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Expanding Access to Oral Health Care in School-Based Dental Programs

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ABSTRACT

Oral health complications are the most common adolescent chronic illness and reason for school absence. Because of financial and structural reasons, oral healthcare remains inaccessible to many. A few attempts have been made to deliver dental care to children at school. Still, little is known about the experiences of various providers—dental hygienists, dentists, care coordinators—in these settings. In this paper, I explore the opinions and suggestions of care providers who have worked in schools to provide an analysis of such programs from the perspectives of several stakeholders. Using semi-structured interviews and qualitative analysis, I find that in-school dental delivery faces several obstacles to successful operation, along with several effective measures currently in place, and detail what care actually looks like in school-based programs and how disconnects between public health and non-public health dental workers impact care. Based on these findings, I argue that the current system needs to be enhanced by funding and policy that liberates dental hygienists, subsidizes dental procedures, and allows for the use of tools that mobilize care. This insight may help guide future ADA or state dental policy, with the potential to expand access for all.

INTRODUCTION

There is no dispute that teeth are a part of our bodies. But why is there such a stark separation between oral healthcare and the rest of medicine? In public consciousness, insurance plans, medical records, and the distinction between *doctors* and *dentists*, the divide is exploited in ways detrimental to public health.

It is no secret that problematic disparities in access to general healthcare exist in the US (Riley, 2012). Unsurprisingly, those same trends appear in access to dental care. The similarities lead to significantly steeper barriers to entry for low-income individuals and minorities seeking dental care (Koppelman & Singer-Cohen, 2016). This trend is often attributed to professional autonomy, which gives dentists the freedom to restrict their clientele to those who can pay, limit the reaches of insurance (public and private), and benefit from lucrative, high-end procedures – all while denying nearly one third of Americans routine, preventative care (Beck, 2017).

Existing literature confirms that public access to dental healthcare is an issue, and a pressing one at that (Northridge et al., 2020). Several solutions have been proposed and studied, including utilizing dental hygienists to broaden the domain of care (Farmer et al., 2018; Hopcraft et al., 2011; Simmer-Beck et al., 2017). Doing so, however, would be in direct conflict with the interest of dentists. Within the industry, there is a strong, shared sentiment that dentists alone are qualified to care for patients (Beck, 2017). Dave Marsh, a lobbyist for the Illinois Dental Association, even went so far as to falsely claim that without dentist supervision, hygienists' services would be dangerous (Bruce, 2021). Marsh continued, "I just don't feel anybody with a two-year associate's degree is medically qualified to correct your health. They're trained to clean teeth. They take a sharp little instrument and scrape your teeth. That's what they do. That's all they do" (Bruce, 2021, p. 5).

The American Dental Association (ADA) echoes Marsh's view through policies that restrict the independence of dental hygienists. In the few examples where dental hygienists have been granted independence and their experiences studied, the literature shows that they deliver quality care and their patients are satisfied (Battrell et al., 2008; Langelier et al., 2016; Perry et al., 1997). A study has also confirmed that changes to present ADA policy would allow registered dental hygienists (RDHs) to "promote a school-based approach to public health" (Simmer-Beck et al., 2017, p. 1). Little is known about hygienists' firsthand experiences administering school-based care, along with reactions and opinions from stakeholders. My research addresses this gap. I rely on qualitative data from interviews with dental hygienists, public health dentists, dental directors, and public health administrators working in and outside of schools to understand how the dental community regards school-based care models as an independent solution. My data led me to this question: what is the current state of care in school-based oral health programs according to the various stakeholders that work for or with them? I discovered that there are several measures that are working well, but also several that can be improved based on experiences detailed to me by my interviewees. My findings confirm, from the perspective of several stakeholders, numerous concerns the existing literature had about the lack of communication between dentistry and the rest of healthcare, along with the disconnects between public health and private practice dental care professionals. For the most part, these concerns have negative implications on the delivery of care in school-based programs.

BACKGROUND INFORMATION

The Disconnect between Dentistry and Healthcare

Dentistry has been systematically separated from the rest of healthcare since the profession's inception (Otto, 2017). Even though oral health remains connected to all aspects of physical health and wellness, no continuity exists in medical records, payment systems, physician networks, or even physicians' education (Beck, 2017). This results in the US healthcare system treating dentists not as "just a special kind of doctor, but another profession entirely" (Beck, 2017, p. 2). There has been little pushback from dentists looking to amend this divide. Professional autonomy is a powerful tool dentists have utilized, much to their benefit, for a long time. It has been used to not only maintain this disconnect, but also to block the integration of dental benefits into Medicare and Medicaid, and limit what dentists viewed as competition from other dental care professionals, like registered dental hygienists (Beck, 2017; Otto, 2017). A pervasive belief in the dental industry is that dentists are primarily motivated by their pocketbooks (Beck, 2017; Otto, 2017). This motivation informs the high value placed on professional autonomy and the need for a strong political presence. The American Dental Association is a powerful health organization that flexes considerable influence in government and policy, often owing to the substantial amount of fiscal support the ADA's political action committee (PAC) wields, which surpasses even that of the American Medical Association (Bruce, 2021; Bykowicz, 2021). A recent move by the ADA in September 2021 fought a proposal to include dental coverage for all Medicare recipients. Their reasoning, which has been previously cited in response to other inclusive proposals, claimed insufficient reimbursements for care (Bykowicz, 2021). The ADA's staunch opposition to the inclusion of dental benefits in Medicare and Medicaid accounts for the high barrier to entry patients face when attempting to access care. It also helps explain the consequences of these barriers on the current state of oral health: nearly one third of Americans lack access to basic dental care (Beck, 2017).

The public's perception of oral health care does little to improve these bleak statistics. Generally, dental care is regarded as optional and patients ignore suggestions for yearly check-ups, sometimes going years in between visits to the dentist (Beck, 2017). The high price of care and disjunction between dentistry and the rest of healthcare feeds into this narrative. Dental groups and private insurance companies are more than happy to comply in a mostly private system that determines access to care based on ability to pay. These are few of the many hurdles to improving access to care, several of which reinforce each other in ways that jeopardize public health.

Dentists vs. Dental Hygienists

Dental hygienists are responsible for examining patients and providing preventative care. When a patient goes to a dentist's office, they spend most of their time with the hygienist, who will clean, scrape, polish, and take x-rays of the patient's teeth. More advanced procedures, like fillings or treatments, are left to the dentist (*Dental Hygienists*, 2021; Dubuqui, 2018). Historically, the role of a dental hygienist was analogous to a nurse—the job was created with considerations for "appropriate women's work," which lends itself to recognizable dynamics between dentists and hygienists (Otto, 2017). Though dentists enjoy their own autonomy, they fear the effects of extending the same provisions to hygienists (Jaffe, 2017). This fear is reflected in ADA laws that restrict what dental hygienists can and cannot do with dentist supervision. Generally, dentists must supervise all services hygienists deliver. Even though a dentist may not be physically present when the hygienist is working with a patient, they must "authorize prior to services" (ADHA, 2021). In certain states, hygienists can apply for limited access permits (LAPs) that allow hygienists to practice independently or to receive additional education to perform specialized services, like anesthesia. These opportunities are rare and speak to the

emphasis dentists place on preservation, along with dental lobbyists' influence, as most states have not authorized this legislation (ADHA, 2021). This also explains why independent dental hygienist practices are nonexistent and fully qualified hygienists are largely prohibited from instituting appropriate programs that might expand the reach of oral health care. In certain states where hygienists have more freedom to operate, they mobilize to provide basic oral health care to rural, elderly, farmworker, and school populations on site (Guay, 2004).

Within both professions exist a subset of individuals dedicated to providing public health care. While technical requirements look the same between a public health dental hygienist and a private practice dental hygienist, daily responsibilities and clientele look very different. Public health dental professionals work to improve the oral health of the communities they serve (Solana, 2022). Currently, there are approximately 6,000 dentists (or 3% of the total dental workforce) who primarily practice in dental safety net settings. These settings include government programs, health centers, schools, community clinics, and health departments (Solana, 2022). Details of what this provision of care entails, specifically in a school-based care model, will be provided and analyzed in my findings section along with further experiential data about these differences.

Research has shown that while improvements in oral health are being made, they are not being experienced equitably among members of the US population (Guay, 2004; Northridge et al., 2020; U.S. Department of Health and Human Services, 2000). For example, "people are more likely to have poor oral health if they are low-income, uninsured, and/or members of a racial/ethnic minority, immigrant, or rural populations who have suboptimal access to quality health care" (Northridge et al., 2020, p. 1). These disparities also call attention to its importance, as oral health is inextricably tied to "physical, emotional, psychological, and socioeconomic

wellbeing" (Northridge et al., 2020, p. 1). Thus, manifold motives exist to bring oral health to the forefront of public health discourse, especially when the impacts of such disparities are this far-reaching.

The unjust truth about oral health is that it is both essential for and theoretically attainable by all Americans (Northridge et al., 2020; U.S. Department of Health and Human Services, 2000). Regardless, dental care remains the "most prevalent unmet health need" of children living in the US (Mouradian et al., 2000, p. 1). "Children of color are less likely to see a dentist and receive preventative care" (Koppelman & Singer-Cohen, 2016, p. 1), a disparity which can be attributed to multiple factors, including financial barriers to access. Dental care is expensive and often priced out of reach for many Americans. Only one third of dentists accept Medicaid, and poverty plagues communities of color more readily than white communities (Koppelman & Singer-Cohen, 2016). Children are three times less likely to have dental insurance than medical insurance (Mouradian et al., 2000). In addition to physical pain in mouths with untreated oral diseases, children may potentially experience negative effects on their speech, nutrition, economic potential, and general quality of life. Issues within dentistry often translate to high costs and utilization of resources, like operating room services and anesthesia in hospitals, that will do little to solve questions of access (Mouradian et al., 2000). Unfortunately, much of the burden of oral health disparities fall on children, especially children of color. It is important that considerations for the harm caused by the lack of dental care be factored into the urgency with which these disparities are addressed.

Prior Research

Current literature acknowledges that a severe problem exists in the US regarding long-standing barriers to dental care. These issues can be partially attributed to the consequence of structurally separating medicine and dentistry (Mouradian et al., 2000; Northridge et al., 2020). Several solutions have been explored. Studies have focused on independent dental hygienists as a method to combat discrepancies in access to care. Alternative care models are effective (Braun & Cusick, 2016). Special attention has been paid to reaching communities classified as vulnerable. These include student, elderly, rural, farmworker, and low socio-economic status populations. To serve these populations, dental hygienists set up independent practices. The literature identifies independent practices as an important method of addressing access to care (Otto, 2017; Simmer-Beck et al., 2017). Studies also affirm their viability, following a handful of independent dental hygienists operating out of medical practices sustaining economically feasible, successful service for years (Braun et al., 2013; Braun & Cusick, 2016). To do so, however, the restrictive ADA laws require attention and reform, as accessibility of care is only increased when dental hygienists are legally allowed to operate independently (Naughton, 2014; Perry et al., 1997). Collaboration with already established public and private entities, like schools, hospitals, and medical practices could better enable the healthcare industry to support community oral health (Harrell et al., 2017).

Studies examining patients' satisfaction with care found that across diverse demographics—elderly, adolescent, and middle-class patients—independent dental hygienist practices delivered a high standard of care (Battrell et al., 2008; Langelier et al., 2016; Perry et al., 1997). This high standard of care translated into several examples of improved oral health outcomes. Farmer et al. conducted a study in Canada that confirmed the important role dental hygienists play as "key change agents" in reducing oral health disparities that discriminately

plague the country's rural, low-income indigenous populations (2018, p. 1). Braun et al. posit that these preventative and restorative dental health services can improve vulnerable patients' oral health (2013). Langelier et al. found that expanded scopes of practice for dental hygienists resulted in improved oral health for adults (2016). Together, this body of literature indicates that regardless of dentists' diminishing hygienists' capabilities, there is sound reason to acknowledge their possible role in delivering quality care to unreached communities.

Simmer-Beck et al. acknowledge the impact that a lack of oral healthcare has on low-income, school-aged children (2017). They propose the revision of dental practice acts to extend more liberties to dental hygienists that would allow them to provide care in school-based settings. The authors found that changes to policy would increase the role of RDHs in public health dentistry, but not the scope of RDH services, self-employment opportunities, or the number of practicing RDHs. These findings affirm the positive impact of changes to dental practice acts on public oral health, while disproving dentists' perception that increasing RDHs' involvement in public health poses a threat to private practices. This study provides a foundation for further research into questions that remain unanswered.

The current literature does not address the perspective of various stakeholders, apart from recipients of care. Much of the focus is on making the case for independent practice dental hygienists. Those researchers do so by proving that quality of care is maintained and satisfaction is achieved, all from the patients' perspectives. However, the case for expanding access to oral health care needs holistic insights from dental hygienists, dentists, and policy makers. Their opinions can inform the viability of independent practice dental hygienists. Furthermore, existing studies that utilize qualitative data do so as a supplement to quantitative data. Interviews and an in-depth focus on stakeholders' experiences are scarce. In this project, I seek to fill these gaps by

hearing more directly about conditions of care from multiple perspectives of stakeholders involved in school-based care and building my subsequent conclusions and policy recommendations on this interview data alone.

The Donabedian Model and Integrated Care

A classic framework for evaluating quality of care is the Donabedian model (Donabedian, 1966). The model breaks down its assessment into three dimensions of care that can be used to determine quality: structure, process, and outcome. *Structure* refers to the context of care delivery. Examples of factors included in structure are the physical facility itself, any equipment used, human resources, and other logistics, like trainings and payment systems. The structure of a system is important because it frames and influences how healthcare providers and patients operate. *Process* concerns all actions that constitute "healthcare." Actions from care providers, patients, and their family members all qualify. Data about process reveals a lot about general quality of care because healthcare delivery is an essential consideration of quality. *Outcomes* can be any effects healthcare has on recipients of care or populations. These outcomes are not just limited to changes in physical health, but also include behavior and knowledge. Because one of healthcare's primary goals is to improve health, outcomes are seen as some of the most important indices of quality of care. Measuring outcomes can be more difficult than the other dimensions because it is difficult to isolate outcomes solely attributed to care from other influences, like social or cultural factors. Donabedian refused to rigidly define quality care so that the model could have applications for a variety of situations. Assessing these three dimensions individually cannot fully capture quality of care and each is designed to fill in gaps

created by others. Thus, users of the Donabedian model must consider all three in conversation with one another to produce the most comprehensive assessment of quality possible.

A large body of work supports the efficacy of Donabedian's model in assessing quality of care (Berwick & Fox, 2016; Coyle & Battles, 1999; Van Houdt et al., 2013). However, a common critique of the model is that it fails to account for the impact of other factors not strictly related to healthcare. To address this critique, Coyle and Battles expand upon the original model by "considering as many possible of the antecedents of medical care that affect outcomes" (1999, p. 6). These antecedents include patient and environmental factors. Patient factors can be genetics, demographics, beliefs, attitudes, and preferences. Environmental factors focus on the social, political, personal, and physical characteristics of patients and the health system. Coyle and Battles argue that the dimensions of care cannot be understood without taking the antecedents into account (1999). Donabedian himself continued to build upon the model by clarifying his initial definitions of structure, process, and outcome (Donabedian, 1980). He stressed that structure, process, and outcome should not be mistaken for quality themselves, but should instead be used as a guide for the types of information to be collected for this assessment. He also incorporated critiques into later iterations of the model. In this paper, I will apply Donabedian's quality metrics to the delivery of care communicated to me by RDHs to evaluate the viability of these alternative care delivery models.

Strategies for determining the quality of care have been incorporated into several other models describing healthcare. Similarly to later versions of the Donabedian model, the integrated care model recognizes the importance of outside factors in the delivery of care. Integrated care is "required when a coordinated set of services is needed to cover the full range of client demands" (Minkman, 2012). In theory, integrated care should "bring together inputs, delivery,

management, and organization of services as a means [of] improving access, quality, user satisfaction, and efficiency" (Gröne & Garcia-Barbero, 2001, p. 11). Where systems have traditionally been divided, integrated care seeks to rejoin various entities to improve outcomes and work towards common healthcare goals in a more efficient way. A lack of integration means that performance and patients suffer (L. Kodner & Spreeuwenberg, 2002). More recent studies on integrated care argue for a patient-centered model (Goodwin, 2016; L. Kodner & Spreeuwenberg, 2002). To put the patient first means to consider patients' communities and the relationship between health and social care. Effective relationships between care providers, the community, hospitals, and government operating under one governing body and set of rules are regarded as the strongest form of integration. This concept also has broad applications—although it has traditionally been used to create pathways for chronic disease care, similar strategies should also be used to tackle broader issues like health and wellbeing through partnerships. If a system is truly concerned with its populations' health, it needs to look "beyond specific service models" and start exploring how health and social care can work together (Goodwin, 2016, p. 4).

The integrated care model in conversation with current issues plaguing oral health raises questions of what types of partnerships could be utilized to improve care. The literature helps identify groups who suffer from disparities in oral care, such as lack of access to basic oral health services. Based off the integrated care model, communication and coordination between various stakeholders in the dental industry could positively affect patients' oral health (Goodwin, 2016). In the existing literature, this trend persists across care for adults and children. The same trend should hold when analyzing school-aged children. Deviations from this expected outcome would then be attributed to a failure to orchestrate partnerships according to social and environmental factors that define a population.

DATA AND METHODS

NAME	PROFESSION	STATE
TAMARA CHRISTENSEN	RDH, professor, consultant	Georgia
KIANA COOPER	RDH	Florida
RUBY DAVIS	RDH	North Carolina
JESSICA MITELMAN	RDH	Iowa
DENISE MURPHY	RDH, professor, public health official	Illinois
KELLY SANDERS	RDH	Illinois
DR. SHONDA FRANKLIN	Public health dentist	North Carolina
DR. JACLYN FRASER	Public health dentist	North Carolina
DR. NATHAN JACOBS	Dental consultant, public health dentist, public health administrator	North Carolina
DR. IRENE JOHNSTON-BANDA	Public health dentist	North Carolina
DR. EMMA NOVAK	Public health dentist	North Carolina
DR. LAUREN WALTERS	Public health dentist	North Carolina

Table 1. Interviewees and their professions

Data were collected from twelve interviews with current and former RDHs, public health officials, educators, dentists, and dental care activists (as seen in Table 1). Interviews took place over the course of four months. I spoke to participants over Zoom or phone and each interview ranged from 40 minutes to 80 minutes. Interviews were semi-structured, allowing for greater flexibility with questions and probes, along with room for additional questions that arose from

natural conversation flow. All interviews were centered around an interview guide with nineteen questions. Not every question was asked during each interview. I asked every participant a set of general questions concerning access to care, how they delivered care in their respective school-based programs, and their experiences navigating different structural and organizational barriers, but I also prepared and asked specific questions depending on the interviewee's profession. Dental hygienists were asked about their experiences in school-based programs and relationships with dentists. Dentists and public health officials were asked about their perception of dental hygienists' roles in access to care and about the effects of the control exerted by the dental industry. Limited numbers of oral care professionals working in public schools resulted in significant difficulty recruiting interviewees. As a result, my search for participants needed to be broad. I was able to leverage personal contacts (dentists and dental hygienists), who connected me with relevant colleagues. Some searches for local care administered in schools were effective. However, the majority of my participants were sourced from cold calls and emails. I called or emailed every state dental hygienist association in the US, and through snowball sampling, found individuals who were willing to be interviewed. This meant that my research did not concentrate on a specific geographic area or type of community. Participants described their experiences in urban, suburban, and rural areas in Illinois, Georgia, North Carolina, Florida, and Iowa. These oral care professionals administered care to students described as working-class poor, falling 200% below the poverty level, or as recent immigrants to the US.

Interviews were recorded with verbal or written consent using the built-in record function for Zoom, or Rev Call Recorder for phone calls, and transcribed using an artificial intelligence software called Otter.ai. Transcripts were then edited for clarity, making sure to preserve content and the interviewee's natural speaking style. To protect the privacy of interviewees and the

establishments they represented, pseudonyms were used wherever appropriate. Data collected in the interview transcripts were analyzed for content via hand-coding. My hand-coding method included identifying, marking, and highlighting relevant information according to topics of interest. Common themes I looked for while coding my transcripts were frustration with systemic limitations, antagonistic feelings towards dentists, successful and unsuccessful standards, along with general descriptions of what care administration looked like in my interviewees' respective programs.

I have no personal connections to the oral healthcare profession, nor am I interested in pursuing a career in the industry. Despite making these facts clear in my initial communications with participants and when asked during the int**e**rviews themselves, several interviewees continued to mistakenly identify me as a registered dental hygienist or a dental hygiene student. The content of my interviews often included technical language and references to industry lingo or commonly held beliefs. I felt, at times, that interviewees treated me differently or revealed more polarizing opinions because they thought I could relate to them. This was realized only in contrast to the temper of our conversations after I clarified my position. Even when initially identified correctly as a student, interviewees often expressed surprise at the content of my questions and my knowledge of issues surrounding access to care. I believe they still felt as though they could speak freely with me because a base level of knowledge of the situation had already been established. As a result, I do not believe there are significant distinctions between interviews where my position was correctly identified or not, but more within the interviews themselves where my position was latently realized.

FINDINGS & ANALYSIS

I. Conditions Making Care More Difficult

The Separation of Dentistry from General Healthcare

Within the wider world of healthcare, dentists find themselves in a unique position. A dentist helps patients maintain oral health and is addressed as "doctor," but many official structures in healthcare fail to connect dentistry and medicine more broadly.

Denise Murphy, a former RDH currently working in public health administration in Illinois, puts it like this: "Somehow, somewhere along the way, we get separated from the rest of the body. So do the eyes." Almost every interviewee offered their own iteration of this analogy, placing dentistry in company with ophthalmology as forms of health care structurally separated from general medicine. It is clear from the frequency with which this sentiment arose that many oral healthcare professionals feel this way. Dr. Lauren Walters is a public health dentist in North Carolina. She expresses her frustrations with this separation:

> It's not like you can separate your body from your eyes, or your body from your mouth. You just can't do that. Patients with diabetes are also probably having problems with teeth. Very often, they either don't have their teeth or have significant periodontal disease, to the point where they've lost multiple teeth. As you start seeing those things, you realize the body is completely and totally connected. Why do we separate out and piecemeal healthcare? I understand the need for specialists—but at the same time, a general physician can see you and say, 'I want to refer you to a heart specialist. I want to refer you to this person or that person.' But there are not very many times—in where we are now—that a physician says, 'I need to refer you to the dentist,' at a medical visit.

This perspective shows how deeply the division is ingrained in healthcare. Specialists are frequently called upon for expertise beyond a general physician's scope of care. Even when patients can benefit from the service of a dentist, they are rarely remembered or referenced. Jessica Mitelman, a registered dental hygienist operating in Iowa, recounts a similar experience:

> So, I don't think anybody grasps it. We have a gal upstairs in our building and she came down the other day said, "I just need to talk to somebody who will understand." She was in a medical office and trying to explain that the doctor can look in a child's mouth and refer them to a dentist. It's not rocket science. If you can look in somebody's nose and

> determine that they have a deviated septum, you should be able to see a black hole on the tooth. [Teeth] all start white, so anything off white is a problem. So they're like, "Well, what am I going to do if I see something?" Give them a list of dentists, you know! At least start the conversation. Get them thinking that the more professionals somebody hears from, the more likely they are to take action.

On a larger scale, oral health is intrinsically related to overall health, but does not receive the consideration that might help explain health issues manifesting in other parts of the body. Even in situations where a referral to a dentist is prudent, the choice to utilize dentists as a resource is under-recognized. Jessica's story suggests a straightforward way that oral health could be incorporated into medical checkups; however, despite the relative ease with which this additional check could be adopted, such integration remains rare (Beck, 2017; Otto, 2017).

Additionally, there are systemic ways in which dentistry is alienated from health care. Dr. Lauren Walters continues:

> We've got to stop having medical insurance and dental insurance and vision insurance—we need insurance, period. Patients need to know that they have a way to pay and it shouldn't be cherry picking.

Kiana Cooper, a registered dental hygienist practicing in Florida, agreed with Dr. Walters and provided another example of the same separation analogy:

> There was no real point where someone decided let's take teeth and eyes out of health. When you're signing up for health insurance, why do we have to have a separate health plan for dental? I think for a lot of people—they think—they consider dental as being an elective or, you know, a benefit, or something that is not needed—kind of like a luxury service. So, I think perhaps [we should] make it a part of medical and showing it as equity instead of an elective.

These fragmented insurance policies are another way the separation of dental care from general healthcare is reinforced. Several conditions contribute to this systemic divide. As a result, its effect takes a toll on everyone—especially those who cannot afford to endure the monetary fallout from the system. Instead, they must compromise on their own health. These conditions

play a large role in disparities in access to care, consistent along the same lines of general health care that is seen in the literature.

Separation also translates into misunderstandings about the different ways dentistry and medicine function. Dr. Jaclyn Fraser, a public health dentist working in North Carolina, provides one example of the many operational differences:

> Dentistry is not always understood because we operate so much differently than medical. [Physicians are] looking at how many visits [they have with] the patient ...and dentistry, we are really like the surgeons in [what] we do. We're procedure-based, we're not visit-based. So, our procedures dictate our revenue.

This difference in generating revenue helps explain distinct motivations and policies in dentistry and medicine. Dr. Fraser implies that the conditions dictating healthcare are assumed to be the same in dentistry, and care is not taken to parse out the discrepancies. Health is prized and emphasized in America; however, the US healthcare system fails to include or pay any particular attention to oral health (Mouradian et al., 2000). As a result, there is less significance placed on teeth. One way this is manifested is a lack of urgency to understand these differences, but also a general dismissal of situations that would raise alarm if they were considered in a medical context. Denise Murphy provides an example:

> If you wash your hands and your hands start to bleed, you would freak out. But people brush their teeth and their gums bleed, and they think nothing of it. So, we have dummied down this profession to the point that we are not considered to be important. And during the pandemic, what shut down? Dental offices got shut down. We should never have shut down. We are healthcare providers. Dentistry is essential and it should be considered essential. We should not dummy down a cleaning, we should call it a prophylaxis or a therapeutic. But instead—here's your little goodie bag with your goodies in it. No! Here are *oral hygiene supplies*, you know what I mean?

Denise points out several terms and ideations that pervade common thought about dentistry. The insignificance of dental care was reinforced by what the pandemic deemed to be 'essential,' along with the casual terminology used in dental offices. Part of the struggle of dentistry in

general, and public health dentistry especially, is convincing patients of the importance of taking care of their teeth. All these signals, from the way insurance is structured, to the way dental expertise is not comprehensively utilized when evaluating patients' health, to government determinations of importance make administering public health dental care more difficult. Even if any of the following hurdles were acknowledged and properly addressed, there is no guarantee that services will make an impact on public health if the discourse around oral health is not first diligently confronted. The potential for this issue to occur is reflected in Jessica Mitelman's experience with reception to information about teeth:

> I talked to a young women's resource center Monday night, and it was young women under the age of 25 that were pregnant or had a child. And [the director was] like, "anything on teeth is great." We talk about teeth, but nobody cares when we do it.

Jessica's experience illustrates how information about teeth might be received. In this case, people were apathetic to the message, despite there being a pointed effort to engage with a certain demographic about oral health. Broadly, respondents indicated frustrations with the lack of communication between dentistry and the rest of healthcare and the negative fallout, whose impacts result in lower quality care and miscommunication.

Structural Barriers to Access

Unfortunately, there are several structural barriers built into the US healthcare system that impede access to care. Kiana Cooper discusses some of the most common obstacles she has seen:

> I think one of the most common is financial barriers, it's expensive to get to get dental care. They usually have to be insured, otherwise everything's out of pocket and it can cost you thousands of dollars for dental treatment. If you're insured and have significant work that's needed, it'll still cost you thousands of dollars. So that's a pretty big barrier for people to get care.

Financial barriers might seem the most obvious; however, it is important not to discount the role they play in limiting access to care. Most of the interviewees that I spoke to alluded to some sort of financial barrier (including a lack of insurance due to cost) as a major reason why disparities in oral health exist. More importantly, Kiana highlights how having insurance alone will not remove all financial barriers. For patients who need extensive work, the cost of treatment can still affect their access to care.

Kiana continues:

> Another is transportation. There are some communities, even in Kelburg County, where there were no dental clinics, none... If you don't have transportation and something's not close to you and you have to, you know, pay someone $50 to get there—that's a pretty big barrier to care.

This quote touches upon definitions of access, which will be explored in a later section, and how accessing care can hinge on the availability of transportation to a dental clinic. Transportation is also a big issue in rural areas, where public transportation is either unreliable or completely absent. Either way, there are financial and time costs associated with a lack of transportation that can complicate things.

Other complications can arise when patients and providers do not speak the same language. Kelly Sanders, a dental hygienist, described her experience with this hurdle:

> One barrier is language, and in the community where I mostly work, [patients] predominantly [speak] Spanish. And if a lot of the dental clinics don't have Spanish speaking staff, or if they don't have their literature information in Spanish, it could be challenging for individuals to understand the importance of why they need to get back there.

Having materials and services in patients' languages could mean the difference between patients opting for care or not. Many of my interviewees mentioned the importance of having bilingual staff available for their patients. Being able to fully understand what changes are being made to your body is essential. Additionally, when information about care is delivered in a patient's native

tongue, it can help establish trust. Dr. Nathan Jacobs, a health policy advocate, said this: “so it was both to help ease concerns and make sure that [patients] felt they could seek services without fear of being reported [to ICE].”

Dr. Emma Novak, a dental director in North Carolina, describes how several of these structural barriers identified above can be addressed within a school-based care setting:

> Support for school-based programs, has helped bridge that gap and provide access to care. The programs like this, were able to break some of those barriers for transportation that the families face, and financial, because these programs are covered.

Dr. Novak makes a compelling case for the merits of school-based programs. Several significant issues that complicate accessing care are mitigated. Additional transportation needs are eliminated and financial impediments that students would encounter in private practices are addressed by free or reduced priced services.

Misunderstandings about the importance of oral health reach through parents and teachers to affect their children. Most school-based services require introduction and information from teachers along with some form of permission from parents. Jessica Mitelman describes common issues that make care difficult:

> So, a lot of the kids that need the most treatment also have the parents who neglect to take them for the treatment. Trying to get those permission slips back is hard and is why public schools used to do a preschool night where they would register every kid. They quit doing that after COVID and the teachers did it at the home visit, which is also great, but you can tell the teachers that support the program from the ones that don't. The hard part is just trying to get the teachers on board, and to have them understand what's in each student's mouth. I know enough of the teachers that are like, “this is a waste of my time.” So I'm always like, “Hey, can you come look at this? Open big, buddy. Have a look. Has he been complaining about anything? Because, you know, these teeth are completely shelled out.”

Lack of urgency and response from parents and teachers can be traced back to the lack of emphasis on oral health care. In a school setting, teachers and parents are instrumental in the success and efficacy of alternative care models. When they don’t fully understand the purpose

these programs serve, there is no expectation that they will then function at capacity and address the most amount of need possible; especially when the importance of these programs is not being communicated to students and their parents.

Additionally, there is a lot of red tape programs need to sift through to even get to the point of viable care provision. Dr. Emma Novak laments the impact red tape has had on public health dentistry:

> It's just unfortunate that things are so tied up in red tape. I see a lot of good dentists get out of public health and get out of public policy because it drives them insane. It's almost [causing me] a little bit of PTSD just talking to you about it. Because the more you talk about it, the more you realize [things are] not quite right.

Dr. Novak identifies red tape as a major barrier to care because it pushes dentists out of public health dentistry. Navigating rules and regulations can be exhausting, especially when there are clear ways to improve those rules and regulations. Jessica Mitelman recounts some of her negative experiences with billing:

> We'll wait for three months after we went [to provide care] and then bill to see if it falls in the billable range. So instead of billing in real time, it'll actually take us until August to get billing for this school year done. We asked all the questions and they're like, "yeah, you're fine, you're good." Well, then we had 1000 claims denied, so we're not so good.

When school-based programs operate on reimbursements, they must bill the services they provide and deal with any subsequent issues. In this case, Jessica's program had to amend the 1000 claims that ended up being denied. For her, billing was not going to be received instantaneously. But with so many additional claims being denied, it would take even longer for payment to be properly collected. Financial delays like this only hurt these organizations and for school-based care systems that are expecting to be operating at or close to a deficit, adding on time to receive payment could cripple the organization and snuff out a badly needed care provider.

Certain rules and regulations within Medicare and other sources of reimbursement might necessitate drastic changes to procedure that contradict a program's operations. Jessica Mitelman details a proposed change to Medicare that would have impacted the viability of her program:

> One of the other changes that was scary for a hot minute was [that] Medicaid was going to require an x-ray and a preauthorization before doing a stainless-steel crown. This was really going to limit the amount of work that we could get done in a short period of time. If we had to take the x-rays, send them in for a preauthorization, and have it back—we weren't sure if [providing care] was even going to be viable.

Issues with Medicare stipulations came up frequently with my interviewees. Many expressed frustrations with certain rules their programs were required to adhere to. Often, rules make little sense in the context of dental care or make administration of care a lot more difficult. This mismatch was attributed to most regulations originally being written for medical care or policy makers' limited understanding of what would work well. Kiana Cooper gave another example of frustrations with reimbursement laws:

> I would say that a lot of the reimbursement laws make [providing care] challenging. There are stipulations as far as when the child can have a dental exam because they have to have a dental exam within 13 months of [seeing] us. Removing the stains or removing the plaque or providing appropriate [care outside of a clinic requires that] the child have a dental exam within 13 months. But if you're inside of a clinic, they don't have to have another exam for two years. Of course, being able to provide more services in the community, other than just preventative, is also a setback to improving health. That is limiting and kind of suppresses some of the care that we could be providing.

The distinction between requirements for public health practices and private practices exacerbates existing barriers to care. Students are likely receiving care from school-based programs because they have difficulty accessing care elsewhere. Reimbursement laws, like the one described above, enact limitations on alternative care providers and by extension, their patients, in ways that continue the cycle and make access harder. In the same vein, there are also several restrictions in place that bar mid-level providers, like dental therapists, from practicing. Dental therapists function akin to physician assistants. They can independently provide services

like fillings, placing crowns, and extractions (Corr, 2019). Kiana Cooper shares why restrictions on these providers hurt patients:

> Being able to be seen by a mid-level provider, like a dental therapist, can greatly improve the health of the community because sometimes, our waiting lists for surgery and our patient callback list is—you know, we're waiting six months to a year for their surgery visits. If we had been double providers, we'd be able to take some of that load off of the dentist and have them work at the top of their license.

When government policy prevents apparent solutions, like dental therapists, from being implemented, they are ultimately contributing to the issue. When access is lacking, being able to alleviate the responsibilities of the most specialized, demanded agent is crucial for addressing backlogs of patients. Opening up access to mid-level providers would no doubt reduce the need being addressed by school-based programs. As later described by the experiences of my interviewees, the volume of patients being cared for by school-based programs is astounding and requires staff and resources to be spread thin.

A big burden for many of these school-based care programs is making sure that they have adequate funds to support their practices. The nature of these school-based programs dictates that they are not expecting to operate at a profit or even generate revenue. Occasionally, they are fully supported by foundations or grants. All have legitimate concerns about where the funding is going to come from. Jessica Mitelman discusses reimbursements:

> The fees for reimbursement are so low that you're losing the dollar of allowable services. Primary health care, being federally funded, actually gets paid at a higher level than we do. I think [other dental care professionals] would like to be more willing to help, but they don't want to take the hit financially to actually complete the services.

Because current reimbursement rates are so low, it does not make financial sense for many practices, especially ones not tailored to public health needs, to provide these services. The state of reimbursements also helps partially explain why so few private practices accept Medicare and

Medicaid. As a result, options for patients who are only able to afford care through Medicare or Medicaid are severely limited.

The separation of dentistry from general healthcare and structural barriers preventing access to care help create a cycle that simultaneously reinforces the need for school-based care programs, but also makes delivery of care within the programs more difficult. Despite these obstacles, several features of these programs have proven successful.

II. Conditions Working Well in Practice

Importantly, interviewees have identified several conditions that are working well in their school-based care programs. As expected, having a supportive team or network of people is imperative for non-profit work. Jessica Mitelman said this about some of the volunteers she works with:

> I've got a couple of dentists that volunteer on the mobile very rarely, but [most are] almost like, "What do you have at three o'clock? Are you accepting company? What do you have?" And I'm like, "you're gonna love it. It's a screaming two-year-old. And it's bad. Okay, great." You know? So it's—I've got people I can lean on. That's super helpful.

Here, Jessica is referencing help from volunteers. Even though they may not volunteer as often as she might like, most are enthusiastic and eager to lend a hand when they can. As a result, Jessica feels like there are people, outside of staff she is usually surrounded by, that she can rely on and get help from. However, several interviewees mentioned that several aspects of their job are made easier or more bearable because of the people that they work with on a day-to-day basis. Dr. Irene Johnston-Banda, a public health dentist and dental director, said this about people in her "C-suite":

> Being a dental director and public health is very different from being a dentist in private practice. Stress is different, the amount of patients that we see, and the social management of those patients is very different. And I feel like the C-suite team, which

I'm a part of, they are very supportive.

The “C-suite” Dr. Johnston-Banda is referring to is comprised of the CEO, COO, CFO, etc. of an organization. Having the support and understanding of those in charge of running the organization can be instrumental in accomplishing goals or solving problems. The fact that Dr. Johnston-Banda’s C-suite recognizes the unique challenges public health dental care providers can face is only an asset to her practice.

A few interviewees also referenced more formal networks of support, such as groups of individuals who have similar jobs and share similar responsibilities. Dr. Lauren Walters shared her praise for the support she has from the public health dental community in North Carolina:

> We have such a small dental community that we can reach out to each other and say, “Let's look at this. Does this need to be changed? And if so, let's change it.” And we can take those steps forward to do just that. And that's an amazing position to be in—in any vocation, in any occupation, in any profession. And then our state also offers, through our North Carolina Community Health Center Association, a dental directors’ work group. It gives us all an outlet to say, “I'm frustrated by our managing system,” or whatever software you're using, and ways to say, “Hey, okay, if six of us are seeing the same problem, maybe we can reach out, and if other people are seeing it, maybe we could facilitate a change there?”

Dr. Irene Johnston-Banda referenced a similar network of support:

> So there is an organization that I'm a part of that was founded, I think, 10 or 15 years ago. Basically, it got together all of the dental directors and all other dental hygienist people who are in public policy in one arena so that we can all discuss our issues, our woes, and develop friendships. They support me all the time. If there's a problem I have, I send it out [to them].

Dr. Walters and Dr. Johnston-Banda are part of a specific communities of public health dental care providers who share similar jobs and responsibilities. Just as both alluded to, it is expected that these communities would face similar issues and frustrations unique to their roles as public health providers. Being able to talk about their work with others who are able to empathize and

relate is healthy, not only for troubleshooting, but also as a way to vent. Dr. Walters has also praised community for providing a way to organize:

> So I can tell you that in North Carolina, if you want to have a voice within dentistry, you have one. All you have to do is use it. And that is huge kudos to our Dental Society, to our Dental Examiners, our dental board, and to all the people who take part in dentistry every day. [I love] being on a committee within North Carolina, being able to reach out and send an email to our state dental attorney because I had a question about maybe changing an act in the future. I think that's amazing that I can partner up with a private practice pediatrician, I can partner up with a geriatric practice practitioner, I can partner up with somebody else who does public health in the sand hills or at the coast, and I can partner with somebody who does only cosmetic surgery. And we're all on the same page. It's like, if you think that needs to be changed, show me and I will support you, even though they maybe don't do what I do.

Just by nature of being part of public health, any change to the current system needs to go through standard government procedures at the federal, state, and local levels. Organizing with peers and having access to individuals closest to where policy is being determined is incredibly important in ensuring effective and appropriate policy. Dental care professionals who witness the reality of oral health have the opportunity to integrate their experiences into policies.

Another way partnerships have had a positive impact is when integrating the perspectives and opinions of patients and individuals who are not directly involved with providing care. When asked about structures that make his job easier, Dr. Nathan Jacobs mentioned a coalition he's a part of:

> So what's beautiful about a coalition is that we have the support of so many other organizations that we share resources with. And we're about 1400 patients and individuals that are members of our coalition–so very diverse group of folks, from those that are non-health related, to those in education, to policymakers, etc. The work could not be done if there wasn't a strong coalition.

Similarly, Dr. Walters talked about incorporating representatives from insurance companies into weekly meetings with the health group that runs the clinics she works in:

> In North Carolina, a lot of the people who represent insurance companies in local endowments have a representative at a lot of our meetings so that they've got their pulse

> on maybe not what gets reported, but what is actually the discussion from those with boots on the ground.

While it is important to be hearing directly from those administering care in these school-based settings, incorporating the opinions of patients and insurance companies makes complete sense when considering how big a role these two stakeholders play in shaping what care looks like in these alternative care models. They also ensure that there is some communication between stakeholders, and that each entity has an idea of what the other is doing, focusing on, or having trouble with. The previous section described how the lack of communication between the medical and dental industries has negative impacts on care. From the experiences of Dr. Jacobs and Dr. Walters, there is further evidence of how partnerships like these add to the conversations surrounding care.

One new development that has made an incredible impact on access to care is the use of silver diamine fluoride, or SDF. Dr. Jaclyn Fraser describes how SDF works:

> Something that helps address access to care is called silver diamine fluoride. The acronym is SDF, and it has been approved by Medicaid. It is an antibiotic liquid type that you apply on a cavity, and it arrests the decay. In other words, it stops it in its tracks, so that if that child isn't able to see a dentist for a year or two years, that cavity is not getting any larger. Ideally, it's best to be applied every six months. The positive is that it arrests decay. The negative is that it turns the decay black. So not as good on front teeth. But if you think about the back teeth, the back teeth have cavities, the cavities are going to be brown or black anyway if they're decayed. So, on the posterior teeth we will apply that SDF. We have to get a parent's permission and we actually have a picture of what it looks like on the tooth so they'll know what they're getting into. But it stops the cavity from progressing.

SDF was mentioned by several interviewees as an exciting tool that is being rolled out in many of these school-based care programs. I find it interesting that nearly everyone I spoke to regarded it as a public health tool. Therefore, dentists, hygienists, and public health officials were advocating for it to be viewed as such, especially in the context of preserving its coverage by Medicaid. Dr. Fraser continues:

> Why is that a good thing in our practice? We are backed up from a pandemic. We have still not caught up from being closed for a month. So, if a patient comes in today, it might be four months before I can get back in and get their cavity fixed. I'm embarrassed about that, but that's the way it is because we're still backed up. If I can put that SDF on that cavity, then I can sleep at night because I know that cavity has been stopped in its tracks and it's not likely to flare up before I can get that patient in to get the filling done. When we have a baby tooth that has decay, and the child's going to lose it within a year or two, it's even better because really we're just maintaining that to make sure the cavity doesn't get any larger until they exfoliate or lose that baby tooth. Because it's a baby tooth, we're just kind of helping make sure they don't have any pain until it's time for it to come out. So I would call SDF a game changer in the area of access to care, because the hygienists can provide preventive care, but they can also apply the SDF when they're out in the schools so that you have a patient that hopefully will not end up having dental pain prior to restor[ing] it.

This quote from Dr. Fraser touches on a lot of the issues plaguing public oral health right now. Issues of accessing care play into long wait times for services from organizations like the ones Dr. Fraser is involved with. Even though she places the responsibility of not being able to see patients on herself, it is through no fault of her own that the demand for her services is so high. Nevertheless, she identifies SDF as a "game changer" because it can make the waiting time (which is likely inevitable with non-profit programs) in between visits not entirely devastating to a patient's oral health. Like with so many other techniques, technologies, and practices entering the public health arena, this is a temporary solution to issues that are being created and maintained by much larger systems and circumstances. While it is so much better to have tools like SDF rather than not, they cannot be replacements for actual change. However, while change is in the works, it is clear that SDF has been such a benefit to patients and care providers within public health. The efficacy of SDF and its multipurpose use inform calls for this treatment to continue to be covered by Medicaid.

The use of SDF points to a larger trend in public health dentistry that has been regarded as positive. Dr. Lauren Walters talks about the importance of emphasizing preventative care:

> So what you want to make sure of is that as treatment options change, the knowledge within the dental world changes, too. Dentists will be saying, "Oh, that person probably treated it with silver diamine fluoride," as opposed to, "well, you have a cavity here and you have a cavity here, we have to drill it and fill it." And so trying to work from a preservation and from a less invasive means of dental care is really big.

Several interviewees mentioned an emphasis on prevention as opposed to automatically assuming that the solution to the issue is to perform invasive procedures. Technology, especially SDF, seems to be keeping up with this general shift, which is good news. As seen with the administration of SDF, less invasive procedures are more accessible to patients because they require less time and fewer visits (including follow-ups).

Since the start of the pandemic, telehealth has become an increasingly common way for patients and providers to communicate. In the public health dental world, it has been used as a communication tool between dental care providers who are on-site and those (usually dentists) who are not. This allows care providers like dental hygienists and dental assistants to expand their domain of care and cover more ground by fulfilling requirements for dentist supervision, but through a more flexible medium. Dr. Jaclyn Fraser talks about what utilizing telehealth has looked like in her experience:

> You can have a hygienist on site at a school and the dentist can be in another location. That hygienist could take photos or videos, take an X-ray, and send them to the dentist to evaluate so the dentist won't actually have to be on site. One of the rules that just got clarified by the North Carolina Board of Dental Examiners was that the teledentistry exam or virtual exam would equal an in person exam.

Dr. Lauren Walters also identifies additional benefits of teledentistry:

> Whenever you have somebody who visits a medical office, part of what they're asking is, "hey, do you have any issues going on in your mouth? Can I take a picture?" There's a lot of telehealth and teledentistry that can happen. You've got this wide-open avenue for patients who may have gone through a lot to get that one visit—they may have transportation arrangements, they may have had to arrange for childcare, they may have had to arrange for time off from work, all of these types of things—and then you've taken their medical visit and made it medical *and* dental. You've really done some very appropriate favors for a patient. But it's really shouldn't even be considered a favor, it

> should be considered patient care, period. Trying to reach those people is a big deal. Medical and dental can work together to see one patient because, if your mouth's not healthy, I probably don't have to tell you the rest of you is not healthy either.

As identified previously, establishing relationships between dentistry and the rest of healthcare is important for access to care and overall patient wellbeing. Dr. Walters points out how this simple use of telehealth can transform a medical exam into one that incorporates dental. Doing so has preventative implications and reinforces the connections between good oral health and good overall health. Taking photos for a dentist to evaluate or sending a quick note over to a dentist's office is a simple and quick way to marry the two.

While aspects of public health dentistry prove frustrating for providers operating within its constraints, several resources—including community and technology—have improved delivery of care within school-based programs. A common thread running through these solutions is that they are born from, or address, specific needs identified by those actually working in public health dentistry. This is in contrast to the problems plaguing public health dental care provision, which were created by entities without regard for the realities of public health dental care. Dr. Emma Novak summarizes this view:

> I would just say people need to start listening to the people who are doing the brunt of the work. Yes. There is a clear disconnect between those of us—those of us who do the work, and those of us who are making policy. I think it's it is an understatement to say that, you know, there's not a disconnect. [Policy] seems obvious to people, but unless you got boots on the ground and you're on the front line, you just really don't understand it. But there is a true disconnect.

III. Non-Public Health Dentists in Relation to Other Dental Care Professionals

In almost every profession, there exists a stark divide between working conditions for professionals in the public and private sectors of their field (Byars & Stanberry, 2018). Often, the reputation of these conditions precedes expectations, so individuals have an idea of what to

anticipate once they enter the field (Byars & Stanberry, 2018). Familiar conceptions about public vs. private healthcare hold for dentistry. As explored above, issues associated with being in public health do not make public health dentistry service easy. Challenges with staffing, funding, policy, and equipment must be accepted and worked around. Such issues are less common in private practices, and often, the divide between private and public health dental care professionals is intensified by how isolated private dental practices are from one another and from the issues plaguing public health (Beck, 2017). One complaint several public health dental professionals had was that people in private practice have no idea what the condition of public health is like. Dr. Jaclyn Fraser offered her own experiences to illustrate this divide:

> Well, for those who have not seen kids with baby bottle decay—who come into the office and every tooth is decayed—if that's not who you're seeing at your normal practice, then you don't realize the difficulty with access to care, first of all. Second, I think that it would enlighten dentists if they were able to, just from time to time, go with the hygienists to do screenings in school system. They would see that there is a lot of decay still out there that they may not see in their child patient population just because of the socioeconomics. It really opened my eyes when I was first starting out. I was a dental director for the health department, but I didn't really realize myself just how much decay was present. So I think that many just may not be aware.

Even though Dr. Fraser's first job was in public health, she was unprepared for the prevalence and magnitude of decay. Dr. Irene Johnston-Banda describes how the shock is even greater for those who have no intention of interacting with public health:

> I think a lot of people who are not in public health are misled by thinking everything is fine. When they come in, they're like, "I can't believe this!" It's eye opening for them, because some of them are so privileged, they don't know anything *but* two exams a year and they've never had a cavity.

Because of several distinctions between the populations private and public health dentistry attend to, there are differences not only in the demographics of patients, but also in the conditions afflicting them. Public health practitioners face very different challenges and must understand nuances of patient behavior in order to provide care in a way that does not perpetuate harm.

Denise Murphy has worked as a hygienist in both private and public settings. She describes her time in private practice as a “bubble”:

> If you're working in private practice, you don't even know any of this is going on, you're in your own little bubble. Well, that was true of me for 22 years. I got up, got my kids ready for daycare and went to work. I went and picked them up, I came back home, we did that rinse, repeat, the next day, right? I mean, had no idea what anybody else in the world was doing—didn't care, didn't have time. But then once I stepped out of that bubble, that's when you see all these disparities and what people outside of your bubble are dealing with every day.

From someone who has seen both sides of dental care, this is an important experience to share. Denise was in private practice for 22 years and did not have any exposure to issues affecting communities outside of those she saw in her practice. Many interviewees comment on the existence of this divide, and Denise’s experience is evidence of that. When characteristics of another population are not well understood, conditions are ripe for misunderstanding between private and public health workers about why resources are being used in a certain way, why certain policies are being pushed, and why certain conditions are being petitioned. These public health predicaments are being viewed from a private practice lens and lend themselves to misplaced concerns from private practice dentists. Chief among those is the fear that expanding dental hygienists’ scope of practice will eventually result in competition from independently practicing dental hygienists. Ruby Davis, an RDH and public health policy advocate, described the real ways that dental hygienists view practicing independently:

> Our state is very conservative and very far behind, you know? We just got it passed to where dental hygienists can give anesthesia, which was—the majority of the country was already doing that. Also, with allowing dental hygienists to practice to their full scope of their licensure, there's a real concern from the dental society when you say the words “independent practice” or “dental therapy.” There shouldn’t be so much [concern] for independent practice, because I think that hygienists, a lot of them want to work with a dentist. They don't want all of the responsibility.

Hygienists do not want to use the full scope of their abilities to usurp private practice dentists. This position was commonly held among the RDHs I interviewed. It seems that dentists' concern was unnecessary given that calls for heightened independence are being made by hygienists using their license to reach populations normally neglected by private practice dentists. Denise Murphy said:

> So, you've got to have the safety nets in place so everybody has equal care. And there's people that want to provide that service and there's plenty of money to do it. Not just Medicaid programs, but partnerships, and donations. Now, we need the manpower to do it. And dentists don't want to do it. And you know what, honestly, I don't blame them either. They've gone to school for eight years and most of them have between five and six hundred thousand dollars in debt. They cannot afford to work in a nursing home or for what we make—40, 45 bucks an hour. They need $150 an hour to support that debt and their practice. And you know, I don't think anybody's gone to school for eight years [to make what we make.] You got a Dr. In front of your name? Do you want to drive a nice car? You want to go on some nice vacations? You cannot afford to provide these services with the debt and the expectations that you have. So let us do it.

Not just hygienists feel this way about scope. Several of the public health dentists I interviewed were enthusiastic about being able to utilize hygienists in new ways, to cover more territory and more populations, and to work as a team to address the problem of access to care. This was Dr. Shonda Franklin's response when asked about her opinion on independently practicing RDHs:

> I love it. I love it because I practice with two very knowledgeable, compassionate hygienists. I trust them. There's been a relationship that's built with them to where if they're out in the community, if they were to be at one of the schools, if they are using the correct diagnostic tools with pictures and X rays, I am so comfortable. I feel like there is a space for them. There's a space for them when you do not have a dentist that is close by because [RDHs] have the knowledge too. I do feel as though the hygienist working without the dentist being on the premises—I think it has an advantage especially when you do not have another dentist available to serve those patients. I can be in the clinic working independently and my hygienists can be out in the schools and they can work and we are seeing double the patients. Although we're doing different things, we are still getting some treatment done. So again, I see, I see the beauty of it.

Trust is a big part of dentists feeling comfortable with independently practicing dental hygienists. However, after their skill has been established, there is no doubt in the efficacy of being able to have multiple care providers working in several locations and splitting up to address need. Similarly, Dr. Irene Johnston-Banda expressed similar enthusiasm and support for more RDH independence:

> So I think I think we as dentists have to get off of our high horse, understand that if you're taught something, you can do it and allow people to do it. There are more than enough people, for hygienists to treat, but I do understand, like, where some dentists are coming from because it's a money thing. People don't want the money taken out of their pocket, right? And so right now, a policy that was passed in North Carolina is that public health programs can go anywhere, and as long as they're affiliated with a community health center or a health department, they can provide treatment and [RDHs] can provide treatment without a dentist being present. But that is as far as they're willing to go. In all honesty, I think my hygienist could do work just as well as I do. I really think it's a money thing.

Dr. Jaclyn Fraser also emphasized trust when RDHs practice independently:

> I personally feel that the dentists and hygienists work best together as a team. But I am completely comfortable with the following scenario: I don't feel like I have to be on site, the hygienists that I have I trust to do preventive care. But I would like to be able to see the x-rays that have been taken and I'd also like the opportunity to have a quick view intraorally, just to make sure I don't see anything that jumps out at me. Having said that, I think I'm comfortable with me not being there as long as I have some communication, even if it's virtual, or the dental records. Now, as far as hygienists operating completely independently and the dentist not seeing anything associated with the patient—I wouldn't say I'm completely against that. It's just that I've spent my whole career making sure that my patients got a quality of care that I felt responsible for. But do I think hygienists could practice independently? Some of them could.

Although Dr. Fraser is a bit more reserved in her approval, she still sees the value in increasing the scope of care for RDHs. If anything, there should be more room for collaboration between dentists and dental hygienists—perhaps not relinquishing full control, but definitely expanding the number of scenarios hygienists can be utilized in. A common opinion from the public health dentists I interviewed was that their preference was for dentists and hygienists to work together and for hygienists not to be completely detached from a dentist's office. This opinion was

distinct from their support for hygienists being able to perform preventative services without direct supervision from dentists, which they were in support of. Dr. Fraser continued with a potential concern she had about independently practicing RDHs:

> But we have to be very careful that we don't generate two tiers of care. So yes, I definitely think there are kids who wouldn't have access to care if the hygienists didn't go in and provide cleanings, without the dentist being involved at all. And so, I would say that I'd rather those kids have the cleaning and preventive care, than not. But I will always want to be careful that we're not encouraging two standards of care. So it's a delicate balance. Because we know that we don't have enough dentists to go around and we know that there are lots of kids who need access to care.

There is potential for these two tiers to be cemented into the existing framework of healthcare, exacerbating racial, ethnic, and class differences in health outcomes. Dr. Fraser aptly notes that some care is better than no care as long as quality does not remain stagnant and oral health care providers are not complacent.

Whether explicitly expressed or not, dentists' concern about competition plays a primary role in their rejection of legislation that would grant hygienists the full scope of practice. However, dentists should be less concerned by the alleged threats to their own livelihoods and should instead be more concerned about those whose wellbeing they are dismissing because of this unwarranted fear. Ruby Davis thinks that a lot of the restrictions on where and when hygienists can operate is a function of dentists' desire for control:

> But yes, a lot of that is the legislation, you know, they are scared that dental hygiene will get on a slippery slope and fight for that independent practice. If they could just view dental hygienists in more of a model that could even broaden their scope to help them work as a team member and provider beside you! Autonomy is definitely—I think that's a control thing. For the most part, you know, they're scared that we want more power. And it's not more power we want, we just want to treat our patients.

Denise Murphy agrees with Ruby's position, and hypothesizes additional considerations about what drives dentists to oppose such legislation:

> I think it's politics and power. And money. Because there is no other reason in the world why somebody wouldn't want, you know, the underserved to have care, other than you just want to control everything. That's the only thing I can think of because every time we lobby for something—we could lobby to say that the water in the pool is blue, and they would fight. They would spend $100,000 to fight us [to say that] it was black. And they would win.

The analogy of the pool is powerful because it highlights the absurdity of dentists working against public health. Dentists have been in control of most aspects of their professional lives because their practices are private—compromise and submission to the requests of another "inferior" party oppose convention. Dr. Jaclyn Fraser agrees with this claim:

> And I think that's also the reason why lobbying is so strong. Because in dentistry, we've seen what has happened in medicine when you remove that autonomy.

One of the solutions proposed by several of my interviewees is to eventually transition dentistry over to a corporate model. This would alleviate several of the issues these school-based programs are trying to address; however, it would mean the end of autonomy as dentists know it currently. Dr. Fraser points to the example that medicine has set for dentistry. Private practice dentists, whose concern for infringement upon their autonomy has extended to denying the advancement of public health, are going to fight to protect their right to private practice. This ideation is in line with most of the actions taken by the ADA and lobbyists working on behalf of dental associations. Dental association membership is stronger and more influential than medical association membership, let alone dental hygienist association membership. Dr. Jaclyn Fraser provides an example detailing the strength of the ADA and other dental lobbyist groups:

> Well, the American Dental Association, which I am a member, lobbied to have it where Medicare would only cover dental benefits for low-income seniors, not all seniors. The ADA justification was that those were the seniors who needed the needed it the most. On webinars with private practitioners, I found out one of the other reasons was that many of them had wealthy, senior patients. If Medicare started covering dental, then those patients would start to use Medicare, and the dentist would be paid at a lower rate than if they were paid out of pocket. Now dental benefits will not be covered in Medicare. We always say that dentistry is a stepchild. I'm not going one side of the other, I'm just telling you

> that we had a chance to make dental care part of Medicare benefits, which take care of the whole body.

Part of the reason why finding a dentist focused on public health is unusual is because the primary incentives motivating dentists are directly at odds with what is necessary for effective public health provision. Taking care of these patients requires a financial sacrifice on the part of the dentist. To accommodate these patients, a dentist would have to accept Medicare, Medicaid, or reimbursements valued much lower than prices dentists could charge wealthy patients. Dr. Fraser's commitment to expanding access to care is unquestionable, which is why I find it interesting that despite Dr. Fraser's career and career focus, she still hesitates to fully criticize the ADA and its members. The ADA is constantly vilified by dental hygienists and public health advocates. Dr. Fraser puts the ADA's actions into context:

> The ADA represents the majority of dentists, and most of them lobbied to prevent that from happening. Yes, it would've affected dentists negatively and evidently, the majority of the members felt that it would be a disincentive to add dental benefits to Medicare.

Much of current literature puts the blame solely on the shoulders of the ADA and its member dentists (Beck, 2017; Otto, 2017). While I agree that there is a lot that the association could be doing, Dr. Fraser's comments give me pause. There are several interests at play here, including, but not limited to those of dentists, dental hygienists, patients, and the government. Solutions to the current oral health crisis will require maneuvering, and likely some give from all involved parties.

Lobbying has functioned as a considerable means for dentists to maintain and acquire more formal power, especially in contrast to how lobbying has functioned for hygienists. Denise Murphy compares the resources of the two associations:

> For example, the Illinois Dental Hygienists Association has one lobbyist who essentially is employed part time. Whereas the Illinois State Dental Society has full-time lobbyists. Their main lobbyist, the one who's so mean who you might have read about, he makes six

> figures. Oh, my God. His job is to sit at a desk from eight to five or nine to four, or whatever the heck his hours are, and figure out how to how to be mean so they have money and political clout. They have the money to get in front of these legislators too, to buy the fancy dinner. In the United States, politics plays a big role.

There is no comparison between what a part-time lobbyist can do versus a full-time lobbyist and according to Denise, both groups are aware of this mismatch. There is also hygienist acknowledgement of the power of money and politics. Part of the reason behind the mismatch in lobbying resources is explained by Kiana Cooper:

> Every dentist is really required to be a part of their professional association. So they're getting hundreds of dollars of dues from the thousands of dentists in the state. They are able to fund or support various politicians who in turn support their initiatives. We [hygienists] can't get far if we if we don't have the support at the Capitol. Our recent efforts were to advocate for dental therapy in the state and we have letters of support from various organizations from pediatric health departments, community health centers, schools, and hospitals. And the only one who's not in support is the dentists' association.

Similarly to several other organizations attempting to influence policy (like the NRA), money talks. Membership requirements, such as the one described above, coupled with the money and prestige attributed to dentists over other dental care professionals, enforce the political power differential. Unfortunately, the effects can expound upon themselves. Tamara Christensen, a RDH, said this of dentists:

> I would change dentists having control over everything and be able to put the children and the communities first over their own pockets.

A powerful entity whose primary motivations undermine the purpose of school-based programs (and public health dental programs in general) intensifies the relationship between public health and private practice oral healthcare providers. There is inherent misalignment in the values and goals of any policy that applies to dentistry, public and private. Because the power and influence rests with private practice healthcare professionals, the interests of private practice health professions is another obstacle public health programs must contend with.

IV. Characteristics and Quality of Care

There are significant issues with the way that access is currently defined. Dr. Nathan Jacobs, when asked about misconceptions about access to care, described one way that the current definition of access fails public health:

> It's something we're consistently trying to write content on to help people understand our definition of access to care. An example: there was a report from the ADA and they commissioned a report for North Carolina to look at utilization in our Medicaid system. And what we found his utilization is low. And what you'll often hear is, "Well, it's a misalignment on the value of oral health, so the community just must not value oral health, otherwise they would seek services." The definition [of access] they used was if they had a dentist within 15 minute drive of them, not looking really a geographic spread. If someone lives in a rural community with no public transportation, how are they going to get to the dental office 15 minutes away?

The questions Dr. Jacobs is bringing up are questions that need to be seriously assessed because they have impacts on discussions about access to care. There is a preexisting idea about dental care being undervalued, and official reports like this one generated by the ADA's Health Policy Institute that reinforce that idea (when in fact, the opposite might be true) are incredibly damaging to efforts to advance programs. In the report that Dr. Jacobs is referencing, the American Dental Association concluded that of the 5700 dentists in North Carolina, about 38% of them accepted Medicaid (Health Policy Institute, 2020). But looking more closely, most of these dentists were concentrated in urban areas, while 40% of North Carolina is considered rural. Even further, an independent study contacted these offices and only 30% of the original 38% were accepting new Medicaid patients (North Carolina Oral Health Collaborative, n.d.). Dr. Jacobs continues:

> And then when you further extrapolate that down, even if someone's a Medicaid provider, what does true access really mean? It means that you have the means to get to the appointment, like we've mentioned about transportation, but it means that that provider is accepting new Medicaid patients. So like, you can see you're dwindling further and further and further down to a subset of very few providers that a lot of these people have access to. So when we talk about access, I want to look at all the nuances of

> it—not just, is there a provider around the corner? There could be 15 dentists around the corner, but do they accept your insurance? Are they accepting new patients? Do they have hours [of] operation that are accessible? Because the other thing people forget is most low wage workers don't have paid time off and they don't have any time off. Those are all the nuances that aren't incorporated when we say access to care.

The failure of this report to evaluate access in a representative way should, in addition to taking a hard look at other social determinants of health, advance the need to wholly redefine what is meant by "access to care." Dr. Lauren Walters describes this view of access to care like this:

> People typically think of what access to dental care means to somebody who's looking at it from an outsider point of view, versus somebody who's looking at it from inside the system.

Dr. Walters provides an additional example of concerns that arise with these faulty definitions:

> We have oral surgeons that don't take Medicaid. And then we have oral surgeons who do take Medicaid, but only if you're 18 or under. Well, that leaves a huge population, saying "I need this tooth out." And then you have excess and undue stress on people who are in the safety net clinics who say, "you're really better off to get an oral surgeon, that's not really my expertise." But then where do you fall when a patient says, "the oral surgeon won't see me, I can't afford to go. It's either I get it out here or I don't get it out at all. And I'm just in pain." As a provider, that's a really difficult call to make, and when you're having to make it three or four times a week, you start to feel like, what care are you actually providing that patient? Because if you're trying to go beyond your means or beyond your scope of what you're comfortable with, it puts everybody in a really bad situation. And so yes, we have issues with barriers to care. And it's not necessarily location. It's not necessarily transportation. There's a whole plethora of issues that that are attached to access to care, and to people to be able to secure the proper care that they need. And care is not just visiting one dentist in a lot of instances.

Dr. Walters partly attributes the stress on safety net clinics, like school-based programs, to improper definitions of access to care. If access is being evaluated on a scale that does not make sense, it will result in situations like this, where care providers in safety net clinics are making difficult decisions and there are potential impacts on the type of care being provided to patients of these clinics.

As explored in the previous section, an obstacle public health dental professionals face is a general lack of understanding about what they do, which leads to misunderstanding about issues

they face and subsequent solutions. Jessica Mitelman takes issue with people not understanding that oral health issues are everywhere:

> I think people are unaware. A lot of interesting pieces that I see are, it's a Des Moines problem as far as what we do. That's inner-city problems. But the reality is that every city has starter homes. And the goal of every Des Moines family is to move to the suburbs. So you're just moving the problem to the suburbs, or to the apartment building. It's everywhere.

Jessica's experience shows that there is a casual relegation of public health issues to a specific area, when, issues move with patients and are more prevalent than people expect.

Kiana Cooper stresses her patients' lack of access:

> Without programs such as these mobile health programs and school-based programs, thousands of kids would not get care. A lot of the children that we see, even at 6, 7, 8, or 9 years old—we're their first visit—they've never seen anyone before. It's not that they don't want to see [a dentist], but [that] they just haven't had an opportunity before. A lot of families that we have, you know, if they don't go to work, they don't get paid. And if they don't get paid, the kids don't eat. So, they have to make the best decision really, for their family. And sometimes that means they have to sacrifice things like routine dental care. Programs like this are so important to the health of the kids. Dental disease is the number one chronic childhood illness. It's important to make sure that our educators know that we're helping their kids stay healthy and in school—they're able to focus, they're not in pain. They're not misbehaving and acting out of character because they've been up all night with a toothache.

Revelations like this seem to generally go unnoticed by people interested in making policy that affects who can access care. A point that Kiana brings up that was mentioned often by other interviewees was how many patients have just not had the opportunity to access care before. Usually this is because there were tradeoffs between paying for expensive dental care and paying for other necessary services or items. The current state of access makes it so that a sacrifice is required to acquire care. This is in direct contrast to how other populations, namely patients of private practices, interact with dental care. Jessica Mitelman compares her experiences in private practice with her current job:

> Patients paid out of pocket atrocious amounts of money for veneers and crowns. And money was never an object. And yeah, it was just night and day. Where the students that we see with this program, generally, are probably 90%, Medicaid, probably 5% are uninsured. And the other five have private insurance. Same with main clinic, we do a lot of underserved, undocumented, noninsured [patients]. I always tell people, when they apply with us, you have to drink the Kool Aid. If you're in it to make a million dollars, and become rich and retire at 50, nonprofit public health is not the route to take. You have to be in it for the long-term and understand that you're going to feel good about yourself and work twice as hard to get everything accomplished.

For those working in public health, it is important to have a realistic view of what the job entails. This quote also explores stark differences in the way various clientele approach dental services. In private practice, it is not uncommon to see patients coming in for purely cosmetic procedures. In contrast, many of the patients who receive services from school-based programs have not been able to receive even basic preventative care. Jessica provides another experience that helps illustrate some conditions that school-based programs are facing:

> I was like, “well, we have we found over 80 surfaces of decay.” She's like, “holy shit. I didn't know what to say to that.” I was like, “It is what it is. Like you can ‘holy shit’ all day—doesn't matter.” So, we thought maybe 10 to 12 hours of dental care would get him fixed up, but he was actually moving on the 15th of January. So they've got him scheduled every three days for two hours. Oh, yeah. He's gonna hate life. But he'll be good when he's done. But generally, our team sees between 10—11,000 students during the school year.

Having over 80 surfaces of decay is a lot, as evidenced by the reaction of the school nurse who referred this student to Jessica’s program. Several interviewees shared similar stories of instances where they discovered incredible amounts of decay and shared it with others not involved with public health dentistry. There were always strong reactions of disbelief to some of the conditions these students were subjected to. These strong reactions are evidence of the absence of situations as extreme as these are in private practice.

Jessica touches upon the number of students her school-based program cares for each year. A characteristic of many of these programs, according to interviewees, is feeling overwhelmed by the number of patients they are responsible for. She continues:

> You feel like you never catch up. We see probably 800 kids on the mobile, and we finished services on 600 of them. And you know, the other 200 [you're] trying to get into a clinic somewhere and you just see them the next year. One little kid got on the mobile last year. He's like, Are you finally going to finish my cavities? But you know, everybody's in it for the same end game. These kids didn't pick their position they're in, you know, they would have gladly gone to the dentist every six months, Had that been an option and gotten the work done. So that's the hard part. they didn't sign up for this. We try our best to get them through it.

Jessica references some of the stress Dr. Walters was talking about earlier—how there is constant need and concerns about being able to provide care when the demand for safety net services, like this mobile dental clinic's school visits, is overwhelming. This perspective also attributes the stress to the initial lack of access. Jessica comes to the same conclusion here:

> So it's, it's hard. It'd be nice if everybody would just open their doors and help the community thrive. See it as not, this is *their* problem. It's everyone's problem. I mean, it affects everybody's insurance benefits. Everybody's everything when you really stop and think about it.

Public oral healthcare providers know best when it comes to what care is like and what school-based programs need to thrive and positively impact as many students as possible. Taking all of my interviewees' experiences into consideration, I offer several policy solutions.

POLICY IMPLICATIONS

All the issues that contribute to the discrepancies in access to care are inextricably intertwined. Untangling them from one another should be the end goal. However, like so many other social issues in the US that require policy as part of their solution, being realistic about how

far government intervention at the federal, state, and local levels can go is also a necessary consideration to set feasible expectations for results achievable through policy moving forward.

Federal Level Policy Implications

> No margin, no mission. What that means is if you don't make the margin, if you don't make your net income, if you lose too much money, then you can't fulfill your mission. So I think what's been most challenging to me is that balance of the value of the care we provide and the challenge of making sure that we meet that bottom line. It's not anticipated that we will make money. But we're not to lose more than what we've been projected to lose. But I guess it's the same way as if you were in any business, you would have to make your bottom line in order for your business to be successful. It just makes it more challenging when we do have reimbursement for Medicaid, that is much lower than private practice, when the other expenses such as salaries, supplies, etc., continue to go up. That's a challenge that will always be with us, I think.

As Dr. Jaclyn Fraser mentions above, there must be a balance between expanding access to care and making sure that the programs providing this care are financially viable. I agree with her assertion that reimbursements for services need to be increased. Doing so will reduce some of the financial strain placed on safety net programs, while also alleviating stress on resources by opening up opportunities for other dentists (who do not currently serve Medicaid patients) to expand the communities they care for. Dr. Fraser is optimistic about dentists wanting to do the right thing:

> Medicaid doesn't pay adequate reimbursement to dentists. So dentists are losing money when they take Medicaid patients, even though they want to do the right thing. The Medicaid reimbursement is low, that's true. But I feel a commitment to take care of patients who are less fortunate than myself. And so, I take on a certain amount of financial risks. So even with a campaign that was to increase access to care, which is what you're talking about, you still have those barriers to access to care.

The best-case scenario for patients, dentists, and dental hygienists is giving each the power of choice. By increasing reimbursements, more dentists will be inclined to provide services for members of the population who might not have access to care without Medicare or Medicaid. Patients will have the option to receive services from dentists. Dental hygienists will have more

freedom to engage with public health work if interested. Providers who are focused on meeting public health needs will be able to do so, confident because they know that the care they want to provide has adequate funding. Jessica Mitelman shares her view on reimbursements:

> The current fees for reimbursement are so low that you're losing the dollar of allowable services. Primary Health Care, being federally funded, actually gets paid at a higher level than we do. I think people would like to be more willing to help, but they don't want to take the hit financially to actually complete the services. I think if the state programs paid better, more people would take it and open up 20 more offices that were willing to take on those families. It would really ease the pinch at the few offices that do take them.

The primary reason why alternative care models, like the school-based programs detailed above, need to exist is because students are not able to access care otherwise. Such a pervasive issue indicates that the landscape needs to be changed in its entirety. Opening the already-existing private practices to engage with and address the needs of historically neglected communities would drastically alter the demographics of those eligible for care. To do this, oral health care coverage needs to be made a part of Medicare and Medicaid spending bills. Legislation seeking to do just this have repeatedly been shut down at the federal level by conservatives and members of the ADA alike. For too long, the ADA has had the power to dictate the state of oral health. Lasting, impactful changes will require significant and far-reaching overhauls to the system. A triumph of public health over the interests of private practice dentists has the potential to send a message about the

An alternative solution to this issue is to combine all aspects of health care—including dental and vision—into health insurance. I believe the consolidation of these three subsections of insurance makes sense medically and structurally; however, it will be important to ensure that language in policies' stipulations is appropriate for all strata. This was a previous complaint that occurred when more inclusive policies that were originally written and tailored to health insurance (non-dental, non-vision) were hastily applied to oral health care. Instead of having

their intended effects, those policies introduced additional burdens because of awkward requirements that made little sense in dental care. Dr. Irene Johnston-Banda describes a situation where this occurred:

> Whoever wrote the last financial plan for HERSA was thinking medically, they were not thinking generally. We had to change our whole payment structure to bundle services, but it took months and months to come up with that logic. It also made it harder for us to offer phase two dentistry such as crowns and partials—things that everybody should have access to. And it made it very difficult for us to make that fit financially. I just wish that everyone who was in any kind of policymaking would think of dental.

Hopefully, a stronger sense of the urgency of the oral health crisis in the US will inspire policy makers not only to pay more attention, but also to dig more into the information required to craft strong policy. Dental care is a part of healthcare. Policy should treat it as such. Uniting these arbitrary categories all under the umbrella of health will make future health policy more streamlined, efficient, and equitable.

State Level Policy Implications

In parallel, the ADA needs to loosen its grip on dental hygienists and therapists practicing independently within their scope of services. While I do not believe that any independent practice should be without the general supervision of a presiding dentist, hygienists and therapists must be given the jurisdiction to administer basic care (cleanings, education, etc.). Working with a dentist responsible for overseeing the operation and signing off on patient care, even electronically (or through telehealth) will help mitigate any discrepancies in care. Dr. Jaclyn Fraser recognizes the potential impact policy like this could have, while also respecting difficulties that come along with it:

> I definitely think there are kids who wouldn't have access to care if the hygienists didn't go in and provide cleanings without the dentist being involved at all. I would say that I'd rather those kids have the cleaning and preventive care, then not him. But I will always want to be careful that we're not encouraging tow standards of care. And so it's a delicate balance. Because we know that we don't have enough dentist to go around. And we know

that there are lots of kids who need access to care.

It is important to consider that there is more demand for dental services than there are dentists to meet them. Some form of care is better than no care at all. More specifically, hygienists are calling for these abilities to be released under their scope of individual practice: x-rays, cleanings, anesthesia, preventative treatments. Hygienists and therapists are trained and equipped to provide basic to mid-tier services. Dental therapists especially have the potential to change the way dental care is accessed. Several interviewees compared their status and function to that of physician's assistants. Like physician's assistants, therapists would be able to receive patients independently and triage cases for the benefit of all. One of the most common responses to my question, "If you could change one piece of ADA or government policy, what would it be?" was to approve dental therapists and allow them to practice to their full abilities without being tethered to requirements for dentist supervision. Whatever form the licensure takes, it will be important to standardize it across states. This is to combat the creation of multiple tiers of care and access for patients depending on which state they live in, especially considering that current policies leave room for wildly different opportunities within the same profession.

Allowing both hygienists and therapists to work to their full scopes can relieve dentists of less intense tasks and leave them to perform the most specialized, rigorous procedures that are—consequently—the more expensive procedures as well. Therapists and hygienists would also be able to go into rural areas (or less popular areas for dentists) and address a potential dental care desert. Jessica Mitelman said this about independent practice:

> I think in rural areas—Iowa has a huge rural population, and it's hard to find clinicians willing to work. In a small town, I grew up in a small town, the dentist always cleaned our teeth, It's hard to find a dentist that will go in. If our hygienists could work independently, I think you could get a lot more to the rural areas as a business owner as an incentive.

Because access depends on where one lives, issues of equity must include conversations about access in rural vs. urban areas. It is important that this care be accessible for patients, not only fiscally, but physically. As discussed earlier, there are significant issues with the way that access is defined. Firstly, there needs to be an overhaul of the definition of access. Realistic access to dental care that factors in transportation and whether an office is actually accepting new clients needs to be used as the standard, not just whether a clinic exists within a certain mile radius. After a reformed assessment of access is performed, measures (including ones described above) that specifically target those redefined barriers to care must be taken to increase accessibility.

Local Level Policy Implications

Because of a public stigma that dental care is not important or connected to overall health, maintaining oral health is not a priority, especially for patients who have several barriers standing between them and access to care. Collaboration with other establishments will serve to help reinforce the importance of dental care. One partnership that should be expanded is with medical clinics or hospitals. Having a public health dental hygienist or therapist on site for any emergencies involving oral health will not only reduce the amount spent on dental cases that end up in the emergency room, but will also physically mend the current divide between oral health care and the rest of medicine. Placing dental clinics on site at schools is also important to enforce this idea. Several of my interviewees were part of healthcare systems that recognized the potential from a collaboration between medical systems and dental practices. Within these systems, doctors and dentists could communicate with each other seamlessly. Doctors were also keyed into championing dental to their patients and the wider healthcare community.

To address disconnects between private practice and public health dentists, several interviewees suggested the incorporation of a public health rotation into dental care

professionals' curriculum. Doing so would not indicate a commitment to public health, just an acknowledgement that other communities, apart from the ones that they might be planning to work with, exist. That the needs and characteristics of these communities will likely be very different. Dr. Lauren Walters explains her reasoning:

> One thing would be that everybody must take a rotation in inside public health. That as soon as you come out of Dental School—I don't care if you've already been accepted to school for orthodontics, or you're going on to study oral surgery, or you're going to go on to study endodontics, or you're going to open your own practice, you're going to join a big group practice—I don't care. Everybody should go through a public health rotation for six months after dental school. I've proposed that as a certification type of thing through the state. And I'll continue to push for that. Because even if you don't plan to do this with your whole life, you need to know that you have neighbors that you may never see who are going through exactly what we see every day. And I have practitioners who come in dentists and hygienists alike, who are like, "I can't believe this is happening, I used to only see people who might need a night guard or might need one little, tiny filling done!" And then they come here and it's like, you're scheduled for a tooth surface filling, but it's rebuilding an entire tooth, and you're doing it for every tooth in their head, and you don't know how long it's gonna last.

It is important, generally, for health care providers to understand where the services they provide fit in to the larger administration of health. Disconnects and misunderstanding also contribute to the tensions manifesting themselves in policy. As mentioned above, it is highly unlikely that health care providers would actively work to prevent access for so many people; however, Dr. Jaclyn Fraser asks for more empathy:

> I'd like for us all to be more inclusive and open to some of the challenges that people have that are not like us, who didn't grow up like us, who may not have the financial resources we have, rather than bad mouthing them and saying, "Well, they should have done this or why didn't they do this? Or it's their fault this or why can't this?" I'd like to see us be more open and inclusive of others who are not like us. That's the right word, empathy. That is what I was trying to say: have more empathy.

This empathy that Dr. Fraser is talking about is something that only comes with understanding the characteristics of the clientele—taking the time to understand why they are doing the things they are doing. A public health rotation would help achieve this. This rotation may also

encourage private practice dentists to do more for populations that have a harder time accessing care. Several interviewees suggested a designated time for private practices to offer services for low-income or Medicaid/Medicare patients. Here is Tamara Christensen's idea for "Medicaid Day":

> One idea I have is to volunteer one Friday a month, just one Friday a month. One and let that be "Medicaid Day," and we can do it under general supervision. The dentist can call in with asynchronous teledentistry. We want radiographs and full assessment just like we're working with that patient for dental exam, the dentist can view all of that information they can make more effective communications to what does that patient need? Do they even need to come in? Or can we handle preventively only, which we will have done at that appointment? It's a great way to increase access to care. And you know, we have how many? We have 400, 500 dentists in Georgia. We have 7500 dental hygienists. Can you see what kind of impact that would make? Just that little bit?

Alternatively, Dr. Fraser cites an example of using private practice dentists to expand access to care:

> The Dental Society is launching a campaign called Take Five and that campaign is asking private practitioners who don't accept Medicaid insurance if you would just take five patients on Medicare or Medicaid. That means that if every private practitioner would just take five patients, then patients on Medicaid in North Carolina would have greater access to care.

Programs like these require little lift from private practice dentists; however, the power comes from the sheer numbers of dentists. These are simple ways for private practice dentists to get involved in addressing public health issues that also do not require massive changes to their infrastructure and operating systems. This is a band-aid for a much larger problem, but has merits as a potential, temporary fix.

Currently, eye examinations and general health checkups are more available in schools than dental screenings. Prevention is the best "cure" for any health issue, so catching oral diseases early is essential for addressing public health disparities. Often neglected are care provisions for the youngest members of our population. Partnerships with daycares or nurseries

will be especially useful for preventative care. Patient education programs in these early childhood centers will also help communicate the importance of oral health to parents and guardians, combating the stigma. One possible solution would be to require a dental screening as part of standard school medical requirements. Jessica Mitelman says,

> You know you have to have a physical before you start school. You don't have to have a dental screening. Which it's all part of the same body. So, it'd be nice if it was recognized in that way.

By grouping a dental screening together with a physical, the well-worn divide between dental and medical slowly gets pushed back together. From an early age, dental screenings will become routine and will also get equated with physicals in consequence and importance. It is important to acknowledge that the only way screenings like this can be required of all school-aged children is if there are ways for all children to access a screening in the first place.

Dr. Jaclyn Fraser identifies an important theme in expanding access to care:

> I do think that the key concept is taking care to children. And it would be the same for adults if there was a way to take care to adults.

Safety net programs should consider the impact of mobility. We know that barriers to accessing care include transportation issues and scheduling conflicts. Mobilizing care helps alleviate the burdens of both barriers. There has been great success with the use of mobile clinics in schools, and several interviewees cited the efficacy of bringing the care to patients, truly making it as accessible as possible. There are great examples of how mobile clinics can be run, along with the impacts they have on the patients they serve. Programs like this should also be available for adults seeking treatment.

As mentioned at the beginning of this section, the success of these interventions requires changes to be made in all major policy arenas—federal, state, and local. It is virtually impossible to separate the implementation of one piece of policy from another. Although the number of

changes needed to improve health equity is great and the processes daunting, all effort brings conditions in the US closer to achieving this goal. Policymakers, healthcare workers, and patients can be inspired by the many dental care professionals, public and private, who are already diligently working towards making quality care truly accessible.

DISCUSSION & CONCLUSION

As these data demonstrate, school-based oral healthcare programs address critical needs of underserved populations. These programs, however, are not without their issues and complications. Earlier research identifies deficiencies in access to dental care and describes the efficacy of alternative dental care models, including school-based programs (Braun et al., 2013; Guay, 2004; Northridge et al., 2020; Otto, 2017; Simmer-Beck et al., 2017). However, existing studies largely rely on quantitative data and neglect to consider the perspectives of several stakeholders in conversation with one another. My research addresses the gaps by analyzing and drawing conclusions solely from qualitative data and by broadening the perspectives considered—focusing on the experiences of registered dental hygienists, dentists, educators, public health officials, and public health advocates. I argue that in order to pose effective solutions to the issue of access to care, sourcing data from several stakeholders involved in care provision will provide the most holistic foundation from which to generate these solutions.

My analysis reveals the mechanics of operating a school-based program within the sphere of public health. There is significant room for improvement in school-based dental care programs. Interviewees discussed how the disconnect between dentistry and the rest of healthcare and structural barriers create red tape that public oral healthcare professionals must navigate—exhausting time, energy, and resources—echoing previous research (Mouradian et al.,

2000; Northridge et al., 2020). Public oral healthcare workers have developed several strategies to alleviate complications, relying on people (whether that be staff members or virtual networks of colleagues) and new technology. A thorn in the side of public oral healthcare providers is their relationship with private practice oral healthcare providers. The disconnect creates tension and misunderstanding that frustrate both parties, but makes public oral healthcare provision especially difficult. At present, school-based dental programs care for students who have significant oral health needs and are up against incomplete, misleading determinations of what "access to care" means, along with misunderstandings about how disparities in oral healthcare are a public health crisis. These findings corroborate previous research that determined improvements in dental care across the US are not being experienced equitably, but that school-based programs have been, and will continue to be, a viable method of addressing inequalities in access to care experienced by students (Guay, 2004; Simmer-Beck et al., 2017).

Policymakers should focus their efforts on implementing policy centered around the experience and suggestions of public healthcare workers with boots on the ground. At a federal level, policymakers must work towards integrating dental care into general healthcare and increasing Medicare reimbursements. At a state level, hygienists and mid-level providers (like dental therapists) must be allowed to practice to the full scope of their abilities without restrictive policies that require a dentist to be on-site. At a local level, private practice dentists must be charged with shouldering more of the public's oral healthcare needs, a public health rotation should become a part of education requirements for oral healthcare professionals, and schools should require dental examinations alongside physicals.

There are several ways that school-based care is provided. Some of my interviewees worked in on-site clinics, permanently situated on school grounds, while others administered

care from mobile dental units (i.e. modified RVs, trailers, or vans). Further research exploring differences and similarities between the models would be useful in pinpointing the best methods of providing school-based care. Additionally, limited sources of interviewees meant that my data came from individuals operating in several different states. A future study examining activity in one geographic region (i.e. a state or county) or one type of geographic region (i.e. rural, suburban, urban) may reveal more tailored solutions for federal, state, and local policymakers.

Overall, this study demonstrates the efficacy of school-based oral healthcare programs in providing for a group of patients—students—whose care has been neglected by former and current systems of dental care. I show that while several aspects of care are working well, there are issues—namely relationships with medicine, private practice oral healthcare providers, and misinformed policymakers—that need to be addressed to improve the provision of care in school-based programs. I argue that the experiences of various stakeholders directly involved in administering care must be considered when crafting policy, not only pertaining to school-based programs, but also to oral health equity in the US. My findings shed light on the inner workings of an alternative oral healthcare model that addresses the needs of our students and advocates for their overall health and wellbeing.

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