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Dental Therapists in the United States

Health Equity, Advancing

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Background: Dental therapists (DTs) are primary care dental providers, used globally, and were introduced in the United States (US) in 2005. DTs have now been adopted in 13 states and several Tribal nations.

Objectives: The objective of this study is to qualitatively examine the drivers and outcomes of the US dental therapy movement through a health equity lens, including community engagement, implementation and dissemination, and access to oral health care.

Methods: The study compiled a comprehensive document library on the dental therapy movement including literature, grant documents, media and press, and gray literature. Key stakeholder interviews were conducted across the spectrum of engagement in the movement. Dedoose software was used for qualitative coding. Themes were assessed within a holistic model of oral health equity.

Findings: Health equity is a driving force for dental therapy adoption. Community engagement has been evident in diverse statewide coalitions. National accreditation standards for education programs that can be deployed in 3 years without an advanced degree reduces educational barriers for improving workforce diversity. Safe, high-quality care, improvements in access, and patient acceptability have been well documented for DTs in practice.

Conclusion: Having firmly taken root politically, the impact of the dental therapy movement in the US, and the long-term health impacts, will depend on the path of implementation and a sustained commitment to the health equity principle.

Key Words: dental therapists, health equity, health workforce

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Oral health disparities in the United States (US) are a defining feature of larger social inequalities and a key marker of disadvantage among the American population.[1] These patterns of oral disease burden play out along every social dimension—by income, employment, race, age, geography, and disability status and their many intersections.[1] Addressing oral health disparities requires a fundamental redistribution of knowledge and resources to the communities who bear the greatest burden of disease.[2] The process underlying this negotiated redistribution must include "the agency of disadvantaged communities and the responsibility of the state."[2] This requires deep community engagement and reform of regulatory structures that maintain exclusionary practices with no public health advantage.

Workforce innovation can be a central driving force in efforts to reduce health disparities. Like most professions in the US, the traditional dental hierarchy grew out of the long-standing racial, sex, and colonial exclusionary practices.[3] Professions use the state to maintain these hierarchies through public policy (regulation of allied dental providers, majority female, through boards controlled by dentists, majority male), degree requirements (economic and social gatekeeping), and organized professional resistance to expansion of publicly financed systems of care.[4,5] Unsurprisingly, the current dental workforce lacks racial/ethnic diversity and is geographically maldistributed, while the number of dental health professional shortage areas is rising.[6,7] In 2010, following an Institute of Medicine workshop on the dental workforce,[8] emerging workforce models were assessed for their potential to advance equity and reduce health disparities along the Office of Minority

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Health's strategic framework for reducing disparities at the individual, environment, and system levels.[9] One of those promising models was that of dental therapists (DTs).

DTs are primary care dental providers who practice in > 50 countries worldwide. DTs work as part of the dental care team to serve children and adults, and they provide clinical and therapeutic care including prevention (health education, prophylaxis, x-rays) and routine restorative care (filling cavities, placing temporary crowns, and extracting teeth).[10] Global use of DTs and their safety and effectiveness have been demonstrated in various health systems.[11,12] In the US, efforts started in the 1960–1970s to expand the scope of practice for allied dental providers, but progress was slow due to opposition by organized dentistry.[13] In 2000, the Surgeon General's report on oral health highlighted both the ubiquitous nature of dental disease as well as vast oral health inequalities,[14] followed by a call for improved capacity, diversity, and flexibility of the workforce.[15] In 2003, the Alaska Native Tribal Health Consortium (ANTHC) developed their dental health aide program under the authority of the Community Health Aide Program (CHAP).[16] Students initially trained in New Zealand's long-standing dental therapy training program[17] became the first practicing DTs in the US in 2005. In 2009, Minnesota was the first state to pass legislation, creating both a DT and advanced dental therapist (ADT).[18] In 2015, the Commission on Dental Accreditation (CODA) established standards for dental therapy training programs.[19] The 2 initial and distinct efforts led to an interest in expanding the model nationally with heavy investment from philanthropy, culminating in the National Partnership for Dental Therapy—a coordinated effort between Tribal governments and advocacy organizations to advance equitable oral health policy for all.[20,21] DTs have now been authorized in varying degrees in 13 states, with Montana being the first state in the lower 48 to authorize dental therapy in CHAP, similar to Alaska.[10,12,16,22]

The objective of this study is to qualitatively examine dental therapy as a workforce innovation and assess its capacity to advance health equity. We will describe the drivers of the movement to bring dental therapy to the US and examine the evidence of upstream (structural) and downstream (health access, status) outcomes through a health equity lens.

METHODS

A comprehensive document library on the dental therapy movement, including published literature (n = 57), internal grant documents (n = 47), and gray literature and press (n = 36), was compiled between 2017 and 2020. Semistructured interviews were conducted with key stakeholders in all states and Tribal areas that have authorized dental therapy, as well as with stakeholders engaged in active campaigns (n = 81). Dedoose software was used for qualitative coding structured around 3 key themes using well-defined conceptual models: (1) community engagement[23] and policy advocacy[24]; (2) dissemination and implementation[25]; and (3) access to care.[26,27] Trends and findings were assessed within these frameworks using thematic analysis. Our equity analysis maps these findings to 3 critical concepts, derived from various oral health equity theoretical models[9,28–30]: (1) changing "upstream" structures and systems (policy, political, economic, social, etc.) are critical for sustainable "downstream" change in health access and outcomes; (2) strategies to approach equity along this continuum focus on effects at the individual, environment, or system level; (3) recognition that change efforts are often focused on near-term changes in material conditions of life (community well-being, physical, social, economic and service environment), while long-term effects on health equity will be summative of these efforts. The detailed methodology can be found in Supplemental Digital Content 1 [http://links.lww.com/MLR/C302 (online only)].

RESULTS

Community Engagement and Advocacy

Community engagement underpins the dental therapy movement. Advocacy is often led by community stakeholders and focused on self-determination, health equity, and local workforce opportunity. Unlike traditional "professional projects,"[4] where an existing occupation seeks higher degree requirements, greater autonomy, and increased scope of practice, this movement seeks to bring a new provider to the US oral health ecosystem.

The genesis of dental therapy in Alaska was rooted in Tribal self-determination, as noted by an Alaskan official, "a local solution to a local problem"—an entirely community-driven initiative to remediate historical oral health inequities and trauma. For Tribal nations, the strong focus on developing their own local workforce of DTs culturally and linguistically tied to the communities they serve shifted oral health care from something only accessible from a small pool of existing providers to something attainable and built for themselves, taking ownership of their communities' health. The local economic benefit of dental therapy within these sovereign nations was also stressed (Table 1: Q1, Q2).

In state-based efforts, community advocacy organizations, like the Minnesota Safety Net Coalition, Nevada Healthy Communities Coalition, Vermont Voices for Children, and Michigan Council for Maternal and Child Health took the lead on the dental therapy efforts. Dental therapy generally garnered wide bipartisan support from groups as varied as grassroots social justice and community advocates to health care organizations and libertarian free-market groups. The only outright opposition to dental therapy is organized dentistry and its affiliates.[31–39]

Sustaining community engagement throughout the advocacy, legislative, rulemaking, and implementation processes was reported to be difficult. Communities are often more engaged in the legislative process, providing stories and testimony while lobbyists are hired to get bills passed. However, rulemaking and implementation are critical to shaping the actual practice. If funding for advocacy efforts wanes, so too may the capacity to stay engaged.

While the community-engaged processes allow for local adaptations of dental therapy, different legal and educational requirements across jurisdictions, even within a state, may restrict the portability of the profession. For example, while generally supportive, the involvement of dental hygiene associations has led to instances where the agenda of hygiene professional advancement resulted in state hygiene requirements for dental therapy, against many in the coalition's desires. These hygiene requirements, when

TABLE 1. Select Stakeholder Quotes

Community Engagement and Advocacy	Implementation of Dental Therapy	Impact on Access to Care
Q1. "Hope is in a place where it didn't exist before. I've seen the devastation in those villages and we now have people [who] have a good job, have a positive force in their communities, in Tribal Councils, on school boards, [they're] role models, helping out kids that need a safe place to live… this is huge for the communities that we're targeting … providing so many more benefits than I ever imagined."—Alaska Native Tribal Health Consortium Dentist	Q2. "Dental therapy provides a pathway to the middle class for a population that has never accessed the middle class before … while at the same time serving a very severe community need."—Dental Therapy Advocate	Q3. "I remember as a child our visit to the dentist who only came to our community once a year was always really a traumatic experience … you could hear the screams of your siblings and your cousins and your friends … because, of course, when you only get to see a dentist, if you're lucky, once a year, sometimes every other year, then they're pulling teeth … I think our communities in Alaska have really benefited from DTs. Our children are … taking better care of their teeth … These folks [the DTs] are an integrated part of their community, they see them everywhere. We have cavity free kids for the first time since contact. I think that every community in this country deserves to have that."—Alaskan Tribal Member
Q4. "What we see in Alaska is little kids will go to the dental clinics, be seen by a DHAT, who comes from their community, often they're related or they're friends outside of the dental chair, and they see who has their life experience working in this field, and they want to do that, right? And that becomes an accessible profession, and organized dentistry is overwhelmingly white, and dentists are overwhelmingly male, and hygienists are overwhelmingly female—but it's often just monolithically white. Seeing dentistry as an accessible profession doesn't happen without community engagement."—National Partnership for Dental Therapy Staffer	Q5. "There have been things that I expected from the dentists on the Board of Dentistry … wanting to insert language into the rules to essentially create barriers for DTs, but because of this workgroup process where we can have input … there are enough voices at the table pushing back on that."—Michigan Official	Q6. "Unfortunately for dentistry, we have a perverse system that gets the healthy and wealthy into dentistry and denies access to the poor … [we need to] get people from communities embedded in communities to become resources for those communities in a very direct way."—Member, Dentists for Health Equity
Q7. "I think that some of the compromises that we've seen, like the tribal carve outs and some other compromises, this really just goes to show that the state political process does not always treat tribes with the inherit sovereignty that they have …. But it shouldn't matter because it's a federal issue. This piecemeal approach really does make it harder for the education institutions. If we say that this is one path for tribal licensure, and this is another path for nontribal licensure, what is the curriculum that the local community college develops? It can be very tough for them to accommodate those standards."—National Indian Health Board Staffer	Q8. "We didn't want to have one set of criteria for DTs to practice all over the state and then a different set of criteria for tribal DTs … the blunt reality is you encounter some arguments that have almost racist undertones to them … they'd say 'we [the dentists] think DTs are sublevel care, but you guys [tribes] want that, so that's okay for you.' We didn't want to go there."—Tribal Lobbyist	Q9. "Coeur D'Alene, who … is the only health provider in their entire community, for Medicaid eligibles, native or non-native." As such, they avoided a stiff "bi-forked" approach in Idaho while maintaining the tribal setting because as the only Medicaid provider in the community "you can't shoot yourself in the foot like this. You can't shoot your communities in the foot like this."—Northwest Portland Area Indian Health Board Staff

DHAT indicates dental health aide therapist; DT, dental therapist.

paired with other components like Tribal carve-outs in Arizona and New Mexico, create a complex system that may prevent the wider practice of Tribal DTs should their training not include a hygiene license or degree, or may pressure tribes to conform to state requirements so their DTs are not restricted to Tribal lands. Expanding professional scopes of practice can rebalance hierarchical power, create more flexible teams, and lead to improved health outcomes (Table 1: Q3)[40,41]; however, it can take power away from communities expressing different needs from dental therapy (eg, economic opportunities) and can make the profession less accessible (ie, higher degrees, more tuition, and years of training). For underserved communities, achieving long-term structural changes that drive equity through workforce strategies such as dental therapy requires gaining occupational legitimation through institutional change while also challenging those institutions' often racist, paternalist, and colonialist structures and processes (Table 1: Q6).

Implementation of Dental Therapy

Implementation of dental therapy requires several steps after authorization, including rulemaking, establishing oversight, appropriations and reimbursement policy, education development, and then practice delineation. All these steps require engaging and modifying existing institutional structures and capacity and, depending on setting, may involve federal, state, and Tribal governments. At every step of implementation, health equity can be advanced or hampered.

Rulemaking, Oversight, and Appropriations

If authorization for dental therapy is achieved through state legislation, the final rulemaking process sets the regulatory structure. State dental boards are the primary government agencies tasked with occupational oversight and are required to have representation by the groups they

govern, such as dental hygienists (DHs), dental assistants, as well as community members.[42] However, the dentist-led oversight of all other dental occupations creates status, racial, and gendered power dynamics,[43] as dentists are predominantly male and DHs, assistants, and now DTs are predominantly female (Table 1: Q4). With this imbalance, a New Mexico coalition member noted the boards can be wielded to prevent any progress on the rulemaking front by undermining the scope of practice, education requirements, reimbursement process, and more. Among the states with dental therapy, dentists hold a majority of dental board seats in all but Montana. Only in Michigan and Nevada did legislation require boards to include DTs in the future. For states where a DT isn't mandated to be on the board, using slots for consumer/community positions is one way of rebalancing power between the dental profession and the community.

Weakening community involvement directly works against health equity. However, community advocates have taken precautionary and active measures to counteract those efforts. Michigan's workgroup process allows for advocates to be involved in rulemaking, giving them the power to oppose unfavorable rules (Table 1: Q5). Opponents also seek to draw out the process to delay implementation. In Vermont, according to coalition members, the regulatory body decided to "take advantage of the fact that they were doing the rulemaking for this [dental therapy] to clean up the other dental professional rules." After 4 years, despite having a completed set of rules, they have yet to be approved. This extends to delays of other enabling factors, such as completing state amendments for Medicaid reimbursement for DTs, as is the case in Arizona and Maine.

The regulatory process in Tribal nations is deeply participatory but also quite complicated with Nation to Nation jurisdictional rules, Indian Health Service financing, and state Medicaid and occupational regulation. Further, during the passage of The Patient Protection and Affordable Care Act, organized dentistry successfully lobbied for language in Title X, the Indian Health Care Improvement Act, restricting expenditure of federal dollars to support DTs working in Tribal communities outside of Alaska unless the state in which the tribe resides authorizes DTs. Batliner[44] critiques that this language "subverts Tribal sovereignty by making state law supersede the will of Tribal government, and it has allowed a trade group with a financial interest in opposing DTs to inhibit the dissemination of a solution that has been shown … to be successful." In Washington, the Swinomish Indian Tribal Community worked around the lack of state authorization by starting their own dental therapy licensing board, which rebalances power back to the communities and the people they serve and away from the often paternalistic relationship of the dental profession (Table 1: Q6).

Educational Capacity for Training Dental Therapists

The first domestic education program was developed out of the University of Washington in 2006.[45] Now located in Iḷisaġvik College, Alaska's only Tribal college, students from tribes in Alaska, Washington, Oregon, and Idaho have been trained and returned to their tribes for additional supervised clinical practice. This program is the first, and so far only, program to gain CODA accreditation and is perhaps one of the only examples of a decolonized educational pathway in dentistry focused entirely around training local people for local needs. This approach is being used as a model for the Skagit Valley College/Swinomish Dental Clinic partnership under development in Washington.

In Minnesota, DHs in the state were already actively working on a long sought after role of advanced dental hygiene practitioner and ended up enacting 2 providers, a DT and ADT, the latter being required to have a graduate degree and a license to practice dental hygiene.[46] Metropolitan State University and Normandale Community College have established advanced dental therapy programs for already licensed DHs, while the University of Minnesota School of Dentistry initially set up a dental therapy program,[47] but subsequently merged their dental hygiene and dental therapy programs to only offer a combined ADT program. Pacific University in Oregon and Vermont Technical College are also developing dental therapy programs based in dental hygiene programs, the latter with support of a Health Resources and Services Administration (HRSA) grant.

Most graduates from the program in Alaska are Alaska Native/American Indian. Data from Minnesota, the only non-Tribal specific program fully deployed, suggest that DTs, 42% of whom are also DHs in the state, are generally more diverse than other oral health professionals (Table 2), although still lacking representation among the Black/

TABLE 2. Race/Ethnicity in Minnesota and Among Licensed Oral Health Professionals in the State

Race/Ethnicity	State Population, 2019 (%)	Dentists, 2019 (%)	Dental Therapists*, 2019 (%)	Dental Hygienists, 2019 (%)	Dental Assistants, 2016–2017 (%)
White	83.9	86.0	82.0	92.0	89.9
Black/African American/African	7.0	1.0	4.0	0.9	1.3
Native American	1.4	< 1.0	4.0	0.2	0.3
Asian	5.2	8.0	11.0	3.2	3.7
Multiple/other	2.0	4.0	2.0	3.1	3.3
Hispanic	5.6	1.0	5.0	0.5	1.4

*Dental therapists were allowed to select multiple racial categories so the total sums to > 100%.

Sources: US Census Bureau, American Community Survey, Quick Facts, Minnesota. Available at: www.census.gov/quickfacts/MN and Minnesota Department of Health, Oral Health Workforce Reports. Available at: www.health.state.mn.us/data/workforce/oral/index.html.

TABLE 3. Legislative Progress on Dental Therapy Authorization

State	Year Authorized	Type of Authorization	CODA Required	Dental Hygiene Prerequisite	Degree Requirements to Date*	Settings/ Population Restricted	Therapists Currently Practicing in State
Alaska	2005	Tribal only (CHAP)	No	No	No	Yes/yes	Yes
Minnesota	2009	State	No	No	Yes (ADT/MS)	Yes/yes	Yes
Maine	2014	State	Yes	Yes	Yes (MS)	Yes/no	Yes
Washington	2015	Tribal only	No	No	No	Yes/yes	Yes
CODA educational standards passed (2015)							
Oregon (a)	2016	Tribal pilot†	No (pilot)	No	No	Yes/yes	Yes
Vermont	2016	State	Yes	Yes	No	No/no	No
Arizona	2018	State/Tribal	Yes	Yes	No	Yes/no	No
Michigan	2018	State	Yes	No	No	Yes/yes	No
Connecticut	2019	State	Yes	Yes	No	Yes/no	No
Idaho	2019	Tribal only	Yes	No	No	Yes/yes	No
Montana	2019	Tribal only (CHAP)	Yes	No	No	Yes/yes	No
Nevada	2019	State	Yes	Yes	No	Yes/yes	No
New Mexico	2019	State/Tribal	Yes	Yes	No	Yes/no	No
Oregon (b)	2020	Hygiene pilot†	No (pilot)	Yes	No	Yes/yes	No

*May change following completion of each state's rulemaking process.

†Oregon has 2 approved dental therapy pilot projects (www.oregon.gov/oha/ph/PreventionWellness/oralhealth/dentalpilotprojects/Pages/index.aspx). At the time of publication, the Oregon House and Senate have passed legislation (HB2528) authorizing dental therapy statewide, and the governor is expected to sign it (https://www.opb.org/article/2021/06/24/oregon-getting-new-type-of-dentist-dental-therapist/).

ADT indicates advanced dental therapist; CHAP, Community Health Aide Program; CODA, Commission on Dental Accreditation; MS, master's degree.

African American population in that state, mirroring a very large gap in the diversity of dentistry more widely.[6]

Practice Setting Capacity and Support

The CODA educational standards establish common competencies necessary for interstate movement. However, states are not as aligned on prerequisites (degree type or dental hygiene), nor on population and setting restrictions for dental therapy practice (Table 3). Currently, most states limit or prescribe what settings or populations the DTs can serve once in practice, such as in community health centers, with a minimum percent of Medicaid populations, or in Tribal health systems.[48] While practice restrictions are linked to concerns over access—which have been a primary rationale for dental therapy, as the number of dentists accepting public insurance remains low—concerns have also been raised about restrictions being exclusionary on both the practice level and a racial level (Table 1: Q8, Q9).[49] Opponents to dental therapy argue that dentists offer superior care and should be caring for underserved populations. Alaska Natives, in their support of dental therapy, argue otherwise. "We are now … providing care on our own behalf, and there is nobody more motivated to ensure that our children receive the care that they deserve than we are." Furthermore, Tribal-only or Tribal carve-out bills, though instrumental in allowing for dental therapy implementation, demonstrate how the state political process does not always acknowledge the Tribes' inherent sovereignty (Table 1: Q7). While these dynamics are shifting, all empirical evidence shows that DTs provide safe and competent care.[12,50–52]

Access to Care: Dental Therapy Impact on Oral Health Equity

The evidence on improvements in access to dental care are limited to the states that have successfully implemented education and regulation for long enough to where dental therapy practice is in place: Alaska, Minnesota, Oregon, and Washington.

In Alaska, where DTs are deeply rooted in ties to Tribal communities, have strong institutional support and cohesion, and a local Tribal college's education capacity, it is not surprising that here we find the strongest body of evidence of access to safe and high-quality care and significant improvement in the health of Alaska Native populations.[44,45,50,52–57] Alaska may also be the most studied program over time, from initial training, deployment through the health system, and impact on communities. The positive outcomes are most notable from an equity perspective because the Alaska Native population has been among the most disadvantaged with extremely high oral health disease burden (Table 1: Q3).

TABLE 4. Patients Served by Dental Therapists (DTs) and Advanced Dental Therapists (ADTs), Minnesota (MN), 2019

Types of Underserved Patient Groups Served Daily by DTs and ADTs	% of MN DTs and ADTs That Serve the Population
Low income or uninsured patients	100
Minnesota Health Care program recipients	92
Other racial or ethnic minority members	85
Populations with disabilities	81
Patients who require an interpreter	74
Immigrants and refugees	62
Veterans	47
Unsure	2

Source: Minnesota Department of Health, Minnesota's Dental Therapist Workforce; 2019. Available at: www.health.state.mn.us/data/workforce/oral/index.html.

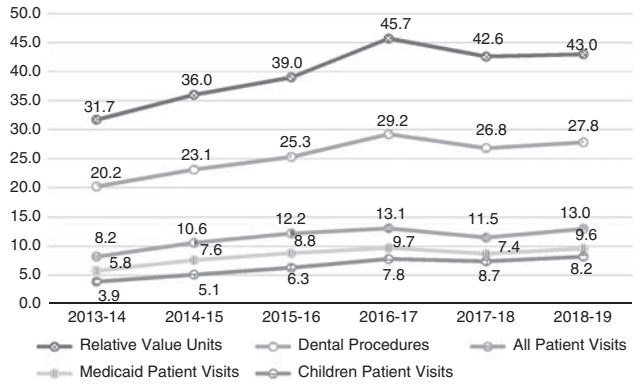

FIGURE 1. Six-year trends in average number of patients treated and procedures performed by advanced dental therapists per treatment day and average number of relative value units produced per treatment day, 2013–2019. The trend in average number of children patient visits ($P = 0.003$), Medicaid patient visits ($P = 0.032$), dental procedures ($P = 0.028$), and relative value units ($P = 0.029$) per treatment day were positive and statistically significant; the trend in average number of all patients per treatment day was positive but borderline statistically significant at $P = 0.055$. *Source*: Patient Encounter Data, Apple Tree Dental, 2013–2019.

The Oregon pilot projects are under evaluation, and preliminary results in both Oregon and Washington, as reported by stakeholders, have also been positive. In Minnesota, the evidence of patient and provider acceptability, education quality, practice capacity, economic benefit, and health improvements is also robust.[18,51,58–64] Dental safety net facilities have been great supporters and early employers of DTs in Minnesota. A survey of 32 safety net providers reported that clinical directors overwhelmingly (77%) supported the dental therapy provider model.[51] Minnesota allows DTs to be employed in private practices that serve Medicaid, and DTs are serving populations traditionally classified as underserved (Table 4). A study of 4 dental practices that employed DTs found that DTs were treating a substantial number of uninsured and underinsured patients. In addition, dentists performed fewer preventive and restorative services, with dentists conducting more complex procedures after DTs joined their practices.[65]

The introduction of DTs to Apple Tree Dental, a nonprofit community dental provider in Minnesota with over 80% of patients with public insurance, was associated with an increase in the number of patients served annually, more children receiving dental services, and dentists generating higher intensity/value services (Fig. 1). The number of patient visits per day, services provided, and the relative value of those services for DTs/ADTs also increased subsequent to their first years at Apple Tree Dental, suggesting that clinical experience and full integration into the dental team has further enhanced their contributions.[66]

DISCUSSION

Workforce reforms to improve access to care are not new, as can be seen by ongoing professional projects such as the advancement of nurse practitioners and physician assistants, as well as new roles such as medical assistants, and expansion of community-based providers such as paramedics, home care, and community health workers. In dental care, the traditional hierarchy of dentist, hygienist, and assistant is deeply ingrained in the established organization of practices.[13] The dental therapy movement seeks to both integrate into this ecosystem as well as challenge the traditional silos which have exclusionary impacts both for providers and those they serve. This movement is still active and evolving. This paper presents findings and reflections from the first 15 years on how the dental therapy movement is seeking to advance health equity.

Advancing Health Equity

Three factors lend themselves to the possibility of further spread and success of DTs in a way that advances health equity. The first is the strength of support and rapid growth of the dental therapy movement against a backdrop of strong coalition development around oral health access and equity.[67] Community leadership, engagement, and empowerment has been evident in these diverse statewide coalitions. Further, an explicit theme of decolonization and self-determination, with feminist undercurrents, has carried throughout each campaign in this movement. Advocates' unifying message of health equity has been instrumental to the movement's success over time in the face of sustained resistance from organized dentistry to change.[31,68–70]

Second, while implementation is far from achieved in many states, the legal, organizational, and educational frameworks for this occupation are now firmly established. Dental therapy was designed and implemented worldwide to increase access to oral health services through public health practice based on equitable principles and objectives. National education accreditation standards[19] and model legislative language[71] provide a clear and evidence-based road map for other states or Tribal nations seeking to authorize DTs in a flexible enough system to allow local adaptations while maintaining universal standards. Equity in opportunity comes particularly from programs at the community college level where education is most accessible and affordable within higher education. These efforts rebalance social and institutional power, while DTs also improve the economic vitality of their communities.

Finally, the evidence base on safety, acceptability, and outcomes that have been developed is irrefutable. Where DTs are fully deployed, quality of care is high, and improvements in access and patient outcomes is well established.

Challenges to Health Equity

Despite losing a high-profile federal lawsuit against ANTHC, and overwhelming and growing evidence of the safety and desirability of DTs, organized dentistry actively opposes the spread of DTs as evidenced by the ongoing efforts of its lobby at the state and federal level.[31–39] The primary challenge to further advancing equity is the full force of the dominant profession in the field organizing a well-financed and sustained opposition. Advocates who initially felt DTs were so obviously a win-win have had to reframe efforts into a much longer view of success. Sustaining a long-term, community-led approach when it is primarily funded by philanthropy is difficult. As well, having a clear definition of

equity is essential to marshal stakeholders invested in equity-related work, including championing efforts around dental therapy.[72]

Although CODA unified the educational standards, states are still passing laws with additional degree requirements and/or prerequisites as a compromise to satisfy political opponents. However, each additional layer added to the original dental therapy model takes the intent of a community-helmed solution and slowly makes it more exclusive. This is especially true in the linking of the hygiene and therapy professions. By requiring both, multiple layers of education, accreditation, and licensing standards unnecessarily complicate the movement and critically threaten the ability of dental therapy to open pathways towards improved equity in education and practice. Finally, the required practice setting restrictions intended to address access to care are also used by dentists as an exclusionary tactic to keep DTs from more lucrative markets. The state mandates replicate the same exclusion the very communities lacking services experience with dental care, where they remain under-resourced and therefore underserved. Long-term oral health equity outcomes will depend on increasing coverage and improving the delivery system structures and supports, as well as workforce reform.

The COVID-19 pandemic has shed a glaring light on the structural racism and inequality that permeates every aspect of the US health care system and raised safety questions about some of the fundamental practices in dentistry. The oral health care system has an opportunity to remake itself, shedding old forms and structures that were never truly accessible by much of the US population. Achieving oral health equity requires a radical approach to change, as the current market health care system and structures of social hierarchy do not have equity as a goal. When we apply deconstructive thinking to how we approach health equity through workforce innovations, we must confront the core structural tenet of "professionalism"—the codified practice of expert knowledge. This practice has been normatively embodied in overlapping colonial, patriarchal, and discriminatory forms, thereby literally creating underserved communities through structural "othering" of both people and knowledge.

Unsurprisingly, most workforce intervention strategies focus on downstream (health access) factors where health professionals have control "over" practice, without challenging the actual structures that precipitate oral health problems.[73] Conversely, an upstream approach to the workforce changes the power balance by bringing those communities into the production of health and centering the knowledge and factors important to that community, breaking the hegemonic paternalism of dentistry at every level. Dental therapy is unique in illuminating a pathway toward health equity by opening up new pathways that deconstruct traditional hierarchies and address the oral health of communities through truly community-engaged and community-responsive oral health care.

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