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Case Report

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Operational Considerations of School-Based Oral Health Programs During COVID-19

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Abstract

The sustainability and existence of school-based oral health programs are being threatened by the challenges of accessing school children amid COVID-19. Many children are either attending school in a virtual format from home or attend in a hybrid format in which the in-person days occur in a reduced manner, such as half-days or only a few days per week. Some children are attending school in-person five days per week, however, many school districts have restricted outside organizations from entering the building as part of the school's ramped-up safety protocol.

School-Based oral health programs have had to quickly strategize to figure out ways to continue their program and to meet the oral health needs of school children. Through interviews, four non-profit organizations share how COVID-19 has impacted their program and how they were able to modify operational and care-delivery plans for successful program continuation.

This case provides an opportunity for students and professionals in dentistry, medicine, and public health to consider what steps can be taken to ensure the continued operation of school-based health services during limited access to target patient populations. The case demonstrates the necessity of a quick response to disruptions in the regular/standard operations through program modifications in order to continue to meet the needs of the community.

Abbreviations

ADA	American Dental Association
CHA	Cabarrus Health Alliance
COVID	Coronavirus
FQHC	Federally Qualified Health Center
HHS	Health and Human Services
IOM	Institute of Medicine
NRC	National Research Council
n.d.	no date
SBOHPs	School-Based Oral Health Programs
TDE	The Duke Endowment
U.S.	United States
WHO	World Health Organization

Keywords: School health; Oral health; Dental Public Health; Rural health; Underserved populations.

Introduction

Dentistry has made considerable advances in public health after the 2000 Surgeon General's report, *Oral Health in America,* drew national attention to the importance of oral health and its integral role in overall health and wellbeing [1]. However, dental disease is still the most common chronic illness for children ages 6-19 years in the U.S. despite being highly preventable [2]. Dental decay can lead to pain and infection. Studies have shown that children who suffer from oral health issues were more likely to have lower school performance and low psychosocial well-being, such as feelings of worthlessness [3]. The Surgeon General stated that "the public health infrastructure for oral health is insufficient to address the needs of disadvantaged groups" (HHS, 2000, p. 240) [3].

Disadvantaged groups include those facing challenges based on many factors such as ethnicity, race, age, sex, income, and geographic location. They face many levels of structural discrimination that prevent achieving the same rights and opportunities available to others, especially health promotion opportunities. These health inequities "are the result of the historic and ongoing interplay of inequitable structures, policies, and norms that shape lives" [4]. Ensuring equal opportunity utilizing strategic frameworks to shape new structures of care, policies, and norms are essential in addressing the inequities responsible for oral health care disparities. Fortunately, the Surgeon General's report included a call to action for improvements in oral health strategies and initiatives which led to the development of many school-based oral health programs (SBOHPs).

School settings are ideal service delivery sites to link families to care. There are many different types of SBOHPs that offer a variety of dental services such as screenings, education, referrals, sealants, fluoride varnish, and other preventive, diagnostic, and treatment services. SBOHPs can improve access to care for vulnerable populations by overcoming many logistical barriers experienced disproportionately by low-income and minority families [5]. Providing oral health services to children in a familiar and convenient setting can help eliminate many known barriers to care such as fear, transportation, health literacy, and the inability of parents to miss work [5].

Unfortunately, in the wake of COVID-19, many SBOHPs are finding it necessary to modify their service delivery plan and operational structure in real-time as school operations across the country have evolved with epidemiological changes. SBOHPs rely on access to children while they are in schools. With many schools closed or operating on modified schedules, SBOHPs are facing considerable challenges that potentially affect the sustainability of programs. The disruption of SBOHPs could have devastating impacts on the oral health of the country's most vulnerable children. Many children living in low-income households rely on SBOHPs for essential dental services. Amid the pandemic, attempting to receive care elsewhere, such as in a traditional dental setting, has been difficult. Based on recommendations by the American Dental Association (ADA), dental offices closed their doors for routine and elective procedures, limiting services to emergency only for months during the initial months of the pandemic [6]. Within the first few weeks of the World Health Organization (WHO) pandemic declaration of COVID-19, the ADA released poll results showing 76% of dental offices closed but were seeing patients with dental emergencies and 19% of offices reported closing completely and providing no emergent care [7].

Among the SBOHPs developing strategies for continuation of care are several non-profit organizations throughout the Carolinas that received funding through the Duke Endowment (TDE) to expand or begin school-based oral health services. Four of these funded organizations shared their experiences and strategies for the potential of replication throughout other SBOHPs faced with the same challenges.

Methods

Open-ended questions were developed with specific aims (Table 1) to gain knowledge of perceptions and operational strategies of SBOHPs during COVID-19. Four organizations participated in interviews to answer the questions and share experiences. The organizations represented in the study were chosen as part of a convenience cohort based on my knowledge of their participation in an oral health state initiative. Interviews were conducted virtually via the Webex platform with Dental Directors or Dental Program Managers in October 2020. The average interview time was 60 minutes and the interviews were recorded but not transcribed. Field notes were taken and the recordings were reviewed multiple times to document responses and to ensure the accuracy of the discussion. The qualitative research method of story telling and a comparative synthesis of collected information was performed [8].

Table 1
Interview Questions and Aims

Question	Question Aim
1. How has COVID-19 impacted your SBOHP?	• To explore the perceived challenges and experiences of SBOHPs amid COVID-19
2. How do you believe COVID-19 has impacted oral health?	• To explore perceptions of dental public health during the COVID-19 pandemic
3. How have your SBOHP operations been modified during COVID-19 to achieve the program's goal? ◦ Probe 1 – Have new goals been developed within your SBOHP? ◦ Probe 2 - Have your expected outcomes changed?	• To identify strategies developed to maintain SBOHP objectives and goals

Results

Overall, the four programs provided similar responses to the interview questions. The challenges that the organizations described were almost identical. All felt that operational modifications were necessary for responding to the challenges they faced due to COVID-19. Many of those operational modifications were also very similar across the organizations,

such as the reassignment or furlough of staff and finding alternative ways of accessing school-children. The differences found among the organization's strategies were the primary focus of redesign as described in their respective stories presented below. Some found great success in utilizing teledentistry and staffing adjustments, while others found that a temporary shift of patient scheduling methods has been most helpful.

Kintegra Health

Kintegra Health, formerly known as Gaston Community Health Center, is a Federally Qualified Health Center (FQHC) in North Carolina. Their SBOHP includes three buses that deliver dental preventive services throughout public schools in Gaston County utilizing dentists, dental hygienists, and dental assistants. If children need dental treatment beyond preventive care, a direct referral is made to their fixed clinic site within the FQHC. In response to COVID-19, schools in the area offered a virtual platform or a hybrid two days per week with face-to-face instruction for students. This has limited the program's access to children. When exploring opportunities to be sustainable, reducing operational costs was a primary goal. Fortunately, right before school closures and modified schedules, the North Carolina Board of Dental Examiners enacted a change in the North Carolina Dental Practice Act easing restrictions on the scope of practice for dental hygienists (NC Oral Health Collaborative, 2020) [9]. Public health hygienists are now permitted to provide preventive care in public health settings without a previous exam by a dentist and under general supervision (without a dentist present). This rule change came at an opportune time to alleviate the challenges presented by COVID-19. Kintegra has been able to modify operations by staffing the dental buses with dental hygienists and equipping them with intraoral cameras to provide efficient preventive care. The hygienist takes nine standard images and uploads the images to the patient's chart. The dentist performs asynchronous teledental exams to create tentative treatment plans. At that time, a community health navigator reaches out to guardians to discuss exam results and obtain permission to share the images with them. Providing opportunities for guardians to view the images while discussing their children's dental needs has increased compliance for follow-up care. The community navigators also contact guardians of children previously enrolled in the dental program to facilitate program re-enrollment and scheduling appointments.

Welvista's Smiles for a Lifetime

Welvista's Smiles for a Lifetime is another SBOHP that serves children through TDE's expansion grant in Hampton County, South Carolina. Welvista is a non-profit organization that provides dental services utilizing a fixed site at one of the county's public schools. Welvista provides transportation services during the school day to the clinic from surrounding schools in the county. Currently, like Gaston County, Hampton County has a virtual option and a hybrid face-to-face option for students. However, instead of alternating days for students, children are divided and assigned to morning or afternoon sessions. This schedule has resulted in limited availability of children to the dental program. Social distancing considerations impacted transportation with only one child allowed in the vehicle for each trip. This further limited availability of children, impacting clinical production. To alleviate the stress of accessing children during school time, Welvista's staff developed a "telephone campaign." Two weeks before school started, guardians of children enrolled in previous school years were called. They were able to fill out new consents for treatment and medical history updates over the phone and were offered a drive-up service for review and signatures. For children with pending treatment plans or due for preventive services, appointments were given and consent could be signed at that time. With these modifications, the program is currently operating the same two days as last school year and will need to increase services to three days per week to meet current demands for care.

Little River Medical Center – Miles for Smiles

Little River Medical Center is an FQHC serving children through an SBOHP in Horry County where students also have face-to-face hybrid and virtual options. The program delivers services using a dental bus like Kintegra and was able to get started this school year around the first of October. Little River experienced a much slower start than in previous years, which caused concern in their ability to meet the needs of the community. Paired with the slow start, they also have experienced limited availability of school-children and difficulties in getting consent forms from guardians. The school district has been overwhelmed with COVID-19 decisions as the county has been declared a "COVID hotspot". With the school's competing priorities, they rerouted the chain of communication for the SBOHP which created additional challenges in quick approval and slower processes. However, they have been successful in gaining approval from the school district to place electronic consents for dental services on the school's websites. This has led to an increase in consents for both virtual students and face-to-face students. The program's outreach team has also been contacting guardians through calls, texts, and emails to offer continued services. The SBOHP is also exploring alternative community sites for the bus to offer more opportunities for virtual students and face-to-face students on days they are not at school as a short-term solution.

Cabarrus Health Alliance

One more SBOHP that shared its strategies is Cabarrus Health Alliance (CHA), formerly Cabarrus county Health Department. CHA is a public health authority in Cabarrus County, North Carolina that utilizes portable equipment that is set up inside the school building to provide dental care. Their SBOHP faces a slightly different challenge as even though the schools in their service area are both face-to-face on a hybrid schedule and virtual, the school officials feel that there is too much going on right now for them to entertain conversations related to oral health services. The program is not able to operate its traditional school program. They have begun to utilize their equipment inside WIC offices that are

across the hall in their building to capture children under 5 that could begin early establishment into the SBOHP and continue as they age into school. In this setting, services are also offered to any sibling or pediatric family member of the WIC patient. The program is also reaching out by phone to previous school-based patients to offer an appointment for services within their fixed dental clinic site. They are also beginning communication with local churches in rural areas and areas with a high migrant population to explore opportunities to set up equipment at the church and provide dental care.

Discussion

The interviews with the participating organizations focused on the impacts COVID-19 has had on the SBOHPs, will have on oral health, and how challenges to providing care can be overcome. Following the interview, a thematic qualitative synthesis was performed resulting in five key areas of lessons learned.

Communication

Communication has been instrumental in mitigating challenges and was a key theme throughout all the conversations. Programs have been most successful when school districts and officials have been supportive of the SBOHP mission. Communication on the importance of oral health, lack of access to care, and COVID-19 safety plans with increased infection control measures seem to help increase the support for continued school-based oral health care. Communication with guardians and parents about services, appointments, and consents has also increased the success of SBOHP's ability to provide care during the pandemic with school shut-downs and hybrid schedules.

Teledentistry

Utilizing teledentistry as a data collection tool has also shown to be a promising system of care. Teledentistry seems to work well as a great communication method with guardians and parents to achieve completed treatment, but also between the hygienist in the school and the dentist at the fixed clinic for tentative treatment planning. As treatment plans are tentatively created based on the images to the dentist, the number of appointments needed for care is reduced.

Alternative care delivery sites

Finding alternative care delivery sites may also be promising in continuing to offer opportunities for dental care to school children. The feasibility and sustainability must be assessed as wear and tear on vehicles and delivery systems, time on the road, time to set-up and break-down equipment, among other considerations (e.g., staffing limitations) may pose additional challenges.

Program flexibility

Programs that have taken a step back to replan and refocus seem to have been successful in building a modified system of care. Accepting new protocols, integrating new policies, and reassessing goals are some ways that have allowed the continuation of care, even if operating at a slower pace.

Impacts on oral health

All the programs shared the belief that children's oral health will suffer during the COVID-19 pandemic, but no one quite knows how COVID-19 will ultimately impact oral health overall. However, the biggest lesson learned is the extreme importance to develop strategies and implement new plans, modifying as necessary, to continue to provide care and mitigate challenges. These continued efforts in improving access to care in such challenging times have great potential to reduce the risk of growing the oral health disparity gap.

Conclusion

The U.S.'s children are at risk of losing the dental care they are accustomed to receiving through countless school-based oral health programs. These programs have popped up all over rural America and their existence and sustainability are threatened by the limited access to school children due to school closures, the establishment of virtual schools, and the restriction of guests on school grounds in response to COVID-19. It is imperative that school-based programs find ways to address the current challenges. The four non-profit organizations that were interviewed demonstrated both the successes and challenges in their SBOHPs, providing a blueprint for others in navigating the complexities of care delivery during COVID-19.

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References

1. United States Department of Health and Human Services. Oral health in America: A report of the Surgeon General. U.S. National Library of Medicine. (2000). https://sgreports.nlm.nih.gov/spotlight/nn/catalog/nlm:nlmuid-101584932X142-doc.
2. Centers for Disease Control and Prevention. (n.d.). Hygiene-related diseases: Dental caries (tooth decay).
3. Guarnizo-Herreño CC, Wehby GL. Children's dental health, school performance, and psychosocial well-being. *J Pediatri*. 2012; 161(6): 1153-1159.e2. doi: 10.1016/j.jpeds.2012.05.025
4. National Academies of Sciences, Engineering, and Medicine, Health and Medicine Division, Board on Population Health and Public Health Practice, Committee on Community-Based Solutions to Promote Health Equity in the United States. The root causes of health inequity. In A Baciu, Y Negussie, A Geller, J Weinstein (Eds.), Communities in action: Pathways to health equity. National Academies Press. 2017.
5. Institute of Medicine & National Research Council. Improving access to oral health care for vulnerable and underserved populations. Health Resources & Services Administration. 2011.

6. American Dental Association. ADA recommending dentists postpone elective procedures. 2020.

7. Carey M. HPI poll examines impact of COVID-19 on dental practices. *American Dental Association*. 2020.

8. McCall B, Shallcross L, Wilson M, Fuller C, Hayward A. Storytelling as a research tool and intervention around public health perceptions and behaviour: A protocol for a systematic narrative review. *BMJ Open*. 2019; 9(12): doi: 10.1136/bmjopen-2019-030597

9. North Carolina Oral Health Collaborative. Dental practice rule change and children's oral health: A conversation with NC Child's Sarah Vidrine. 2020.

Appendix

Instructor manual

Case synopsis

As the sustainability and success of school-based models for oral health are threatened by reduced access to school children during COVID-19, four non-profit organizations share the challenges their school-based oral health programs have faced and the strategies used to overcome them. Between enhanced and alternative communication methods, the use of telehealth, the utilization of alternative service sites, recognizing the importance of flexibility, and continuing the work of the program to minimize the impact COVID-19 has on the oral health of school children, the organizations pave the way with examples of modified operations allowing for the continued success of providing oral health services to school children.

Case objectives and use

This case provides an opportunity for students and professionals in dentistry, medicine, and public health to consider what steps can be taken to ensure the continued operation of school-based health services during limited access to target patient populations. The case demonstrates the necessity of a quick response to disruptions in the regular/ standard operations through program modifications in order to continue to meet the needs of the community.

Discussion Questions

1. Who are the key players in discovering the need for and implementing operational change?
2. From whom would support be needed to ensure successful implementation of modifications?
3. What information would be important to provide to key stakeholders to achieve buy-in?
   a. Talking points?
   b. Data?
   c. Other?
4. How might implementation be affected by limited support or poor understanding of the program and its proposed changes?
5. How would the following groups be impacted without operational modifications?
   a. Program staff?
   b. Children?
   c. School staff?
   d. What other groups may be impacted and how?
6. Describe how similar strategies of operational modifications can be used in the delivery of other types of services in times of disturbance?
7. Are there any other program modifications that could be implemented to contribute to the success of continued health service delivery?
8. Why is a quick response to program challenges so important?