Advancing Oral Health Equity through Medical-Dental Integration: Dental hygienists as catalysts for change in an evolving health care system

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ABSTRACT

This report explores the changing landscape of oral health care delivery in the United States, highlighting the evolving role of dental hygienists. The 2021 National Institutes of Health report "Oral Health in America: Advances and Challenges" has become a key milestone in addressing oral health inequities, acknowledging the important role that dental hygienists could play in expanding innovative care models, and promoting medical-dental integration (MDI). The Rainbow Model of Integrated Care offers a framework to examine facilitators of MDI care models, revealing supportive policies, interprofessional collaborative practice, incremental change, and local leadership as some of the crucial components needed for success. Dental hygienists emerge as catalysts for change, as such, the overarching aim of this report is to contribute to the broader conversation about optimizing oral health care accessibility through integrated care models led by dental hygienists.

Keywords dental hygienists, medical dental integration, oral health inequities, access to care, interprofessional collaborative practice

NDHRA priority area, **Professional development: Regulation** (interprofessional collaboration).

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INTRODUCTION

In 2000, the Surgeon General's report titled "Oral Health in America" concluded that although common oral diseases are preventable, many people struggle to access oral health care in the United States (US) thus giving rise to widespread oral health inequities. Dental hygiene, a profession focused on oral health promotion, oral hygiene and preventive oral health care received minimal recognition in this landmark report.[1] However, considerable changes have occurred since the beginning of the 21st century, leading to an increased understanding of oral health, including the factors contributing to oral diseases and their prevalence, surpassing that of any comparable time period.[2] Indeed, during this time period, the dental hygiene profession increased in size, strength, and has gained heightened recognition nationally. In 2021, the American Dental Hygienists' Association (ADHA) was invited to participate in the development of the National Institutes of Health (NIH) report titled "Oral Health in America: Advances and Challenges," with dental hygienists from a variety of professional settings listed as contributing authors.[3-4] The report from the NIH described promising advancements in the delivery of oral health care, including innovative approaches to address oral health inequities. Addressing oral health inequities necessitates policy changes that support the expansion of innovative care models. Additionally, an imperative shift towards integrated dental, medical, and behavioral health care is essential. As the prevailing model of oral health care delivery may perpetuate disparities in oral health, the 2021 report emphasized the important role that dental hygienists

could play in the provision of oral health care to vulnerable groups, especially in non-traditional settings such as medical facilities, schools, and nursing homes, in addition to providing care to those who are homebound or institutionalized. As employment prospects for dental hygienists are expected to grow by seven percent between 2022 and 2032, an increase surpassing the average for all occupations, it is an opportune time to consider how dental hygienists can support the integration of medical and dental services.[4-5] This report will explore medical-dental integration (MDI), facilitators of MDI care models, and the dynamic role for dental hygienists in MDI care models. It will also examine the evolving landscape of the dental hygiene profession in the US, in addition to barriers that dental hygienists may encounter while actively supporting and participating in MDI initiatives. The overarching aim of this report is to contribute to the broader conversation about optimizing oral health care accessibility through integrated care models led by dental hygienists.

Facilitators of MDI Care Models

Medical Dental Integration care models in the primary care setting present an enormous opportunity to increase access to oral health care, particularly for vulnerable population groups, improving both care delivery and outcomes, while reducing health care costs.[4] Medical Dental Integration should not be viewed as a one-size-fits-all. A model of care that promotes MDI should be chosen based on the specific needs of the patient population as well as the capacity of its providers.

Although numerous MDI care models exist,[6] the need for interprofessional collaborative practice between dental and medical providers is central to this discussion.[7] The disconnection of oral health care from the broader health care system began when medical and dental education systems became compartmentalized, consequently giving rise to structural barriers such as separate systems for care delivery and reimbursement.[8] A multi-state analysis that examined how primary care providers and staff view dentists amid such structural barriers found that dentists are frequently not even considered part of the health care team.[9] Unfortunately, the prevailing narrative in the dental literature has normalized dentistry's separation from medicine, and so it is imperative that policy prioritizes oral health care integration as a way to reduce oral health disparities.[8] However, fostering integration in primary care is a complex process involving stakeholders across multiple levels.

The Rainbow Model of Integrated Care (RMIC) is a conceptual framework that was created to examine the complexities of care integration from various perspectives. The framework includes level-specific domains: clinical integration (micro level), organizational/professional integration (meso level) and system integration (macro level).[10] Harnagea et al. utilized this framework to identify level-specific facilitators of MDI in primary care. At the macro level, supportive policies, particularly those emphasizing reimbursement, contributed to the infrastructure needed for the sustainable implementation of MDI care models. At the meso and micro levels, interprofessional education was found to play a crucial role, specifically focusing on collaborative practices to empower providers with the understanding necessary for effective MDI. Other notable facilitators included the incorporation of appropriate case management to ensure shared health care responsibilities within the team and incremental modification of existing workflows, with staff buy-in, to foster a smooth transition towards MDI in primary care. Finally, the presence of local leadership to spearhead transformative change, and geographic proximity or the co-location of oral health care services emerged as practical considerations.[11]

Dynamic Roles for Dental Hygienists in MDI Care Models

The various facilitators identified by Harnagea et al. collectively constitute the ideal criteria needed for MDI care models to be successful in primary care. Many of these criteria can be satisfied by the employment of dental hygienists in primary care teams.[12-14] For example, by encouraging the employment of dental

hygienists as members of pediatric and prenatal care teams, the Wisconsin Medical-Dental Integration program (WI-MDI) has increased access to preventive oral health care services for children and pregnant women across multiple sites. Since 2019, the WI-MDI program has provided access to oral health care services in more than 15,000 patient visits to a pediatric or prenatal care provider.[12] At the macro level, this program was made possible by supportive policies that allowed dental hygienists to become certified Medicaid providers, which significantly expanded direct access to non-traditional settings, including medical offices, without requiring the authorization and supervision of a dentist.[11-12] Direct access is "the ability of a dental hygienist to initiate treatment based on their assessment of a patient's needs without the specific authorization of a dentist, treat the patient without the presence of a dentist, and maintain a provider-patient relationship."[15] At the meso and micro levels, the WI-MDI program leveraged appropriate case management (e.g. well-visits for pediatric and prenatal patients) and effective collaborative practice as dental hygienists became an integral part of the pediatric and prenatal care teams. Furthermore, there were incremental modifications of the existing workflow where the dental hygienist would typically provide care after the medical provider's portion of the well-visit appointment.[11-12] Each dental hygienist visit would take approximately 10 minutes and may consist of a caries risk assessment, the application of fluoride varnish and/or silver diamine fluoride as indicated, the provision of anticipatory guidance, and care coordination, such as referral to a dental home. This typical visit structure also leveraged the principle of local leadership and the co-location of oral health care services, as dental hygienists can focus on oral health promotion, oral hygiene, and preventive oral health care, while also facilitating care coordination for restorative dental care as indicated.[11-12]

The dental hygienists who participated in the WI-MDI program between 2019 and 2023 identified limited referral options to a restorative dentist as a significant barrier. Similarly, Braun et al. found that facilitating access to restorative dental care was a barrier in their MDI care model in the state of Colorado, despite otherwise positive results that showed the potential of integrating dental hygienists with primary care teams may have on oral health outcomes.[12-13] Leveraging telehealth may help the expansion of MDI care models. For example, in the SMILES (Spanning Miles in Linking Everyone to Services) Dental Home Model, telehealth was utilized to facilitate collaborative practice between a dental hygienist and a dentist. The dental hygienist would collect pertinent information needed to formulate a treatment plan, including clinical examination findings, intraoral x-rays, in addition to intraoral clinical photographs. This data was securely shared with a collaborating dentist at a "dental hub" to formulate a treatment plan. When a treatment plan was decided on, the dental hygienist could implement the plan in a non-traditional dental setting, or they could facilitate care coordination to a treating dentist.[6]

Policy Advocacy and Stakeholder Education

If dental hygienists are allowed to work at the top of their license and increase access to oral health care through innovative care models that promote MDI, effective policy supporting direct access should be a priority for all stakeholders in the broader health care system. Since the release of the Surgeon General's report in 2000, the proportion of states with some form of direct access has increased from 18% to 84%.[3] However, numerous state dental practice acts continue to present barriers to dental hygienists providing oral health care in non- traditional settings, therefore the majority of dental hygienists continue to work in dental offices.[3-4, 8] Dentists typically practice in isolation from other members the health care team,[16] thus limiting the capacity of dental hygienists to support MDI care models in non-traditional settings. As national accreditation standards for dental hygiene education are uniform across all states, differences should be minimal when it comes to the practice of dental hygiene as it applies to direct access. However, there is much inconsistency in the scope of practice permitted, including supervision requirements, limitations on choice of work setting and eligibility for direct reimbursement.[3, 15]

The Dental Hygiene Professional Practice Index (DHPII), a numerical tool designed to measure the state-level professional practice environment for dental hygienists, has been used in several studies to examine the relationship between the scope of practice of dental hygienists and access to oral health care and related costs.[17] In 2005, one study showed that an increased scope of practice led to increased utilization of basic oral health care.[18] Other studies have shown that when a restrictive scope of practice is imposed on dental hygienists, the cost for oral health care services has increased.[19-20] Indeed, results from one study showed that the costs associated with providing basic oral health care services were increased by 12% when dental hygienists were restricted from providing those preventive oral health care services.[20] Furthermore, it has been shown that when dental hygienists are reimbursed for the provision of oral health care services directly, the utilization of basic oral health care services increases by three to four percentage points.[20] However, only 38% of states permit direct reimbursement from Medicaid to dental hygienists who provide oral health care services for Medicaid-insured patients.[21] Supportive policies, especially those emphasizing reimbursement, are crucial to facilitating MDI in primary care.[11] Thus, policy advocacy and stakeholder education on the benefits of less restrictive licensure policies to increase access to preventive oral health care are critical for advancing oral health equity.[3-4, 8]

CONCLUSION

The dental hygiene profession has the potential to reshape how oral health care is delivered in primary care settings. Policy advocacy is imperative for this potential to be realized. Stakeholder education on powerful potential of the dental hygienist workforce, allowed to practice the top of their license, to increase access to oral health care in non-traditional settings. By amplifying the dynamic role of dental hygienists as the quintessential facilitators of MDI in primary care, this short report contributes to the broader dialogue on advancing oral health equity through innovative and integrated care models.

DISCLOSURES

The author has no conflicts of interest to disclose.

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REFERENCES

1. U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.
2. D'Souza RN, Collins FS, Murthy VH. Oral health for all - Realizing the promise of science. N Engl J Med. 2022 Mar 3;386(9):809-11.
3. Gadbury-Amyot CC, Simmer-Beck ML, Lynch A, Rowley LJ. Dental hygiene and direct access to care: Past and present. J Dent Hyg. 2023 Oct;97(5):24-34.
4. National Institutes of Health. Oral health in America: Advances and challenges. Bethesda, MD: US Department of Health and Human Services, National Institutes of Health, National Institute of Dental and Craniofacial Research; 2021.
5. Bureau of Labor Statistics. Occupational outlook handbook, dental hygienists [Internet]. Washington DC: U.S. Department of Labor; 2024 [cited 2024 Jan 2]. Available from: https://www.bls.gov/ooh/healthcare/dental-hygienists.htm
6. Braun PA, Cusick A. Collaboration between medical providers and dental hygienists in pediatric health care. J Evid Based Dent Pract. 2016 Jun;16 Suppl:59-67.
7. Ahern J, McGeown D, Nunn J. Dentist's views on incorporating oral health collaborative practice into primary medical care in Ireland. Community Dent Health. 2018 Nov 29;35(4):252-56.
8. Mertz EA. The dental-medical divide. Health Aff (Millwood). 2016 Dec 1;35(12):2168-75.
9. Ahern J, Singer S, Bhanja A, et al. Considering dentists within the healthcare team: A cross-sectional, multi-state analysis of primary care provider and staff perspectives. J Gen Intern Med. 2022 Jan;37(1):246-48.

10. Valentijn PP. Rainbow of chaos: A study into the theory and practice of integrated primary care: Pim P. Valentijn, [S.l.: s.n.], 2015 (Print Service Ede), pp. 195, Doctoral Thesis Tilburg University, The Netherlands, ISBN: 978-94-91602-40-5. Int J Integr Care. 2016 May 3;16(2):3.

11. Harnagea H, Couturier Y, Shrivastava R, et al. Barriers and facilitators in the integration of oral health into primary care: A scoping review. BMJ open. 2017 Sep 1;7(9): e016078.

12. Linden JE, Gundacker CLU, Deinhammer L, Crespin M. Medical dental integration in Wisconsin: Integrating dental hygienists into pediatric well child visits and prenatal care. J Dent Hyg. 2023 Jun;97(3):13-20.

13. Braun PA, Chavez C, Flowerday C, et al. Embedding dental hygienists into medical care teams: Implementation and evaluation of a medical-dental integration approach in Colorado. J Dent Hyg. 2023 Jun;97(3):21-27.

14. Battani K, Norrix E, Sailor L, Farrell C. Improving access to oral health care: Integrating dental hygienists into federally qualified health center obstetrics and gynecology clinics in Michigan. J Dent Hyg. 2023 Jun;97(3):7-12.

15. ADHA. Direct access [Internet]. Chicago (IL): American Dental Hygienists Association; 2023 [cited 2024 Jan 2]. Available from: https://www.adha.org/advocacy/scope-of-practice/direct-access/

16. Peres MA, Macpherson LMD, Weyant RJ, et al. Oral diseases: A global public health challenge. Lancet. 2019 Jul 20;394(10194):249-60.

17. Health Resources and Services Administration. The professional practice environment of dental hygienists in the 50 states and the District of Columbia, 2001 [Internet]. Bethesda (MD): National Center for Health Workforce Analysis, Bureau of Health Professions, US Department of Health and Human Services; 2004 Apr [cited 2024 Jan 2]. Available from: http://bhpr.hrsa.gov/healthworkforce/reports/dentalhygiene50statesdc.pdf

18. Wing P, Langelier MH, Continelli TA, et al. A dental hygiene professional practice index (DHPPI) and access to oral health status and service us in the United States. J Dent Hyg. 2005 Spring; 79(2):1-10.

19. Kleiner MM, Kudrle RT. Does regulation affect economic outcomes? The case of dentistry. JL & Econ. 2000 Oct;43(2):547-82.

20. Wing, C, Marier, A. Effects of occupational regulations on the cost of dental services: evidence from dental insurance claims. J Health Econ. 2014 Mar; 34:131-43.

21. ADHA. Medicaid reimbursement [Internet]. Chicago (IL): American Dental Hygienists Association; 2023 [cited 2024 Jan 2]. Available from: https://www.adha.org/advocacy/scope-of-practice/direct-access/reimbursement/