to a large population of recently arrived refugees and immigrants. The clinic cares for uninsured patients. Hispanics and Egyptians are the two largest ethnic groups seen at the clinic. Most of the patients have limited English proficiency. The clinic team consists of one registered nurse, 2 medical assistants, and two clinicians. Some staff are bilingual in English and Spanish and others are bilingual in Arabic and English. Staff use a language line translation service to provide either video or telephonic interpretation for patients when needed. The clinic engages the healthcare community through volunteers. Local doctors, advanced practice providers (APPs), and nurses sometimes volunteer for clinic shifts. The clinic employs a part-time behavioral health consultant (BHC) and a team of seven community health workers (CHWs). There is no social worker on-site, but clinicians have access to a social worker employed at the primary clinic location who conducts telephone consults. The clinic team and wrap-around providers (SW, BHC, and CHWs) work together in an integrated care model to provide whole-person healthcare. Refer to the organizational chart in Figure 3 for more details on staffing.

Clinical staff, including BHC, SW, clinicians, nurses, and MAs document patient care with the Athena electronic health record (EHR). Staff routinely collect demographic data and enter information from screening questionnaires into the EHR. A data analyst is on staff at Siloam and generates reports from chart data. CHWs also use the EHR to communicate with clinical staff but primarily use the

HIPAA-compliant REDCap research tool to collect patient information and document interventions (REDCap, n.d.).

The Individual Management of Patient-Centered Targets (IMPaCT) Model, developed by the Penn Center for Community Health Workers, provides infrastructure, training, decision support tools, and a documentation model for the CHW team at Siloam Health (IMPaCT Care, n.d.). CHWs work with patients with chronic illnesses for 3 months in a care management model or for 1 month with a rapid-response model for patients with short-term needs and goals. Before the QI intervention, the CHW program at Siloam Health did not routinely recruit patients under the age of 18 but did enroll all COVID-19-positive patients, including children, in the rapid response program during the pandemic.

In 2023, Siloam Health began phasing in SDoH screening. The SW and CHWs began assessing the social needs of a subset of patients, including those enrolled in the CHW program and new patients establishing care at Siloam. Before August 2023, the clinic was not routinely assessing SDoH needs in the pediatric population. A review of 41 charts from school physical visits before project implementation revealed that staff assessed for a single SDoH need (food insecurity) in 4 out of 41 (<10%) of patient encounters. Clinicians screened for behavioral health needs in 16 out of 41 charts, or less than 40% of the time. In June and July 2023, the BHC team began efforts to increase behavioral health screening for pediatric patients using the Pediatric Symptom Checklist version PSC-17, PSC-Y, and PSC-35, all in paper format (Navon et al., 2001).

As a part of engaging the community and gaining insight into the needs of recently arrived migrant children, the PL conducted interviews with immigration youth transition specialists in a neighborhood high school, service providers at a refugee resettlement agency, and attended a webinar sponsored by a local non-profit agency that combats human trafficking through awareness and prevention. As a way to communicate rationale and to form a strategic initiative, the PL also met with the full clinical team to share findings from the literature that support focused history-taking and screening for children in immigrant families.

Process

The PL met with key stakeholders and initiated the quality improvement project in June and July 2023. The first step was to strengthen the existing workflow, identify gaps in screening and interprofessional communication, and develop a new referral process for pediatric patients with social needs. Because of the structure and workflow of the clinic, literacy levels, and language barriers for patients, the PL in collaboration with BHC and SW, decided to utilize a brief SDoH screening process based on a few questions that would trigger a SW or CHW referral. The team also addressed the question of whether clinical staff should routinely screen for human trafficking. The PL then engaged CHW team leaders to discuss a process for referring children and families for CHW visits and services.

Designing a Clinical Pathway.

With input from SW, the PL created a modified and shortened version of PRAPARE questions related to food, housing, and utility insecurity and translated the questions into Arabic and Spanish with assistance from native Spanish and Arabic-speaking clinical staff. Since the clinical team had anecdotal evidence of barriers to school attendance in unaccompanied migrant minors, the PL and SW added additional questions (also translated) to assess the family's need for help with the school enrollment process. The PL along with the BHC lead searched the literature for human trafficking questions.

For the next step in the process, the PL met with clinical staff to elicit input for an EHR template. The EHR school physical template included a social history tab to document responses to the SDoH questions. The template also contained the Pediatric Symptom Checklist 17, 35, and Youth versions (PSC-17, PSC-35, PSC-Y). Based on recommendations from Linton et al., (2018), the history of present illness (HPI) field in the template consisted of migration history questions such as date of arrival, illnesses, injuries, or violence suffered during the journey, human trafficking questions, and SSHADESS prompt for risk and developmental history. The physical exam section consists of the standard EHR 5 to 9-year-old or 10 to 18-year-old documentation templates. The assessment and plan contained a text macro to indicate whether the clinician referred patients to CHW, SW, or BHC. The PL continued to modify the template throughout the project period based on ongoing feedback from clinicians.

The PL communicated the steps of the clinical pathway with the clinical team through email and conducted a full team meeting at the initiation of the pilot to review the process and address questions. The team meeting reinforced the strategic vision of the project and engaged the team.

Piloting and Implementing the Clinical Pathway.

See Figure 4 for a description of the clinical pathway workflow. The clinical pathway was piloted during two designated back-to-school (B2S) physical days in early August. Clinic staff advertised the B2S physical days through the local school district's English Language Learner (ELL) office. The CHW team participated in the pilot for the initial 30-day period. The PL met with the CHW team at the end of the pilot to listen to the CHW's experiences in working with recently arrived children and their families. The remainder of the team continued to utilize the pathway throughout the 4-month project period. The PL trained new staff and volunteers throughout the project. The PL met and routinely communicated with the clinical team to present successes and failures and to gain insight into barriers.

Data Collection.

The data analyst used ICD-10 codes for well-child visits to extract chart data from the EHR for children seen during the project period of 8/1/23-12/15/23 and transferred it to a Microsoft Excel spreadsheet. The data included patient demographics, documentation of SDoH questions and answers in the social history tab, documentation of the PSC-17, PSC-Y, and PSC-35 screen and scores, and whether a referral was made to BHC, SW, and/or CHWs. Parents or guardians answered demographic questions about name, date of birth, country of origin, primary language, race/ethnicity, and self-reported immigration status.

The CHW program manager generated a report of patients referred to the CHWs, along with a summary of the patient goals and CHW interventions. The PL also retrospectively reviewed charts to collect additional data such as date of arrival, whether the children were accompanied or unaccompanied during the migration journey, whether the template was utilized, and qualitative data about referrals and additional SDoH or behavioral health needs. Boolean logic provided a framework for simplifying calculations in Excel. The PL used descriptive statistics and Boolean logic principles to analyze the data.

The PL also solicited feedback from the clinical team regarding the provider's perceptions of the utility of SDoH questions and other components of the history section of the template in a brief emailed questionnaire. Since the data analyst could not extract data related to the length of visits from the EHR, the questionnaire also asked about the provider's perception of additional time spent per patient to collect and document in the chart template.

Outcomes

Population Characteristics

The PL collected and analyzed data from 144 charts of children who presented for school physicals during the project period from August 1, 2023-December 15, 2023. Refer to Tables 1-6 for complete data sets. The team cared for 68 (47%) female and 76 (53%) male children with an average age of 10 years (*SD* = 4). Most children were Spanish-speaking (*n* = 107, 74%) and migrated from Central and South American countries. Four children were U.S. citizens who were returning to the U.S. after extended stays in other countries; three of those children indicated Spanish as their primary language. 22% (*n* = 31) of children were Arabic speakers from Egypt. The remainder of the children were from Afghanistan, the Democratic Republic of Congo, and Nigeria. 74 children and families (51%) had arrived within the past 3 months and 47 of those (32%) had arrived in the U.S. within 30 days. Most patients (67%, *n* = 97) resided in the immediate geographic area of the clinic. Regarding immigration status, half of the patients (*n* = 72) either answered "I do not want to share", left the question blank, or stated they were undocumented. Seven patients were unaccompanied migrant minors who traveled to the U.S. without a legal parent or guardian and ranged in age from 5 to 17 years old.

The primary outcome measure for this intervention was the number of patients who were asked about behavioral health and SDoH needs and were subsequently connected to wrap-around providers, or BHC, SW, or CHWs. Before the project implementation, the clinical team screened for a single SDoH

(food insecurity) in less than 10% of the children and families. Clinicians or BHC completed and documented behavioral health screening in less than 40% of charts. After the clinical pathway was implemented, 72% (*n* = 103) of patients were screened for at least one SDoH need and 49% (*n* = 70) were screened for all four SDoH needs. Clinicians documented food insecurity screening for 66% (n = 95) of patients, utility needs for 63% (*n* = 91), housing needs for 58% (*n* = 84), and 58% (*n* = 84) were asked if they needed help with school enrollment. SDoH screening rates for two-week intervals ranged from 22% to 87% during the project implementation, with an average of 68% (*SD* = 19). Screening rates were highest in the project's initial period when the clinic had dedicated Back-to-School-Physical days. Screening rates dropped in the middle of the project period when there were several disruptions in clinic staffing. Refer to the run chart in Figure 5.

SDOH Screening Results

Children and families reported needs for food support and school enrollment help most frequently, with 22% (*n* = 31) of parents answering yes to food insecurity and 23% (*n* = 33) indicating a need for help with school enrollment. Housing and utility needs were low; with 7% (*n* = 10) of parents reporting concerns about housing insecurity and 3% (*n* = 5) reporting difficulty paying for utilities or at risk of losing utilities in their home. Overall, 35% (*n* = 50) of patients indicated a social need.

SDoH Referrals

School Enrollment.

The SW accepted referrals for 24 children with SDoH or school enrollment needs. The SW helped children and families connect to the English language learner office in local school districts to begin the enrollment process. They also encouraged regular school attendance and connected families to community parenting classes and tutoring resources. The SW addressed food insecurity needs by providing families with a list of community food banks and information on how to access those resources.

Food Insecurity and CHW Interventions.

CHWs enrolled 18 children and families for food insecurity during the project. At the first meeting with families, the CHW team asked the parent or guardian about additional needs and set patient-centered goals to address the needs. The CHWs addressed the immediate physical needs of recently arrived families by delivering boxes of food, diaper donations, clothing donations, free COVID-19 test kits, and thermometers.

CHWs also helped orient families to the community by distributing emergency preparedness tools, information on English classes, dental resources, COVID-19 vaccines, and neighborhood food bank resources. The CHW team provided additional support to families needing help with school enrollment by helping parents navigate the school bus system and connect with teachers or staff in their neighborhood schools.

Behavioral Health Screening

76% (n = 109) parents and children completed either the PSC-17, PSC-17 Youth, or PSC-35 for behavioral health (BH) screening. BH screening rates during two-week intervals ranged from 33% to 92%, with an average of 72%, (SD = 17). Nine children, or 6%, had BH screening scores above the validated cut-off score, indicating behavioral and emotional health needs. One patient completed the Personal Health Questionnaire-9 (PHQ-9) instead of the PSC questionnaire and had a positive PHQ-9 score. Two children had a total screening score below the cut-off value but had higher scores on either the PSC-17 and PSC-17 Youth internalizing subscale or attention subscale and expressed symptoms that were interfering with daily activities. Three other children had subscale scores above the threshold score, but chart documentation did not note any symptoms or concerns from parents or guardians. One child had a positive PSC-17 score and when the BHC reviewed the PSC-17 with the parent they found that the parent had misunderstood the questions and answer choices.

Behavioral Health Referrals

16 children met with the BHC at the clinic. The PL reviewed the chart of each child with a BHC referral and/or a positive BH screen to collect additional data about the child's needs and BHC interventions. When meeting with children and families, the BHC most frequently addressed behavioral

or emotional problems related to adjusting to life in the U.S. Children said they were sad because they left friends and family behind or were anxious about starting new schools and not having any friends at school. One unaccompanied minor was separated from her parents for the first time. Some parents reported hyperactive behaviors in their children and requested help with managing behaviors. A total of five families reported migration-related stress or traumas such as witnessing violence, separation from family members in detention facilities, being robbed, and experiencing deprivation and environmental dangers during the journey. Six children expressed other concerns not identified by the BH screens and were referred to BHC to address those concerns.

Clinical Pathway Utilization and Referrals

The PL used principles of Boolean logic described in the data collection section and outlined in Figure 5 to analyze positive screens and referral patterns to determine whether patients with SDoH or BH needs either met with or were referred to BHC, SW, or CHWs. By analyzing the table, the PL was able to reduce 8 possible scenarios to 2 conditions to determine whether the patient's need was appropriately matched to a referral. The first condition is whether a referral was made. The second condition is if no referral was made and no SDoH or BH need was identified, then the lack of need was also appropriately matched to a lack of referral. 13% (n = 19) of patients with needs were not referred; the remaining patients were either appropriately referred or did not have a need. Refer to Figures 6 and 7.

The chart review showed that clinicians utilized the template in 143 out of 144 charts, or 99.3% of the time. The balancing measure was time spent per patient encounter. The length of visits could not be extracted from the chart data and so instead was estimated by the participating clinician’s perception of extra time spent per encounter. Two out of four clinicians reported the template added 5 minutes or less to the length of the encounter and two out of four reported they spent an additional 5-10 minutes per encounter. Clinicians reported that the template was helpful as a reminder to ask questions about the immigration journey and experience for recently arrived families, as well as reminding them to address topics such as dental hygiene, diet, exercise, and safety that apply to all children. One clinician

commented on the length of the template. The PL ultimately removed human trafficking questions from the template because clinicians reported they rarely applied to patients.

Discussion

"Salir Adelante" demonstrates the feasibility of implementing a school physical clinical pathway tailored to the needs of a specific clinic structure and population and with the long-term goal of improving care delivery for multicultural, multilingual, newly-arrived children in the context of a small, community-based nonprofit walk-in practice setting. SDoH screening rates improved from 10% to 72% and BH screening rates from 40% to 76% of patients screened. The process captured behavioral health or social needs for 60 patients and generated 58 referrals for 41 patients to connect to wrap-around providers. Refer to Figure 7 for the referral flowchart.

Other studies also demonstrated improvements in screening rates after implementing screening and referral pathways in larger institutions serving low-income children and families (Gray et al., 2023; Uwemedimo & May, 2018; Yaun et al., 2022). In contrast to those studies, this was a nurse practitioner-led QI project and was implemented in a non-academic setting within an uninsured, population. This study adds further to the QI and implementation literature in underserved pediatric populations. The project also serves as an example of how the doctorally-prepared nurse practitioner can systematically address clinical problems to advance health equity.

By building on the existing strengths of an integrated clinical team, the PL paved a new pathway for CHWs to pilot social needs interventions with children and families. At least one social need was identified in 35% of the children seen for school physicals; this finding aligns with screening outcomes in similar studies with much larger populations (Gray et al., 2023; Yaun et al., 2022). Similar to other studies, the project demonstrates the importance of connecting patients to resources through an integrated care team and personal care navigators, a role fulfilled by SW and CHWs in this project's context (Gray et al., 2023; Herrera et al., 2019; Uwemedimo & May, 2018; Yaun et al., 2022). Authors Massar et

al., (2022) discussed the importance of tailoring screening to match clinical workflows, the needs of the population, and matching needs to existing resources in the community as effective strategies for SDoH screening implementation. The PL in collaboration with the wrap-around and community health teams utilized similar strategies.

Following Donabedian's Structure-Process-Outcome, the PL assessed the clinic's current structure and the population's needs to create a new screening and referral pathway for school physicals. The intervention was most successful during the designated Back-2-School Physical days when the entire team was focused on the process. Screening and referral rates remained high through the first month of the project and then plunged to between 20-40% in the third month. This downturn coincided with nursing staff turnover, the senior BHC taking a sabbatical, and a lead clinician taking medical leave. Volunteer clinicians and a part-time contract clinician staffed the clinic during the lead clinician's leave. The new nurse manager was unaware of the ongoing project, and other clinical staff assumed the project had ended. Screening rates improved when the BHC returned from a sabbatical, the PL trained the new nursing staff, and refocused the team to continue implementing the pathway. Staff turnover, volunteer providers, and a busy clinic environment that cares for a variety of acute and chronic needs are all examples of real-world challenges and competing priorities in small practice settings that can make QI implementation and sustainability difficult.

Like researchers Herrera et al., (2019), the Siloam Health Antioch clinical team found it difficult to administer a paper screening tool and then enter data into the electronic health record. Sometimes screens were administered but results were not documented. This occurred with both the SDoH screen and BH screens. Parents were sometimes confused by the screening questions or had difficulty completing the screens during the visit, especially when more than one child in the family came for an appointment. Clinicians estimated the additional history questions and screenings added 5-10 minutes to the visit length. In a busy clinic day, even 5 extra minutes in a room with patients can negatively impact the schedule, add to clinician and nursing staff stress, and lengthen the clinical day.

However, the additional time with patients allowed clinicians to understand the specific migration experiences and social needs of children and families. The clinical pathway and EHR template provided a procedure for clinicians to follow to better connect children to resources, and thus reduce the impact of moral injury when faced with seemingly unsurmountable needs of the newly arrived population. Clinicians participating in the project acknowledged this as a positive outcome of the project. This outcome aligns with IHI's fourth aim of clinician well-being (Bodenheimer & Sinsky, 2014).

Several researchers found correlations between migration-related traumatic experiences and poor mental health in the population (Cardoso, 2018; Castañeda et al., 2015; Cohodes et al., 2021; Rami et al., 2023; Sidamon-Eristoff et al., 2021). With this background knowledge, the PL expected more than 6% of children to have positive behavioral health screens. This finding could be explained by a lack of disclosure, limited literacy, as was documented with at least one parent, screening fatigue, or by the fact that only a small number of families reported migration-related trauma or stressors. Despite higher rates of trauma and stress pre-, peri-, and post-migration, other researchers concluded that first-generation s are less likely to exhibit symptoms of mental health conditions (Salas-Wright, et al., 2014). Protective factors such as family support, optimism, agency in the migration decision, and resilience could explain this paradox in recently arrived s (Jani et al., 2016; Potochnick & Perreira, 2010). However, as first-generation s acculturate to life in the U.S., mood disorders are more prevalent. The 2021 Youth Risk Behavior Surveillance System reports roughly 30% of Hispanic middle and high school students indicated their mental health was not good; a similar percentage of white and black students reported poor mental health (CDC, 2021). As research on the behavioral health needs of children in immigrant families continues to evolve and emerge, one thing remains clear: screening is an essential step to identify mental health needs.

Limitations

This project had several limitations. Clinicians, nurses, and BHC entered data from paper screens into the chart. The PL retrospectively reviewed data from charts. Data may have been entered

incompletely or incorrectly from screens into the chart and then from charts into the data spreadsheet. The run chart also shows a 2 to 3-week period when the team was not consistently implementing screens. These factors may have affected the internal validity of the data. Yet another limitation was the inability to accurately track the time per visit pre- and post-implementation to assess the impact of the intervention on visit length. While clinicians estimated the extra time spent during visits while implementing the pathway, the lack of specific data on time spent per visit makes it difficult to understand the drivers of differences in visit lengths, such as differences in scheduling or staffing on certain days or patient demographic differences (i.e. language groups, interpretation needs).

Another limitation is the 4-month duration of the project. This brief implementation period limited the number of improvement cycles the team could trial and may limit the generalizability and usefulness of the data. Additionally, due to the existing boundaries of the CHW program and the need for a shorter pilot phase, the CHW team only participated in the clinical pathway for 1 month of the project.

The QI methodology for this project was intended to improve processes and outcomes for this group of clinicians and the patients they serve. Each clinic or practice setting has its own unique challenges and processes. The process of an SPO analysis and development of a clinical pathway implemented in this QI project is worth replicating. The specifics of the pathway should be tailored to the unique clinical context and patient population for other practices.

Sustainability

While the QI project ended in December 2023, the PL, along with clinical and community health staff, continued to build on the project into 2024. Pediatric SDoH screening continued but was adapted and absorbed into a clinic-wide initiative funded by the Tennessee Department of Health (TDH) Resiliency grant to screen more families and individuals, regardless of age, for social needs. Given the difficulties of manually entering screening data into the EHR, an interdisciplinary workgroup trialed a brief electronic screen and researched ways to interface the data directly into the EHR. The CHW team also adapted and piloted an abbreviated screening with selected families and enrolled them in a CHW rapid response program to address SDoH needs. The lead BHC had requested a part-time SW position to

work at the Antioch clinic in the TDH Resiliency grant proposal. When hired, this SW will support the social needs of the patients at Antioch.

Clinic staff continued with BH screening as a part of school physicals and followed the established referral pathway. The school physical template remained in place for clinicians to utilize and update or adapt as needed. The project laid the framework for the clinical and community health teams to collaborate more closely to provide patient-centered whole-person care for children and families and that work continued beyond the designated project period.

Conclusion

This study adds to the literature on comprehensive preventive pediatric care including behavioral health and social needs screening with resource/referral linkages for a marginalized population in a non-academic primary care setting. Despite the limitations, the key lessons of engaging staff, integrating new processes into current workflows, tailoring screenings to specific populations and resources available, and utilizing wrap-around providers and CHWs (or navigators) to link patients to resources are broadly applicable to other clinic settings.

"Salir Adelante" is an example of one intervention, directed towards children and families within the community context, that can foster resilience and promote health from the cellular to the societal level (Szanton & Gill, 2010). By asking questions and screening for needs specific to the recently arrived population, this project better orients the clinical and community health teams to provide culturally competent and patient-centered care (Saha et al., 2008), and follows the model suggested by Kronick et al., (2018) of a pyramid-approach to meet basic needs that when unmet, can negatively impact long-term health. There is a need for longitudinal studies that examine the long-term effects of access or lack of access to care for uninsured children in families, and what preventive interventions correlate to better mental and physical health outcomes as they age. Children in families, particularly those who have liminal legal status, need strong advocates to promote better access to care, either through a robust, well-funded safety-net system or through expansion of public health insurance, and so work towards health equity at the community and society levels.

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Figure 1

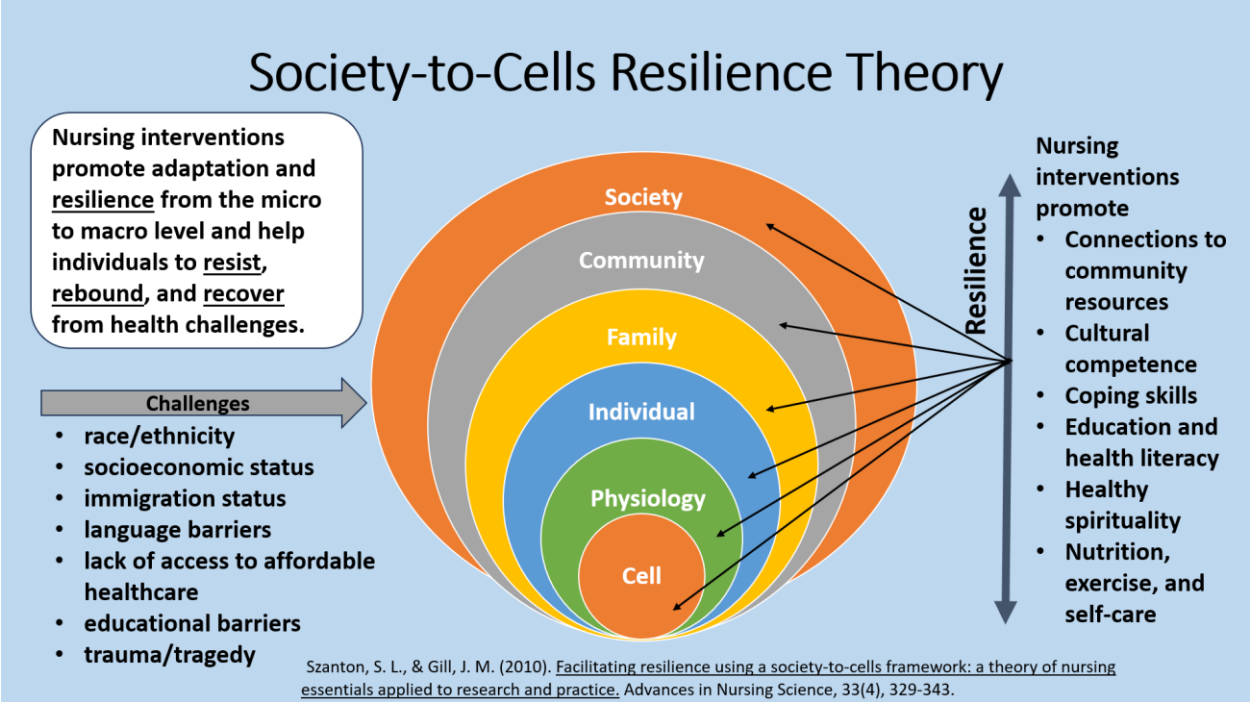
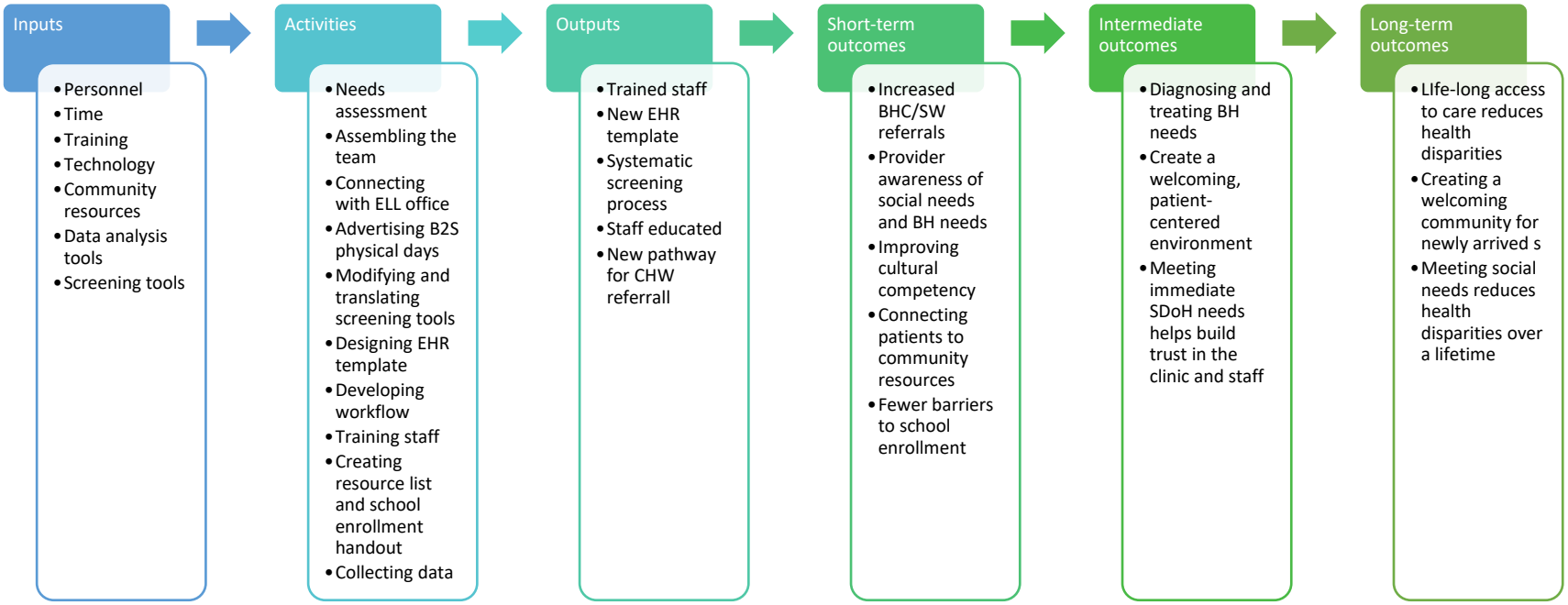

Society-to-Cells Resilience Theory
Nursing interventions promote adaptation and resilience from the micro to macro level and help individuals to resist, rebound, and recover from health challenges.
Challenges
• race/ethnicity
• socioeconomic status
• immigration status
• language barriers
• lack of access to affordable healthcare
• educational barriers
• trauma/tragedy
Society
Community
Family
Individual
Physiology
Cell
Resilience
Nursing interventions promote
• Connections to community resources
• Cultural competence
• Coping skills
• Education and health literacy
• Healthy spirituality
• Nutrition, exercise, and self-care
Szanton, S. L., & Gill, J. M. (2010). Facilitating resilience using a society-to-cells framework: a theory of nursing essentials applied to research and practice. Advances in Nursing Science, 33(4), 329-343.

Figure 2 Logic Model



IHI quadruple aim: addressing SDoH in newly arrived pediatric patients can reduce health disparities over time.

Patient-centered and culturally competent care: when healthcare workers and systems provide PC and CC competent care, this reduces barriers and improves trust and life-long access to care.

Society-to-Cells Resilience theory: interventions at the individual patient level can increase resiliency.

Figure 3 Organizational Chart

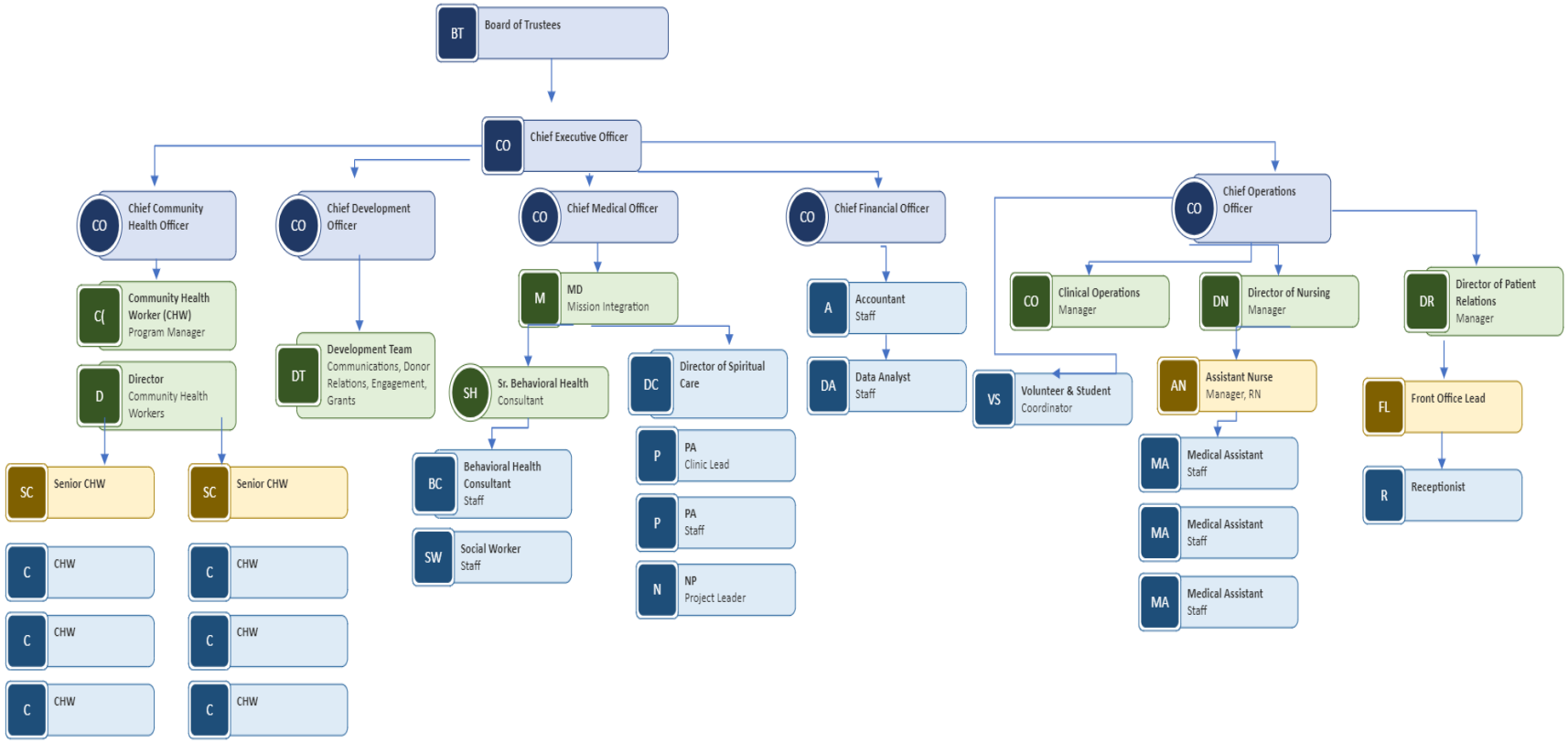
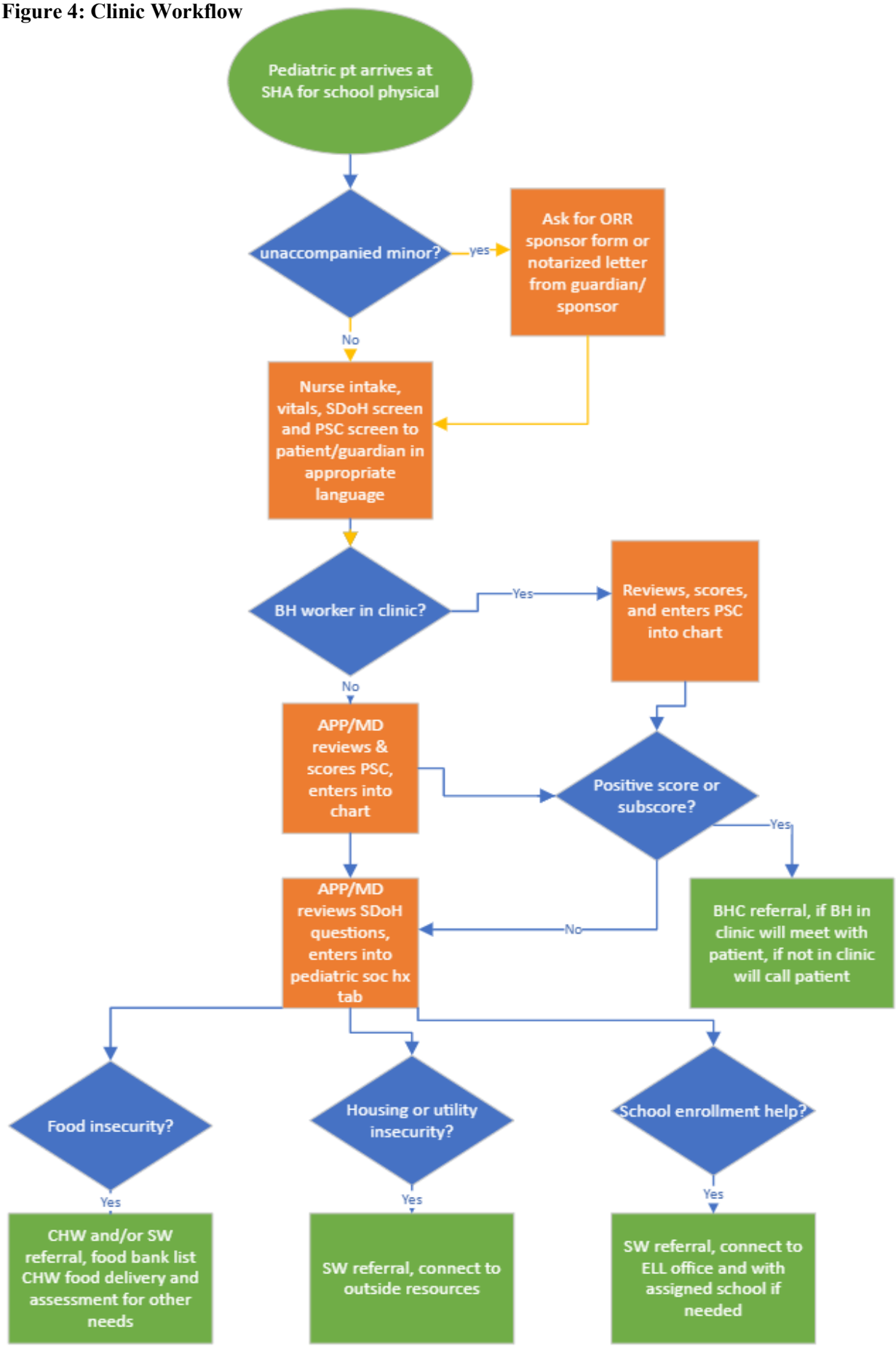


Figure 4: Clinic Workflow



Results

Table 1

Patient demographics (N = 144)

	Demographics	
	M	*SD*
Age	9.9	3.9
	n	%
Sex		
Male	76	52.7%
Female	68	47.2%
Age by age range		
< 5 years old	4	2.78%
5-8 years old	48	33.3%
9-12 years old	44	30.5%
13-18 years old	48	33.3%
Primary language		
Arabic	31	21.5%
Dari	2	1.38%
English	4	2.78%
Spanish	107	74.3%
Self-reported immigration status		
Blank	26	18.1%
I do not want to share	46	31.9%
Undocumented (expired visa)	2	1.38%
Asylee	18	12.5%
Refugee	17	11.8%
In the process of applying for Residency/Citizenship	9	6.25%
Legal Permanent Resident	12	8.33%
U.S. Citizen	5	3.47%
Visiting Visa (not expired)	7	4.86%

Afghan parolee	2	1.38%

Table 2

Count of patients by country of origin N = 144

Country	Count of patients	
	n	%
Afghanistan	2	1.38%
Bolivia	1	0.69%
Colombia	4	2.78%
Cuba	2	1.38%
The Democratic Republic of Congo	1	0.69%
Egypt	31	21.5%
El Salvador	5	3.47%
Guam	1	0.69%
Guatemala	21	14.6%
Honduras	28	19.4%
Mexico	32	22.2%
Nicaragua	2	1.38%
Nigeria	1	0.69%
United States	4	2.78%
Venezuela	9	6.25%

Table 3

Time interval from arrival to clinic visit (N = 144)

Months	Count of patients	
	n	%
0-1 month	47	32.6
1-3 months	37	25.7
3-6 months	16	11.1
6-12 months	7	4.9
>12 months	29	20.1
Unreported	8	5.5

Table 4

Social determinant of health screenings (N = 144)

SDoH screening category	Positive		Negative		Blank	
	n	%	*n*	%	*n*	%
Food insecurity	31	21.5	64	44.4	49	34.0
Help with school enrollment	33	22.9	51	35.4	60	41.6
Utility insecurity	5	3.4	86	59.7	53	36.8
Housing insecurity	10	6.9	74	51.3	60	41.7

Table 5

SDoH Question Answered Count	Screened	
	n	%
0	41	28.5
1	7	4.2
2	11	7.6
3	15	10.4
4	70	48.6

Table 6

Behavioral health screening (N = 144)

PSC-17, PSC-17 Youth, or PSC-35	Positive		Negative		Blank	
	n	%	*n*	%	*n*	%
Count of patient	9	6.3	100	70.4	35	24.3

Note Positive screen is defined as total PSC-17 or PSC-17 Youth score greater than or equal to 15 or PSC-35 score greater than or equal to 28.

Figure 5 Run Chart

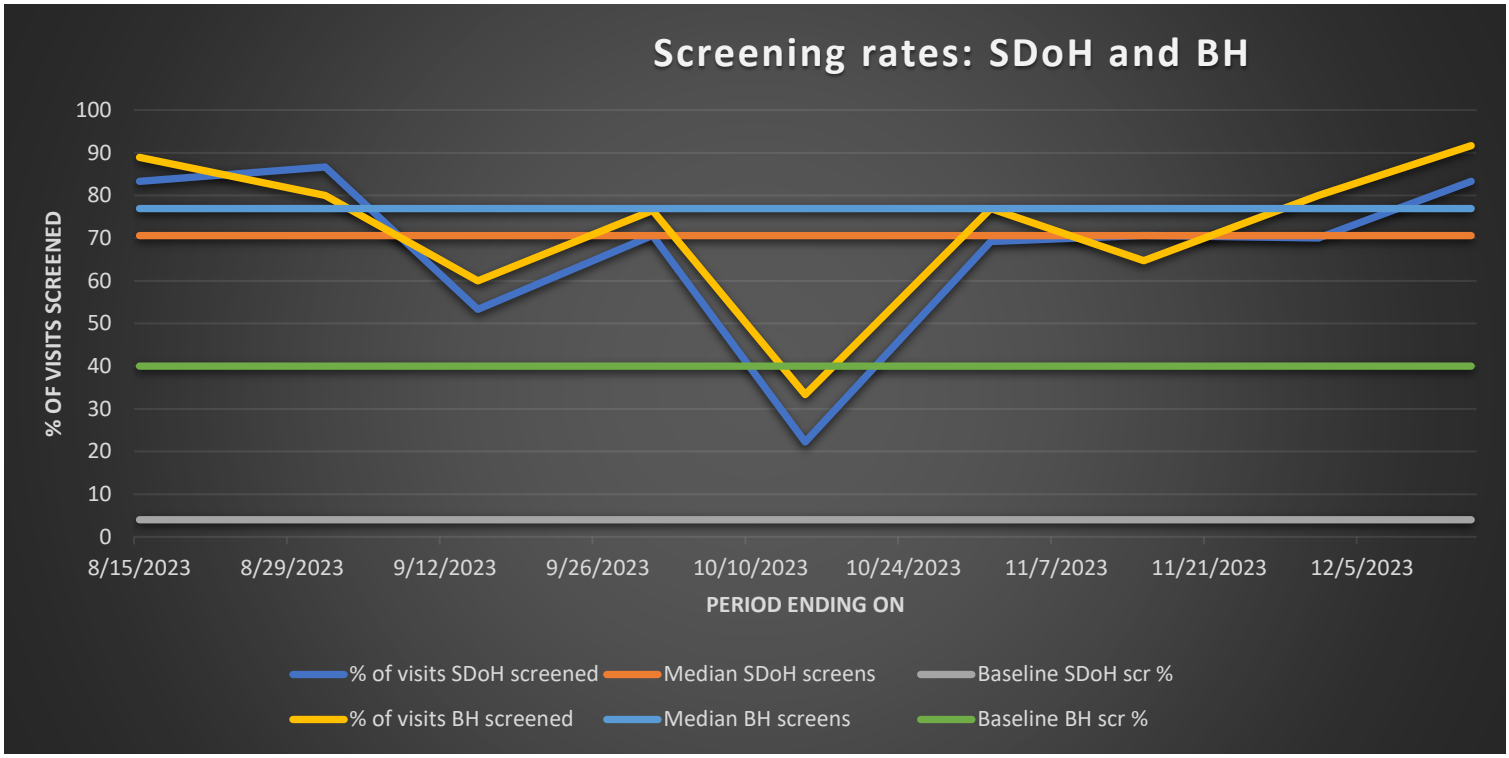


Figure 6- Boolean Truth Table

INPUT A (SDOH NEED)	INPUT B (BH NEED)	INPUT C (REFERRAL MADE)	OUTPUT Y (NEED MATCHED TO REFERRAL)
✗	✗	✗	✓
✗	✗	✓	✓*
✗	✓	✗	✗
✗	✓	✓	✓
✓	✗	✗	✗
✓	✗	✓	✓
✓	✓	✗	✗
✓	✓	✓	✓

*If a patient did not have an SDoH or BH need identified by the screening questions but was nonetheless referred to a wrap-around provider, the PL analyzed the data with the knowledge that some patient needs were identified in additional questioning or screening by the clinician. Therefore, these cases are also considered to be "true", indicating that a need was still appropriately matched to a referral.

Legend:

✓ = True

✗ =False

Figure 7 Referral flowchart