### **RESEARCH BRIEF** INFORMING PUBLIC HEALTH

Number 35 🛛 June 2025

# Oral Medical Care Coordination in the United States: Literature Review Methodology and Four Pillars of Care Coordination

Kristen D. Holtz, PhD, <sup>1</sup> Nicole I. Wanty, MAA, <sup>1</sup> Barbara Z. Park, RDH, MPH, <sup>2</sup> Elizabeth R. Phelps <sup>1</sup>

**Authors' Affiliation:** 

- 1. KDH Research & Communication
- 2. National Association of Chronic Disease Directors

# Background

Oral medical care<sup>1</sup> coordination strives to improve public health outcomes by integrating care for the mouth and body to achieve reductions in poor oral health and chronic disease (see research brief 34 in this series for more information on the importance of oral medical care coordination and current barriers to its adoption).

Oral medical care coordination is reified by several examples, ranging from oral health providers screening for medical risk factors like hypertension or diabetes during regular cleanings, pediatricians conducting oral checkups during well-child visits, fully coordinating or co-locating practices, and encouraging "warm handoffs" between oral health and medical providers to better address specific patients' care needs.

While the evidence base on the benefits of oral medical care coordination is robust, less is known about current levels of adoption of such coordinated systems in the U.S. The University of Iowa conducted the seminal comprehensive literature review on this topic in 2018,<sup>1</sup> and, in 2021, KDHRC undertook a systematic effort to extend and update that research. We examined peer-reviewed articles, state oral health and chronic disease plans, and grey literature on oral medical care coordination to determine how health care, dental, and public health systems implement oral medical care coordination. Then, KDHRC conducted expert interviews and hosted convenings to verify the validity of a proposed four pillar framework to advance oral medical care coordination.

This brief provides an overview of our literature review process and introduces a framework with four

<sup>&</sup>lt;sup>1</sup> In this brief, we use the term oral health care to describe care of the teeth, gums, and soft tissue in the mouth, and dental care to refer to care of teeth and gums.





pillars to advance oral medical care coordination. Additional briefs describe the four pillars in more detail (see research briefs 36-39 in this series).

# **Methods**

We conducted a systematic literature review to explore this key question: "How do oral and medical health providers in the United States implement oral medical care coordination?"

### Search strategy and criteria

We conducted a comprehensive search for relevant sources, including peer-reviewed and non-peerreviewed sources. We searched the health-information databases PubMed and CINAHL and manually reviewed article references to locate additional items. We also searched for relevant state oral health and chronic disease plans, including dental hygiene and therapist scopes of practice, health improvement plans, and prenatal oral health guidelines. In addition, we searched the websites of relevant organizations such as the Association of State & Territorial Dental Directors; the Oral Health Workforce Research Center; HRSA's Maternal and Child Health National Performance Measure Distributions; and the National Maternal and Child Oral Health Resource Center. We also searched grey literature, including conference presentations, technical reports, and grants.

We searched for materials that described specific activities linking oral and medical health. Other inclusion criteria:

- Written in English
- Published July 2013 to December 2021
- Included human subjects
- Research conducted in the United States, the United Kingdom, Australia, or Canada

Exclusion criteria:

- Does not include information about a specific mechanism to address oral and medical health entities
- Editorial or opinion pieces

### Sources identified

This comprehensive search produced almost 10,000 results, including 6,504 from PubMed, 3,173 from CINAHL, and 294 from other sources. We imported all identified items into a reference management program (EndNote) and removed duplicates. After we removed duplicates, 6,162 articles remained for initial screening of titles/abstracts. Based on this initial screening for relevancy, we reviewed 775 articles in full text. Ultimately, with the inclusion of grey literature, we included 715 full-text articles in the final analysis.

### Analysis approach

Once we identified the final set of full-text articles, we used both quantitative and qualitative approaches to analyze the data. Our researchers manually coded the articles for variables such as provider type, type of educational program, setting, patient population, disease or condition, implementation approach, outcomes, themes, and key takeaways. We then coded the articles using a qualitative data analysis software program (ATLAS.ti) to capture quotations, implementation themes, facilitators, and barriers. When exploring our key research question of "How do oral and medical health providers in the United States implement oral medical care coordination," we created five main categories of articles describing distinct program types:

1. **Education Exploratory**: Articles that explore the presence of interprofessional education

opportunities (where students learn about different professions) in professional degrees,<sup>2</sup> residencies,<sup>3</sup> and continuing education programs.<sup>4</sup>

- Education Implemented: Articles that describe implementation strategies or evaluate the effects and/or the feasibility of interprofessional education opportunities in professional degrees,<sup>5</sup> residencies,<sup>6</sup> and continuing education programs.<sup>7</sup>
- 3. **Provider Exploratory**: Articles that used descriptive data to explore the presence of oral medical care coordination for health care professionals<sup>8–10</sup>
- 4. **Provider Implemented**: Articles that describe the implementation and evaluation of the effects of and/or the feasibility of oral medical care coordination for health care professionals.<sup>11–13</sup>
- Informative: Articles that use supportive information such as evidence in the literature,<sup>14</sup> cost analyses,<sup>15</sup> policies,<sup>16</sup> and surveys<sup>17</sup> to describe and provide recommendations for oral medical care coordination.

We reviewed each article for information on the professional roles involved in care coordination, methods of implementation, facilitators and barriers encountered, and sustainability practices. We also synthesized themes by examining patterns and recurring topics across the coded articles. This iterative approach ensured a thorough analysis of the literature.

# **Findings**

From our understanding of the five major types of programs supporting oral medical care coordination (listed above), we further drilled down on key program characteristics that undergird success, replicability, or sustainability. These components are named as pillars in a framework of change required before oral medical care coordination can be meaningfully implemented on a broad scale. The pillars are **Awareness**, **Workforce Development and Operations**, **Payment**, and **Information Exchange**, as defined below (see Figure 1).<sup>18</sup>





• Awareness: Includes the extent of knowledge, familiarity, acceptability, and conceptions about oral health and coordinated care topics among future and practicing health care providers across the life span.

Workforce Development and **Operations:** Involves empowering care providers and others to work across disciplines to establish organizational structures supporting whole person coordinated care. Interprofessional education is critical here, because numerous health care providers are involved, from medical providers (e.g., physician assistants, nurses, medical assistants/aides), oral health providers (e.g., dentists, dental hygienists, dental therapists), and others (e.g., community health workers, pharmacists, behavioral health providers). The meaningful involvement and ongoing training of all these professionals is vital to the success of oral medical care coordination.

- **Payment**: Involves oral health coverage, reimbursement and billing procedures, payment policies, and payment structures.
- **Information Exchange**: Encourages health care providers to communicate and work collaboratively in interdisciplinary teams and increase patient access to care through use of coordinated electronic health records (EHRs) with clinical support tools and referrals.

## Conclusion

This literature review provides an updated examination of the state of oral medical care coordination in the U.S. This systematic and comprehensive review also provides a robust overview of the current landscape of oral medical care coordination, offering valuable insights into the facilitators, barriers, and sustainability of integrative practices. Based on these findings and validation via expert interviews and hosted convenings, we identified four pillars that are critical to improving this vital care coordination, and we provide details of each of these pillars in subsequent research briefs.

# References

- 1. McKernan, S. C., Kuthy, R., Tuggle, L., & García, D. T. (2018). *Medical-Dental Integration in Public Health Settings: An Environmental Scan Medical-Dental Integration in Public Health Settings: An Environm University of Iowa*. https://doi.org/10.17077/ax7d-a2rg
- 2. Tolle, S. L., Vernon, M. M., McCombs, G., & De Leo, G. (2019). Interprofessional Education in Dental Hygiene: Attitudes, barriers and practices of program faculty PubMed. *Journal of Dental Hygiene*, *93*(2), 13–22. https://pubmed.ncbi.nlm.nih.gov/31015303/
- 3. Dalal, M., Savageau, J. A., Silk, H., & Isong, I. (2019). Oral Health Training in Pediatric Residency Programs: Pediatric Program Directors' Perspectives. *Journal of Dental Education*, *83*(6), 630–637. https://doi.org/10.21815/JDE.019.058,
- 4. Dickson-Swift, V., Kenny, A., Gussy, M., McCarthy, C., & Bracksley-O'Grady, S. (2020). The knowledge and practice of pediatricians in children's oral health: a scoping review. *BMC Oral Health*, *20*(1), 211. https://doi.org/10.1186/S12903-020-01198-0
- Biethman, R. K., Pandarakalam, C., Garcia, M. N., Whitener, S., & Hildebolt, C. F. (2017). Screening for Diabetes in a Dental School Clinic to Assess Interprofessional Communication Between Physicians and Dental Students. *Journal of Dental Education*, *81*(9), 1062–1067. https://doi.org/10.21815/JDE.017.059,
- Czarnecki, G. A., Kloostra, S. J., Boynton, J. R., & Inglehart, M. R. (2014). Nursing and dental students' and pediatric dentistry residents' responses to experiences with interprofessional education -PubMed. *Journal of Dental Education*, 78(9), 1301–1312. https://pubmed.ncbi.nlm.nih.gov/25179927/
- Fernandez, J. B., Ahearn, K., Atar, M., More, F. G., Sasson, L., Rosenberg, L., Godfrey, E., Sehl, R., & Daronch, M. (2017). Interprofessional Educational Experience among Dietitians after a Pediatric Dentistry Clinical Rotation. *Topics in Clinical Nutrition*, *32*(3), 193–201. https://doi.org/10.1097/TIN.00000000000112
- Singer, R. H., Feaster, D. J., Stoutenberg, M., Hlaing, W. W. M., Pereyra, M., Abel, S., Pollack, H., Gellman, M. D., Schneiderman, N., & Metsch, L. R. (2019). Dentists' willingness to screen for cardiovascular disease in the dental care setting: Findings from a nationally representative survey. *Community Dentistry and Oral Epidemiology*, 47(4), 299–308. https://doi.org/10.1111/CDOE.12457,
- Prakash, P., Belek, M. G., Grimes, B., Silverstein, S., Meckstroth, R., Heckman, B., Weintraub, J. A., Gansky, S. A., & Walsh, M. M. (2013). Dentists' attitudes, behaviors, and barriers related to tobacco-use cessation in the dental setting. *Journal of Public Health Dentistry*, 73(2), 94–102. https://doi.org/10.1111/J.1752-

### 7325.2012.00347.X;REQUESTEDJOURNAL:JOURNAL:17527325;WGROUP:STRING:PUBLICATION

- Pollack, H. A., Pereyra, M., Parish, C. L., Abel, S., Messinger, S., Singer, R., Kunzel, C., Greenberg, B., Gerbert, B., Glick, M., & Metsch, L. R. (2014). Dentists' Willingness to Provide Expanded HIV Screening in Oral Health Care Settings: Results From a Nationally Representative Survey. *American Journal of Public Health*, 104(5), 872. https://doi.org/10.2105/AJPH.2013.301700
- Barasch, A., Gilbert, G. H., Spurlock, N., Funkhouser, E., Persson, L. L., & Safford, M. M. (2012). Random Plasma Glucose Values Measured in Community Dental Practices: Findings from The Dental Practice-Based Research Network. *Clinical Oral Investigations*, *17*(5), 1383. https://doi.org/10.1007/S00784-012-0825-Y
- Chungid, R., Leung, S. Y. J., Abel, S. N., Hatton, M. N., Ren, Y., Seiver, J., Sloane, C., Lavigne, H., O'Donnell, T., & O'Shea, L. (2020). HIV screening in the dental setting in New York State. *PLOS ONE*, 15(4), e0231638. https://doi.org/10.1371/JOURNAL.PONE.0231638
- 13. Herman, W. H., Taylor, G. W., Jacobson, J. J., Burke, R., & Brown, M. B. (2015). Screening for prediabetes and type 2 diabetes in dental offices. *Journal of Public Health Dentistry*, *75*(3), 175–182. https://doi.org/10.1111/JPHD.12082
- 14. DiMaria-Ghalili, R. A., Mirtallo, J. M., Tobin, B. W., Hark, L., Van Horn, L., & Palmer, C. A. (2014). Challenges and opportunities for nutrition education and training in the health care professions: Intraprofessional and interprofessional call to action. *American Journal of Clinical Nutrition*, 99(5). https://doi.org/10.3945/ajcn.113.073536
- Neidell, M., Shearer, B., & Lamster, I. B. (2016). Cost-Effectiveness Analysis of Dental Sealants versus Fluoride Varnish in a School-Based Setting. *Caries Research*, *50*(Suppl. 1), 78–82. https://doi.org/10.1159/000439091
- 16. Gonzalez, M., Sanders-Jackson, A., & Glantz, S. A. (2014). Association of strong smoke-free laws with dentists' advice to quit smoking, 2006-2007. *American Journal of Public Health*, *104*(4). https://doi.org/10.2105/AJPH.2013.301714,
- Walsh, S. E., Chubinski, J., Sallee, T., & Rademacher, E. W. (2016). Public Opinions Regarding Advanced Dental Hygiene Practitioners in a High-Need State - PubMed. *Journal of Dental Hygiene*, 90(5), 269– 274. https://pubmed.ncbi.nlm.nih.gov/29118179/
- 18. Wanty, N. I., Long, C., Park, B. Z., McNeill, A. R., Malicoate, K., & Phelps, E. (2024). Oral Medical Care Coordination: A Systematic Literature Review and Guide Forward.

### NUMBER 35 S JUNE 2025

# KDH RESEARCH & COMMUNICATION | kdhrc.com

# Acknowledgements

The National Association of Chronic Disease Directors (NACDD) received funding from the Centers for Disease Control and Prevention (CDC) Division of Oral Health (DOH) for the Medical-Dental Integration (MDI) project (award number 5-NU38OT000286-03, CFDA number 93.421). NACDD contracted with KDH Research & Communication (KDHRC) to assist NACDD.

KRISTEN D. HOLTZ, PHD is the Founder and President at KDH Research & Communication NICOLE I. WANTY, MAA is a Senior Research Scientist at KDH Research & Communication BARBARA Z. PARK, RDH, MPH is a Public Health Consultant at National Association of Chronic Disease Directors

ELIZABETH R. PHELPS is a Research Assistant at KDH Research & Communication



145 15th Street NE Suite 831 Atlanta, GA 30309

www.kdhrc.com publicaffairs@kdhrc.com

KDH RESEARCH & COMMUNICATION is a non-partisan, public health, research and communications agency. The goal of the "Informing Public Health" brief series is to disseminate innovative, objective, and timely information to solve public health and other social issues. KDHRC actively contributes to a future when all people can find, understand, and act on information to safeguard the health of themselves, their families, and their communities.

The views expressed here are those of the authors and do not necessarily reflect those of KDH Research & Communication, its board, or funders. Permission is granted for reproduction of this document with attribution to KDH Research & Communication.