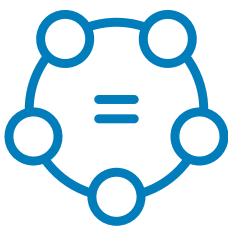
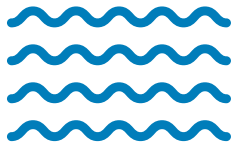
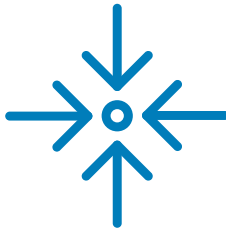


# Innovations in Oral Health and Primary Care Integration

Alignment with the Shared Principles of Primary Care



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### ADVISORY GROUP

PCC convened an advisory group to help inform this report. The following individuals contributed to developing and evolving the final document over the last year:

**Chair: Anita Glicken**, MSW, National Interprofessional Initiative on Oral Health

**Lynda Flowers**, JD, MSN, RN, AARP

**Dean Fry**, DDS, Humana

**Ann Greiner**, MCP, Primary Care Collaborative

**Judith Haber**, PhD, APRN, FAAN, NYU College of Nursing

**Lawrence Hill**, DDS, MPH, American Association for Community Dental Programs

**Alan Morgan**, MPA, National Rural Health Association

**Cheryl Parcham**, MSW, Families USA

**Russ Phillips**, MD, Center for Primary Care, Harvard Medical School

**Jason Roush**, DDS, Association of State and Territorial Dental Directors

**Ann Salamone**, DDS, New York Hotel Trades Council (formerly)

**Hugh Silk**, MD, MPH, FAAFP, University of Massachusetts Medical School

**Howard Straker**, EdD, PA, MPH, George Washington University

**Capt. Pamela Vodicka**, Health Resources & Services Administration

**Marko Vujcic**, PhD, Health Policy Institute, American Dental Association

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# Executive Summary

**O**ral health *is* health. Yet for far too many Americans, it is unreachable. One-third of Americans do not have dental insurance, and low-income Americans and those with public insurance have substantially lower rates of dental access than their more well-off neighbors, friends, and family.<sup>1,2</sup> These oral health inequities most directly impact groups that have endured and continue to face racism and injustice. Communities of color have higher rates of tooth decay and tooth loss and lower rates of annual dental visits.<sup>3,4,5</sup> Dental care utilization is even lower among people of color who report experiencing more frequent discrimination.<sup>6</sup>

The consequences of these inequities are far-reaching. Oral health interacts with and impacts multiple chronic health conditions.<sup>7,8,9</sup> Patients in pain with untreated oral health needs often end up in hospital emergency departments, where their dental disease most often cannot be treated, with significant consequences for individual patients and substantial costs to the health system.<sup>10</sup> Tragically, such untreated disease can even, in rare cases, lead to death. Independent of these unfortunate outcomes, the shame and pain experienced by too many Americans with poor oral health represents entirely preventable suffering that disproportionately affects the most vulnerable, demonstrating the synergy between oral health and the social determinants of health.

Primary care, as the main point of entry and access to support for patients in the healthcare system, represents a remarkable opportunity to better meet patients' oral health needs across the socio-economic spectrum. In particular, integration of oral health and primary care is increasingly acknowledged as a key strategy to achieve health justice.

Models of primary care and oral health integration epitomize the Seven Shared Principles of Primary Care, a consensus-derived framework that articulates the ideal values of primary care delivery and which has been embraced by more than 350 diverse organizations.<sup>11</sup> The Shared Principles state that primary care should be:

- 1) person- and family-centered;
- 2) continuous;
- 3) comprehensive and equitable;
- 4) team-based and collaborative;
- 5) coordinated and integrated;
- 6) accessible; and
- 7) high-value.

This compendium demonstrates the dynamic and innovative ways that healthcare clinicians, community members, and public health leaders are working together to reunite oral health and primary care through the lens of these Shared Principles. We highlight the many diverse mechanisms and the varying scope of integration efforts, ranging from statewide

initiatives to incorporate oral health care into value-based primary care payment models to initiatives to embed oral health within the fabric of the community, such as food pantries and schools. Examples illustrate the potential for oral health to be delivered in the primary care setting and primary care to be a key component of a dental visit. We describe interoperable electronic health records that seamlessly share medical and oral health data and programs that send front-line health workers to provide oral health and medical care to patients in their homes. We include educational initiatives that will ensure the next generation of primary care clinicians is equipped with oral health skills as well as programs to empower patients themselves to care for their oral health. These initiatives enhance care for patients across the life spectrum from pregnant women and infants to older adults living in skilled nursing facilities, a group with some of the most severe unmet oral health needs in the nation.

The continued success of these oral health integration efforts has important precedent in other landmarks in primary care innovation. The establishment of competencies surrounding interprofessional collaborative practice and the adoption of interprofessional education mandates across health professions has encouraged adoption of oral health curricula for many future primary care clinicians and other health professionals. The patient-centered medical home (PCMH) model has made equitable, comprehensive, whole-person care the centerpiece of primary care, opening the door for oral health integration within medical homes. And the behavioral health integration movement has demonstrated effective tactics to engage stakeholders and disseminate care models that provide better, more comprehensive primary care. Taken together, these efforts and the many innovations within the compendium demonstrate the future of whole-person care: an integrated, quality-based delivery system in which the behavioral health, oral health,

medical, and social needs of individuals, families, and communities are accounted for by high-functioning teams that put the priorities and goals of patients first and elevate community voices for continuous improvement.

The models highlighted in this compendium celebrate what is possible in primary care, yet do so despite being embedded in a system that continues to keep oral health out of the reach of people who are most vulnerable and a payment system that does not readily support integration. In the midst of the COVID-19 pandemic and with a new presidential administration at the helm, the opportunity to help rectify deeply embedded structural racism within health care has arrived. Now is the time to ensure oral health is not left out of a transformed health system, focused, in the words of Dr. Martin Luther King Jr., on bending (the system) towards justice.

As communities and the nation strive to move forward, we highlight key policy changes needed to truly integrate oral health and primary care. First, we call on the primary care and oral health communities to advocate with policymakers for increased oral health coverage through expanding Medicaid and adult Medicaid dental coverage and adding a dental benefit in Medicare. Coverage, however, is not access, and we further call for leaders in education to support a more diverse, equitably distributed oral health workforce to meet the needs of communities across the nation.

We also call public and private payers and quality experts to develop oral health-related quality measures to incentivize oral health prevention, interprofessional collaboration, and reduction in inequities as well as for the information technology infrastructure to support related data collection. Such measures will support the more rapid adoption of value-based payment models that encourage medical homes to innovate, build out their teams, and deliver a truly comprehensive set of services, including oral health, that better

meet individual and community needs. Payment reform is sine qua non—without it, the exemplars in this compendium will remain the exceptions and not the rule.

Such change will not be easy. Innovation will require changing long-standing systems of care and developing and refining new ones. Yet this is necessary. More integrated and enriched

models of primary care and oral health delivery will empower clinicians to work together to provide the care their patients need and to develop models of support and outreach to meet those patients where they are. Above all, we must continually ally with and defer to the voices of patients and their communities to ensure that the systems we build are respectful, compassionate, and just.

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## INTRODUCTION

# The Importance of Comprehensive Care

**P**rimarily care ideally serves as the main access point and longitudinal relationship for patients. As each individual will have a different set of needs, optimal primary care must provide patients access to what they need, when they need it, and with as few barriers as possible—a *comprehensive* model of care.<sup>1</sup> Such a model empowers primary care that focuses on both prevention and treatment of behavioral health, health, and social needs—including prevention of oral disease. While primary care has not historically included oral health, the value of a comprehensive care model has been long established. Comprehensive primary care ensures that all clinicians and staff operate at the top of their skill set, providing an expanded scope of services to meet patients' clinical needs as well as preferences for accessibility, convenience, reasonable cost, and connection to community services. Comprehensiveness must be achieved through a multipronged approach that incorporates team-based care, empowers clinicians and staff, and ensures high-quality care for all patients.

In models of comprehensive care, patients have access to a broader range of services and resources within the primary care setting, increasing ease of access and streamlining care for patients. Studies have repeatedly shown that patients whose clinicians use a broader range of skills in routine

practice—whether procedures, counseling, or depth of engagement with patient problems—are less likely to be admitted to the hospital and have lower healthcare costs.<sup>2,3,4</sup> These comprehensive skill sets can include oral healthcare services, even though few practices may currently do so.<sup>5,6</sup>

An evaluation of 64 primary care practice sites that routinely delivered high-value primary care (care that exceeded quality benchmarks at a lower per-capita cost) found they were significantly more likely to adopt a culture of comprehensiveness, such as care coordination, inclusion of and communication with needed specialists, care-management programs, and electronic health record innovations to support clinician decision-making and care quality.<sup>7</sup> In addition to improving quality of care, such measures also allow clinicians to have more meaningful and enriching relationships with patients because they are able to provide what patients need and can spend less time on care-coordination activities when needed resources are more accessible. Comprehensive practice helps support the “quadruple aim” of an enhanced patient experience, improved population health, lower healthcare costs, and greater clinician satisfaction.<sup>8</sup>

Beyond individual clinician practice, comprehensive care can be even more impactful in both enhancing population



health and addressing health inequities. The COVID-19 pandemic has laid bare the failings of the current healthcare system for Black communities and other communities of color as well as institutionalized older adults, people experiencing homelessness or incarceration, and people with disabilities.<sup>9, 10</sup> Comprehensive primary care services can begin to rectify the systemic injustice that continues to disproportionately impact the health of these populations by ensuring that patient needs are met in a personalized, holistic manner that is identity-affirming and addresses social needs, prevention, education, and health needs without fragmentation.

The COVID-19 pandemic also reflects opportunities for oral health care to become a better-integrated component of primary care practice. With almost all dental practice halted for the first months of the pandemic, oral health clinicians rapidly adapted to providing care via telehealth, which can bring oral health diagnosis into settings where patients traditionally struggle to reach a dental clinician.<sup>11</sup> Dental clinicians may begin to test for COVID-19 in the dental office, and the need for interoperable records to convey crucial information on symptoms and medical history may ultimately result in more seamless care for patients when they visit medical and dental clinicians.<sup>12</sup>

Most importantly, patients find comprehensive primary care important, valuable, and validating. Such a system is almost certainly able to provide more personalized, convenient, patient-centered care, because a broad array of an individual's needs can be met in the context of their lived experience. In nine focus groups conducted by Community Catalyst across the country, participants described the appeal of a “holistic, one-stop shop” that ensured access to all forms of needed primary care and included both care navigation and access to

social services. As one participant noted, through a comprehensive care model, “a lot of what is making you ill or keeping you ill or making you worse is lifted off your shoulders.”<sup>13</sup>

As with behavioral health care, oral health care has traditionally been overlooked and underappreciated by primary care delivery systems, while access to dental clinicians has been limited by clinician distribution, insurance structures, and payment models that render oral health care more difficult to find or afford for many of the most vulnerable patients. Primary care practices have become the “front line” for patients with these unmet needs, even if structures do not yet exist to support comprehensive care that incorporates oral health.<sup>14</sup> By expanding the comprehensive care model, primary care practices may embrace their role in addressing oral health and move toward a model that is truly the person-centered, “one-stop shop” imagined by consumers to humanistically meet their needs.<sup>13</sup> As the healthcare system evolves in response to COVID-19, such systems can also serve as the front line of community-centered care that incorporates principles of public health and epidemiology to maximize the health of all.

Diverse and interwoven oral health-integration efforts showcase the value of a comprehensive care framework. Comprehensive care that includes oral health can occur only when primary care clinicians acquire the knowledge and skills that are used to address the oral health needs of patients (such as fluoride varnish application or dental anesthetic injections)<sup>6</sup>; when all clinicians work at the top of their skillsets (such as when medical assistants conduct early childhood caries screening during pediatric well-child visits)<sup>15</sup>; and when specialists are judiciously incorporated into care delivery (such as through co-location of dental hygienists within primary care practices).<sup>16</sup>

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## INTRODUCTION

# The Case for Oral Health

Oral health problems are widespread. Dental caries, caused by the bacterium *Streptococcus mutans*, are considered the most prevalent infectious disease on earth, infecting nearly every person by adulthood.<sup>1</sup> Globally, more than one-third of the population has untreated dental caries, including an estimated 573 million children with untreated decay.<sup>2</sup> An estimated 42% of adults in the United States have periodontal disease, a chronic inflammatory condition resulting in bone loss, loose teeth, and painful, swollen gums.<sup>3</sup> Rates of mouth and throat cancer have been increasing in both the United States and worldwide.<sup>2</sup>

Oral conditions impact the body in myriad ways, and oral disease has been associated with worse outcomes across multiple health conditions and organ systems. The chronic inflammation associated with periodontal disease has been associated with worsened glycemic control among people with diabetes<sup>4</sup> as well as increased risk of preterm birth.<sup>5</sup> Older adults with missing teeth have worse nutrition and are more likely to have nutrient deficiencies.<sup>6</sup> Poor oral health among people admitted to the hospital increases the risk of pneumonia.<sup>7</sup>

These associations and their biological underpinnings have also led to theorized healthcare cost savings for integrated medical and dental care. Evaluations of insurance claims

data have found potential annual savings of more than \$1,000 annually as well as fewer hospitalizations for at-risk patients who receive combined medical and dental care.<sup>8, 9, 10</sup> Yet several clinical trials and meta-analyses have failed to find improvements in medical status when dental treatment is provided.<sup>5, 11-15</sup> These studies have largely been restricted to treatment for periodontal disease, rather than evaluating the impact of comprehensive whole-person care and do not take a patient-centered perspective on the true value of oral health. Several studies have confirmed that providing comprehensive dental treatment with an emphasis on preventive services decreases rates of dental disease and the need for more invasive dental treatment.<sup>16, 17, 18</sup> Stronger evidence and more robust research to support the role of dental treatment in improving downstream health outcomes are needed.

But importantly, the impact of poor oral health cannot be understood exclusively through potential associations with other health conditions. Even without harmfully affecting other health conditions, oral health problems can cause pain, discomfort, and in some cases even death. Poor oral health impacts can also have an effect on employment prospects and an individual's self-confidence, among other economic, mental, and social problems. These outcomes are all the more tragic because dental disease is almost entirely preventable.

Unmet oral health needs are exacerbated by and affect the social determinants of health. Income inequality is associated with worse oral health and oral health-related quality of life, an especially concerning finding given the dramatic increase in income inequality over the past four decades.<sup>24</sup> Structural and personal experiences of discrimination, racism, and injustice also contribute to unequal outcomes in health and oral health.

The relationship between the social determinants of health and oral health is bi-directional: Just as the social determinants of health impact individuals' ability to achieve optimal oral health, oral health also has important implications for individuals' economic and social functioning. Missing teeth make eating fibrous, nutrient-dense foods, such as fruits and vegetables, more difficult.<sup>25</sup> This bi-directional relationship is perhaps most dramatically manifested in the economic impact of unmet oral health needs. In the U.S. each year, an estimated 321 million hours are lost from school and work from individuals seeking treatment for dental pain.<sup>26</sup> This is especially likely to impact children and families already facing economic disadvantage and who may have the most tenuous employment. There is even evidence that growing up in an area with fluoridated water, known to reduce rates of dental caries and tooth loss, may ultimately lead to higher salaries in adulthood, due to the perceived social value of an aesthetic smile.<sup>27</sup>

The social import of oral health can worsen the suffering experienced by people with poor oral health. Missing or broken teeth can not only cause physical pain but also shame and mental distress. Older adults without teeth have higher rates of depression and feelings of social isolation.<sup>28, 29</sup> People with low incomes and poor oral health are more likely to report difficulty finding a job as a result of their dentition.<sup>30</sup> For high-risk patients, receiving dental services improves both self-confidence and subsequent employment.<sup>31, 32</sup>

One of the biggest challenges patients face in accessing health care and that clinicians face in delivering comprehensive care can be attributed to the isolation of the dental system from the rest of the healthcare system. Since 1840, when a group of physicians founded the first dental school in the United States, dental education and treatment have developed at a remove from other forms of health care.<sup>33</sup> This has resulted in limited oral health training for the majority of healthcare clinicians that has only recently begun to be rectified.<sup>34</sup> Dental insurance similarly developed separately from medical insurance, resulting in an oral health system that most often provides price reductions for less costly procedures and less or no coverage for more expensive (and often urgent) treatment.

While the separation of medicine and dentistry has persisted in systems of care delivery, the human body makes no such distinction. Dental pain is a common presentation to medical care, often due to lack of access to dental treatment. There are more than 2.4 million emergency department visits for acute toothache pain every year, a very large proportion of which are among uninsured or publicly insured patients.<sup>35</sup> <sup>36</sup> Although representing 1.5% of all emergency department visits, definitive dental treatment is almost never available in such settings, most often resulting in a prescription and a recommendation to visit a dental clinician as

soon as possible.<sup>37</sup> Such visits also result in high rates of opiate prescriptions for uncontrolled pain, which can contribute to opioid use disorder in patients or family members.<sup>37</sup> However, only half of patients who visit an emergency department with dental pain are ultimately seen by a dental clinician within six months.<sup>38</sup>

Unmet dental needs are also a common concern for patients visiting their primary care clinician, many of whom do not have access to dental care.<sup>39, 40</sup> Lack of training in diagnosis and management of common oral conditions as well as heightened barriers to referral to a dental clinician result in feelings of disempowerment among healthcare clinicians and a frustrating and fragmented patient experience.

Historical differences in how oral health care is delivered and paid for have led to even larger inequities in oral health access and outcomes as compared to the rest of the healthcare system. The uninsurance rate for dental insurance is four times higher than that for medical insurance.<sup>41</sup> Dental insurance is most commonly structured as a discount plan, with low coverage rates (and high out-of-pocket costs) for many procedures. Because of the costs imposed on individuals even when they have dental insurance, patients report higher levels of financial barriers to receiving needed dental treatment than any other form of medical care.<sup>42</sup> This has resulted in “the paradox of dental need,” in which dental care is least affordable and accessible to those who need it most.<sup>43</sup> In 11 states, Medicaid provides no dental benefits for low-income adults; limits on coverage are present in 35 states, and 19 require a co-pay.<sup>44</sup> Traditional Medicare offers no dental coverage for 37 million older adults and people with disabilities.<sup>45</sup> Even when dental coverage is provided, as for low-income children who receive insurance through Medicaid or the Children’s Health Insurance Program (CHIP), access continues to be a struggle: Only 33% of low-income children have a dental visit every

year, compared to 55% of their more well-off peers.<sup>46</sup> Uninsured and publicly insured adults make up 70% of all emergency department visits for a dental problem.<sup>47</sup>

Oral health inequities most directly impact groups already at risk of worse health outcomes due to historical and structural discrimination. Communities of color have higher rates of tooth decay and tooth loss and lower rates of annual dental visits.<sup>48, 49, 50</sup> Dental utilization is even lower among people of color, who experience more frequent instances of discrimination.<sup>51</sup> American Indian and Alaska Native (AI/AN) children have the highest rates of tooth decay in the country, five times higher than other children.<sup>52</sup> Patients who speak a language other than English are less likely to visit a dental clinician, where access to interpretation services is not readily available as compared to other medical settings.<sup>53, 54</sup> Patients who are undocumented are also less likely to receive needed oral health care.<sup>55, 56</sup> Individuals who have experienced incarceration,<sup>57</sup> have substance use disorder,<sup>58</sup> or are experiencing homelessness<sup>59</sup> all have rates of unmet oral health needs substantially higher than socioeconomically matched peers. Children and adults with disabilities<sup>60</sup> as well as older adults living in institutional settings such as nursing homes all experience disproportionately elevated rates of dental disease and low rates of preventive care.<sup>61</sup> Living in a rural area further compounds these outcomes due to the presence of fewer oral health clinicians and longer travel times to needed care.<sup>62</sup>

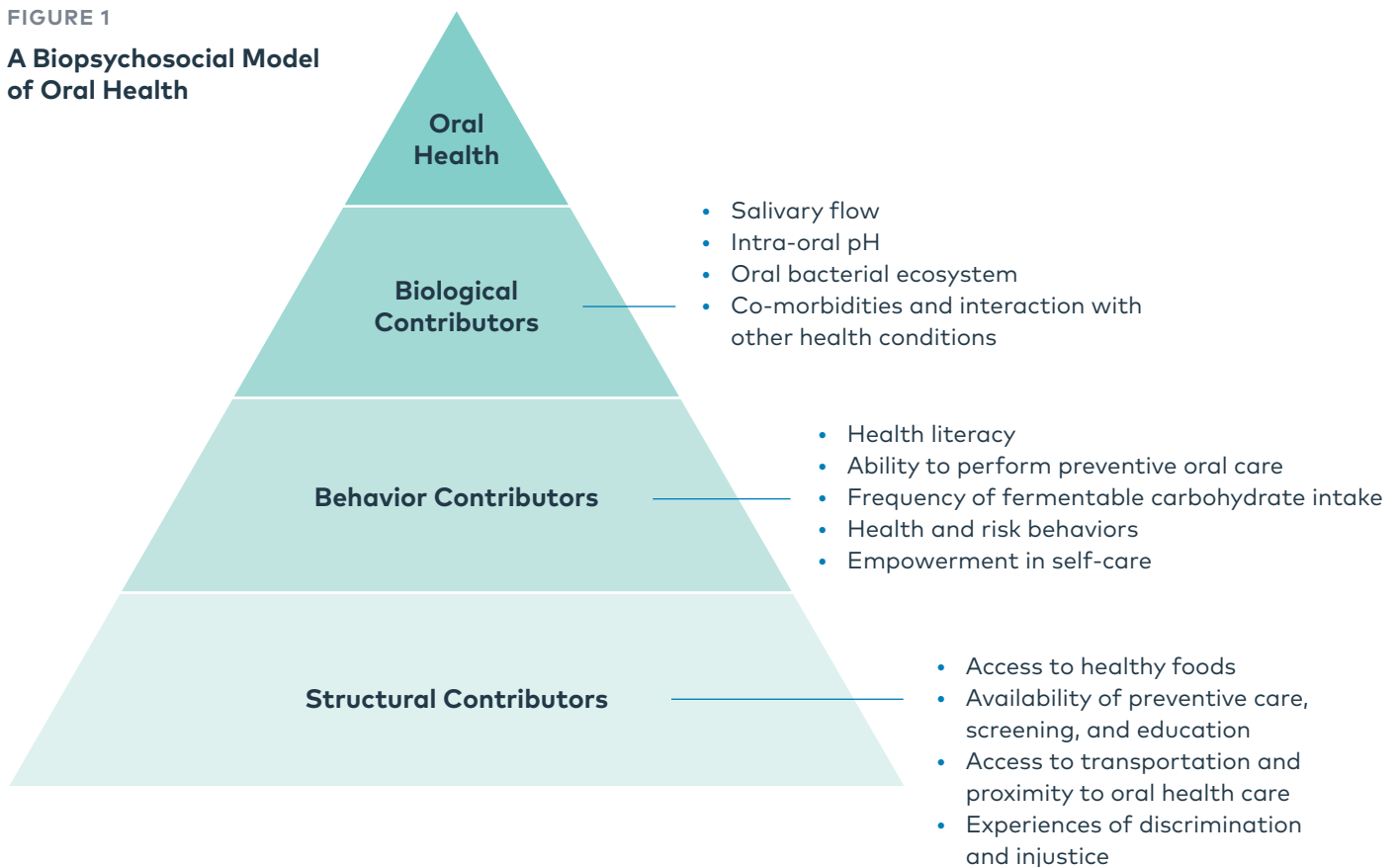
The etiology of these inequities is myriad and rooted in injustices that reach far beyond oral health. Yet it is clear that they are perpetuated by a system that has failed to account for individual patients’ health needs, challenges, and goals. Although the dental care system remains siloed, with the majority of dental practice continuing to occur separately from the medical system,

oral health needs interact intimately with the medical system because patients' needs are never separable. You can't take the mouth out of the body. Oral health *is* health.

To maximize the health, well-being, and dignity of our patients and communities, the historical status quo that has kept oral health care separate and often inaccessible must not continue.

We envision a comprehensive, patient-centered model that contextualizes oral health within the care of patients, families, and communities. The full integration of oral health with primary care will lead to better care, reduction in health inequities, and improved collaboration across different types of clinicians. Across the country, such models are already evolving and allowing patients to thrive.

**FIGURE 1**  
**A Biopsychosocial Model of Oral Health**



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## INTRODUCTION

# Integrating Oral Health in Primary Care

## Seminal Reports Inspire Progress on Integrated Care

In 2000, *Oral Health in America: A Report of the Surgeon General* envisioned a national partnership to reduce disparities, one that would enable individuals, health professions, and their communities to work together to bridge the historical gap between medical and dental care.<sup>1,2</sup> However, health care in the United States remains siloed, and unmet dental needs remain a common concern for patients visiting their primary care clinician, many of whom do not have access to dental care. It is estimated that each year, 111 million people see a physician who do not see a dentist. Conversely, an estimated 27 million people each year have a dental visit but no medical visit.<sup>3</sup> These visits and the absence of an integrated system of care constitute missed opportunities.

In response to the Surgeon General's report and subsequent *Call to Action*, the field of oral health expanded in scope, informed by a series of policy documents that are helping to drive change across the U.S. healthcare system. In 2011, two reports brought renewed attention to the Surgeon General's vision. The Institute of Medicine's (IOM) *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*<sup>4</sup> specifically called for nondental

health professions to play a role in oral health care, noting the need for increased access to oral health care that could be fostered by the development of oral health core competencies for primary care clinicians. The Interprofessional Education Collaborative's (IPEC) *Core Competencies for Collaborative Practice*<sup>5</sup> helped frame an emerging national dialogue on the need for interprofessional education and practice and served as a catalyst for team-based care.

In 2014, the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA) responded to the IOM call to action and engaged a diverse cross section of subject-matter experts and professionals in a series of three convenings. Various healthcare sectors were represented, including primary care, community health, education, and payors. The resulting report, *Integration of Oral Health and Primary Care Practice (IOHPCP)*<sup>6</sup>, sought to improve access to oral health preventive services and advance early detection of oral disease. Part 1 of the report was designed to advance oral health competencies of primary care clinicians in risk assessment, oral health evaluation, preventive interventions, communication and education, and interprofessional collaborative practice. Consensus report recommendations also suggest infrastructure, measurement, payment and program strategies. Taken together, the IPEC

### IOHPCP Oral Health Core Clinical Competencies

- **Risk Assessment** – the identification of factors that impact oral health and overall health.
- **Oral Health Evaluation** – integrating subjective and objective findings based on completion of a focused oral health history, risk assessment, and performance of a clinical oral screening.
- **Preventive Intervention** – recognition of options and strategies to address oral health needs identified by risk assessment and evaluation.
- **Communication and Education** – targets individuals and groups regarding the relationship between oral and systemic health, risk factors for oral health disorders, effect of nutrition on oral health, and preventive measures appropriate to mitigate risk on both individual and population levels.
- **Interprofessional Collaborative Practice** – Shares responsibility and collaboration among healthcare professionals in the care of patients and populations with, or at risk of, oral disorders to assure optimal health outcomes.

### IOHPCP Recommendations

1. Apply oral health core clinical competencies within primary care practices to increase oral health care access for safety-net populations in the United States.
2. Develop infrastructure that is interoperable, accessible across clinical settings, and enhances adoption of the oral health core clinical competencies. The defined, essential elements of the oral health core clinical competencies should be used to inform decision-making and measure health outcomes.
3. Modify payment policies to efficiently address costs of implementing oral health competencies and provide incentives to healthcare systems and practitioners.
4. Execute programs to develop and evaluate implementation strategies of the oral health core clinical competencies into primary care practice.

and IOHPCP documents help the field define the “what,” or spectrum of services professionals can provide across sectors, and the “how” of working together in team-based oral health care. The *HHS Oral Health Strategic Framework 2014-2017* served as a resource to advance strategic alignment of HHS oral health activities as well as a roadmap to key interventions: oral disease prevention; increasing access to care; developing and disseminating oral health information; translating policy and research into practice; strengthening the workforce; and eliminating oral health disparities.<sup>7</sup>

### Education and Training for Integrated Oral Health Care

Increasing attention has focused on oral disease as a widespread, persistent problem, inextricably connected to overall health. It is clear that the 200,400 dentists and oral health professionals in the U.S. workforce cannot address this problem alone. The non-dental primary care workforce consists of over 228,000 primary care physicians, 94,000 nurse practitioners, and 42,000 physician assistants<sup>8</sup> who each can play a role in improving the oral health of the public. For decades, however, clinicians and the public have accepted the status quo that designated dental clinicians care for the mouth and primary care medical professionals care for the rest of the body. Outside designated dental professions, health profession education has largely overlooked the importance of including oral health as part of routine physical exams. This fragmentation of care has also impacted the flow of information between clinicians about patient health. In spite of recent literature documenting the relationship between periodontal disease and other medical conditions,<sup>9,10</sup> with the exception of some exemplars cited later in this compendium, there remains little to no communication between the dental and medical care silos.

In order to prepare current and future care teams to integrate oral health into primary care, new partnerships, tools, and resources were needed to create a shared understanding of the value of integrated oral health care and to increase the oral health knowledge and skills of primary care clinicians. In 2009, to address these systemic issues, the National Interprofessional Initiative on Oral Health (NIIOH) evolved as a consortium of funders, health professionals, and national organizations with a shared goal of eradicating dental disease. Designed as a systems-change initiative, NIIOH provides backbone support and facilitates interprofessional agreement and alignment to prepare an expanding oral health workforce for evolving care models focused on team-based, collaborative, whole-person care. NIIOH continues to work with health profession leaders, communities, state collaboratives, and national organizations to create policies, care models, payment systems, and the tools<sup>11, 12</sup> needed to support an integrated delivery system.

Interprofessional practice and the integration of oral health with primary care aligns with the patient-centered medical home (PCMH) and the federally qualified health center (FQHC) delivery model. It is noteworthy that key terms used to describe these models—collaboration and integration—often are used inconsistently and interchangeably to describe the various approaches and practice models that are cited in this compendium. All, however, reflect the growing recognition that a team-based strategy is essential to meet the backlog of patient demand for oral health and medical services that have been made less accessible by the COVID-19 pandemic. Leveraging an interprofessional population-based approach will enable our health system to target upstream preventive services and thereby promote avoidance of downstream cost and the burden on patients of dental care emergencies and chronic disease.<sup>13</sup>

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# Methodology for This Compendium

All cases selected for inclusion in this compendium were identified through a review of the peer-reviewed and gray literature as well as by recommendation from content experts. Initial searches in both PubMed and Google were undertaken using the search terms “oral health,” “primary care,” and “cases.” Subsequent searches were refined on the basis of examples and prior publications cited in the identified literature. Additional landmark case collections and citations were added to the list by grant leadership on the basis of content expertise. A preliminary list of cases was presented to the Advisory Group, which then provided additional suggestions and citations to include. Multiple searches within PubMed and Google were conducted using the identified institutions and programs to identify all published examples of these additional examples.

This compendium highlights the extraordinary diversity and ingenuity of health systems and individuals integrating oral health into primary care. However, this compendium is not intended to be fully comprehensive, and the cases described within each principle do not represent the only initiatives intended to bridge the divide between oral health and primary care. Through the exemplars chosen, the report emphasizes the importance of oral health in providing optimal and equitable primary care by upholding the seven Shared Principles of Primary Care.

The Shared Principles of Primary Care represent the work of a 30-organization steering committee spearheaded by the Primary Care Collaborative with review by more than 100 organizations to develop consensus on key values for delivering the

best primary care to all individuals. Stakeholders included clinicians, payers, employers, hospitals, healthcare systems, patient groups, family care advocates, and other healthcare groups and consumer organizations to ensure inclusivity. Today more than 350 organizations have adopted the principles. Explored in more depth through the compendium, the Shared Principles are:



**Person- and Family-Centered**



**Coordinated and Integrated**



**Continuous**



**Accessible**



**Comprehensive and Equitable**



**High-Value**



**Team-Based and Collaborative**

Each chapter of this compendium was assembled by a member of the grant leadership team and subsequently reviewed by all team members. Second drafts were reviewed individually by at least three members of the Advisory Group, followed by a final draft review open to all members of the leadership team and Advisory Group.

## For more information on the seven Shared Principles of Primary Care, see:

Epperly T, Bechtel C, Sweeney R, et al. The Shared Principles of Primary Care: A multistakeholder initiative to find a common voice. *Family Medicine*. 2019;51(2):179-184. doi:10.22454/FamMed.2019.925587

## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



### PRINCIPLE 1

# Person- and Family-Centered

- Primary care is focused on the whole person—their physical, emotional, psychological, and spiritual well-being, as well as cultural, linguistic, and social needs.
- Primary care is grounded in mutually beneficial trusting partnerships among clinicians, staff, individuals, and their families, as equal members of the care team. Care delivery is customized based on individual and family strengths, preferences, values, goals, and experiences using strategies such as care planning and shared decision-making.
- Individuals are supported in determining how their family or other care partners may be involved in decision-making and care.
- There are opportunities for individuals and their families to shape the design, operation, and evaluation of care delivery.

### Innovations Cited in this Section:

**Yakima Valley Farm Workers Clinic:**  
[www.yvfwc.com](http://www.yvfwc.com)

**The Center for Pediatric Dentistry, Seattle:**  
[thecenterforpediatricdentistry.com](http://thecenterforpediatricdentistry.com)

**Neighborcare Health Center:**  
[neighborcare.org](http://neighborcare.org)

**Codman Academy Preventive Dental Project:**  
[partnershipatcodman.org/  
preventive-dental-project](http://partnershipatcodman.org/preventive-dental-project)

**Early Childhood Caries Collaborative:**  
[www.dentaquestpartnership.org/  
learn/quality-improvement-initiatives/  
early-childhood-caries-ecc-management-efforts](http://www.dentaquestpartnership.org/learn/quality-improvement-initiatives/early-childhood-caries-ecc-management-efforts)

**Medical Oral Expanded Care (MORE Care):** [www.dentaquestpartnership.org/  
learn/morecare/interprofessional-practice](http://www.dentaquestpartnership.org/learn/morecare/interprofessional-practice)

Oral health needs are best met when they are contextualized within patients' and families' lived experiences and needs as individuals and community members. The conventional dental setting may ignore lived experiences that inform individual social, physical, and emotional needs. In the primary care setting, oral health can be more fully embedded within approaches that incorporate comprehensive needs assessments and respect for the individual. Conversely, primary care cannot be truly patient-centered without the inclusion of oral health.

Patient- and family-centered oral health initiatives can take many forms, ranging from twinned approaches that combine health and social service delivery, individualized risk assessment and monitoring, and shared decision-making tools. Above all, such initiatives successfully provide individualized care that reflects the distinctive needs, values, and preferences of patients as people.

### Person-Centeredness through Comprehensive Needs Assessment

Patient-centered interventions may include targeted assessment and referral programs that address multiple aspects of the patient experience simultaneously, including addressing both oral health and social determinants of health. For example, the New Mexico state oral health program provides oral health screenings to mothers attending Women, Infants, and Children (WIC) clinics for healthcare and nutritional support.<sup>1</sup> In Washington State, the Yakima Valley Farm Workers Clinic identifies both children and parents with unmet oral health needs who receive care at the clinic's WIC facilities and is able to book same-day dental visits for any family member.<sup>1</sup> The Center for Pediatric Dentistry in Seattle developed a food-insecurity screening tool for all families attending dental visits, allowing the clinic to refer food-insecure families to local food banks and other resources.<sup>2</sup>

Adjusting communication to patient and family levels of health literacy is also crucial to ensuring patient-centered care. In California, a targeted oral health literacy intervention for caregivers of children enrolled in Head Start increased caregiver-reported oral health knowledge and increased rates of preventive dental utilization.<sup>3</sup> For example, the more than 2,000 parents participating in the program who brushed their children's teeth twice a day increased from 12% to 85%.

Schools provide another setting in which patient- and family-centered care meaningfully unites oral health, medical, and social needs. Reflecting the way in which school-based clinics provide comprehensive care for children,<sup>4</sup> the National Committee for Quality Assurance developed a school-based medical home recognition program; in 2019, the program was retired and fully integrated into the patient-centered medical home recognition program.<sup>5</sup> Children with high burdens of dental disease are less able to focus in school and are more likely to miss school due to pain.<sup>6</sup> Delivering health care within the school setting expands the reach of services within the community and allows caregivers to address health behaviors, unmet social needs, and well-being on the individual, family, and community level.<sup>7</sup> School-based programs can provide highly effective preventive care to children, such as dental sealants, a preventive intervention that is applied to permanent molars to prevent the development of caries. One study evaluating school-based sealant programs in 14 states found that 1,000 sealants administered in the school setting would prevent 485 cavities.<sup>8</sup> Embedding oral health services within schools ensures they are accessible to as many children as possible; the rate of sealant delivery in Mississippi and Alabama doubled after school-based programs were implemented.<sup>9</sup> These efforts are supported by evidence from the Community Preventive Services Task Force, which endorses school-based sealant programs as a safe and highly effective measure to improve child health.

School-based integration also allows students to learn more about health professions, emphasizes ongoing behavior change, and creates a “culture of health” within the school. In many Head Start programs serving preschool-aged children from low-income families, classroom-wide toothbrushing has become standard after meals and snacks.<sup>10</sup> In Seattle, Neighborcare Health Center’s dental clinicians attend Head Start provider meetings to develop oral health curricula in tandem with educators.<sup>11</sup> At Codman Academy, a charter school co-located with a community health center in Dorchester, Massachusetts, students receive age-appropriate oral health curricula from kindergarten through 12<sup>th</sup> grade, coupled with evaluation in the health center’s dental clinic for each child during the school year.<sup>12</sup> This allows for the delivery of an increasingly sophisticated oral health curriculum while allowing longitudinal tracking of evolving oral health needs.

Medical and oral health clinicians have united to encourage tobacco cessation for patients, as tobacco use is a health behavior with implications for medical and oral health needs. Tobacco cessation requires an individualized approach that is centered on patient behaviors and motivation. A randomized, controlled trial provided individually tailored tobacco-cessation counseling and nicotine-substitution therapies to patients at community health center dental clinics in Mississippi, New York, and Oregon and found higher tobacco abstinence compared to patients who may have received only counseling from their primary care clinician.<sup>13</sup> Reflecting the opportunity posed by chairside counseling, several states have provided Medicaid funding for smoking-cessation activities provided by dental clinicians.<sup>14</sup>

### Personalized Screening and Shared Decision-Making

Effective screening tools allow for the delivery of appropriate oral health surveillance and triage, ensuring care is personalized to the needs of the individual. The Caries Management by Risk

Assessment (CAMBRA) tool, originally developed at the University of California-San Francisco, provides tailored guidance on children’s preventive oral health needs on the basis of oral exam findings and behavioral risk factors, including parental oral health status, snacking, and bottle use.<sup>15</sup> While CAMBRA is intended for oral health clinicians, other screening tools include the American Dental Association’s Caries Risk Assessment form for children ages 0 to 6 and children over age 6 and the American Academy of Pediatrics’ Oral Health Risk Assessment Tool; these tools do not incorporate clinical or radiographic findings, making them well-suited to the primary care setting.<sup>16,17</sup> At Boston Children’s Hospital, children with early childhood caries are enrolled in a chronic disease-management program, modeled on chronic diseases managed by primary care, such as diabetes and hypertension. The model includes personalized risk assessment, family-directed goal setting, and intervals between visits determined by risk stratification. The Early Childhood Caries Collaborative expanded these practices to 32 sites nationwide; after implementation of the model, rates of new caries experienced a three-fold decrease.<sup>18</sup>

The personalized results of these screening tools can guide treatment and collaboration between medical and dental teams (for example, by prompting a more rapid referral from the primary care to dental clinician or increasing the frequency of fluoride varnish application), but also importantly serve as entry points for motivational interviewing with families about oral health-related behavior change, a critical intervention to addressing the role at-home care plays in preventing caries. This family-centered coaching can be continued in both the primary care and dental settings, with goals set by patients and families themselves.

Shared decision-making has gained increasing traction as an effective method to ensuring that an individual’s values and preferences are incorporated into all aspects of care. Shared



decision-making explicitly models the dynamic relationship between clinician and patient to determine treatment courses that are in-line with patient wishes.<sup>19</sup> The model can be especially effective in decision-making that involves ambiguity and in chronic disease management, when patient behaviors are key drivers of outcomes.<sup>20</sup> As diseases like dental caries and periodontitis are chronic diseases and other dental treatments are also highly dependent on patient preferences (e.g., dentures versus implants to restore lost dentition), shared decision-making is well-suited to oral health management across both primary care and dentistry.<sup>21</sup> Perhaps unsurprisingly, dental patients have expressed a desire for a more collaborative role in their own care decisions.<sup>22</sup> The Colorado Community Health Network used the adoption of shared decision-making in both medical and dental clinics as a strategic element of patient engagement for broader medical-dental integration efforts.<sup>23</sup> Within the Medical Oral Expanded Care (MORE Care) model, an initiative of the DentaQuest Institute in partnership with several state Offices of Rural Health, both medical and dental clinicians

participating in MORE Care's pediatric pathway engage in shared decision-making with families to emphasize dental disease risk stratification and self-management goals.<sup>24</sup> In the absence of definitive clinical guidelines, the American Academy of Orthopedic Surgery and American Dental Association developed a shared decision-making tool for patients with a history of joint replacement to help guide the benefits and risks of antibiotic prophylaxis for dental procedures.<sup>25</sup>

Although oral health-related shared decision-making is still early in its adoption, its increasing use in both medical and oral healthcare discussions facilitates patient and family empowerment in health decisions and sends a strong signal to patients and families that individual preferences and circumstances are paramount. Used in conjunction with integrated services at community and clinical access points, these initiatives and resources allow clinicians to partner with patients for empowerment in health. In a transformed system that integrates oral and primary care, patients and families are central care team members.

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## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



## PRINCIPLE 2

# Continuous

- Dynamic, trusted, respectful, and enduring relationships, families, and their clinical team members are hallmarks of primary care. There is continuity in relationships and in knowledge of the individual and their family/care partners that provides perspective and context throughout all stages of life including end-of-life care.

**Innovations Cited in this Section:**

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**Grace Health:** [www.gracehealthmi.org/1st-patient-complete-oral-health-program](http://www.gracehealthmi.org/1st-patient-complete-oral-health-program)

**UCLA-First 5 LA 21st Century Dental Homes Project:** [www.dentistry.ucla.edu/service/first-5-la](http://www.dentistry.ucla.edu/service/first-5-la)

**NYU College of Dentistry Oral Health Center for People with Disabilities:**  
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**Special Olympics Special Smiles Program:**  
[www.specialolympics.org/tag/special-smiles](http://www.specialolympics.org/tag/special-smiles)

**Project FLOSS:** [uofuhealth.utah.edu/utahaddictioncenter/projects/floss.php](http://uofuhealth.utah.edu/utahaddictioncenter/projects/floss.php)

**Apple Tree Dental:** [www.appletreedental.org](http://www.appletreedental.org)

**P** rimary care best reaches patients across the age spectrum by developing longitudinal, enduring relationships. As the importance of oral health is increasingly understood, especially for the very young and for older adults, the evolving oral health needs of patients and families over time must also be a priority for effective, continuous primary care. Such longitudinal relationships in oral health are challenged by discontinuity in dental coverage, such as variation in Medicaid coverage between children and adults as well as lack of widespread dental coverage within Medicare. Integration of oral health and primary care helps support these longitudinal relationships and overcome this disjunction. Such care can be especially meaningful for patients with complex and ongoing health needs, such as patients with chronic illness, people with disabilities, and people living in institutional settings.

### Perinatal Oral Health

Many initiatives highlighted throughout this compendium have focused on the oral health of young children. However, oral health outcomes can be impacted by events that occur before birth. Maternal oral health can impact risk of low birthweight and pre-term birth as well as the rate of dental disease in offspring.<sup>1</sup> Pregnancy represents an opportunity to provide services for women that can longitudinally affect the health of both parent and baby. For this reason, several innovative initiatives have focused on improving perinatal oral health and in establishing and maintaining relationships with growing families. At NYU Lutheran Family Health Services, the dental clinic hosts a baby shower to encourage pregnant patients to receive dental care.<sup>2</sup> In Michigan, Grace Health has operated a Maternal Oral Health Initiative since 2014, embedding two dental hygienists in full operatories within the obstetrics and gynecology clinic who evaluate patients in every trimester of pregnancy to provide anticipatory guidance and refer patients for needed dental care.<sup>3</sup>

The National Maternal and Child Oral Health Resource Center at Georgetown University (OHRC) provides technical assistance for pilot grantees across the country with an emphasis on developing learning collaboratives including health systems, primary care networks, and social services for women and children.<sup>4</sup> OHRC also produced consensus guidelines that provide clinical recommendations for oral health care during pregnancy<sup>5</sup> and periodically provides an overview of selected national and state activities that represent innovations in the field.<sup>6</sup> As an example of the diverse initiatives supported by the center, initial projects from the Perinatal and Infant Oral Health Quality Improvement (PIOHQI) Initiative, funded by HRSA, included the development of caregiver oral health training in early intervention sites in Massachusetts as well as the launch of an oral health awareness campaign for pregnant women and parents on the Hopi Reservation in Arizona.<sup>4</sup> The latter initiative, Project Zero - Women & Infants, resulted in a Tribal mandate that all children entering the foster care system receive a dental visit.<sup>7</sup>

By providing oral health services for pregnant women and anticipatory guidance to encourage early preventive dental care for infants, integrated projects can develop substantial oral health improvements over time. In Oregon, the Klamath County Early Childhood Caries Prevention Program provides dental hygienist-led screenings and necessary dental care to low-income women during pregnancy; after two years, the county's two-year-olds had caries rates 30% lower than neighboring counties. This improvement was thought to be due to the longitudinal improvement in maternal oral health and access to care that resulted in improved child oral health as well.<sup>8</sup> The UCLA-First 5 LA 21st Century Dental Homes Project facilitated pediatric medical and dental clinician trainings within FQHCs to increase oral health screening and referral for children aged 0 to 5; over 2 years, the rates of preventive dental services provided to young children tripled.<sup>9</sup>

## Oral Health for People with Disabilities

Children and adults with disabilities have high rates of unmet oral health needs and often struggle to find dental care.<sup>10</sup> Building trusting relationships across primary care and oral health can be especially important in identifying oral disease and allowing patients to feel safe in the unfamiliar dental environment. NYU College of Dentistry opened the Oral Health Center for People with Disabilities in 2019, and the clinic features a multisensory room to support individuals with autism or other neurocognitive differences as well as an embedded nurse practitioner, social worker, and anesthesiologist to address a spectrum of patient needs.<sup>11</sup> The Special Olympics Special Smiles Program provides oral health screening and education to athletes and is fully embedded within the Health Athletes Program, which allows athletes and their families to receive screening and support for medical, dental, behavioral, and vision needs.<sup>12</sup> The International Association for Disability and Oral Health offers several curricula on its website to support dental trainees in developing competency in caring for patients with disabilities.<sup>13</sup> The curriculum emphasizes team-based collaboration with other health clinicians.

As young people with special healthcare needs transition from adolescence to adulthood, care transitions to non-pediatric clinicians must also take place. Such transitions can be daunting for patients and families and especially benefit from coordination and “warm hand-offs” between clinicians.<sup>14</sup> In Missouri, the Elks Mobile Dental Program provides care in community settings including schools and Elks Lodges to both children and adults with disabilities across the age spectrum.<sup>15</sup> In one national survey, most pediatric dentists caring for patients with special healthcare needs reported they actively participated in a mutual transitional process to assist patients and families in trusting an adult-oriented clinician.<sup>14</sup>

The trust established by long-term relationship-building between clinicians and patients can also be leveraged to provide support for patients navigating sensitive or difficult diagnoses in both the primary care and dental setting. One example of this is ensuring patients with substance-use disorders receive treatment for dental problems, which can impact recovery by worsening pain and because of the shame patients may associate with their oral health. In Utah, Project FLOSS provides dental care for patients undergoing inpatient substance use disorder treatment, which is normally not covered by Utah’s Medicaid program.<sup>16</sup> The relationship established between dental clinician and patient helps improve patients’ self-esteem and employability in addition to reducing pain; patients who participate in the program are also more likely to successfully complete substance-use treatment.<sup>17</sup>

Another group well-served by structural and financial integration of medical and dental care are people living with HIV and AIDS. The Ryan White Program provides oral health funding for this population through a variety of mechanisms and supports both insured and uninsured people living with HIV and AIDS.<sup>18</sup> A special funding stream provides reimbursement to dental education settings to incentivize the training of future dental clinicians with competence in caring for patients living with HIV and AIDS. In 2013, the Dental Reimbursement Program reimbursed dental care for 41,464 clients.<sup>19</sup>

## Oral Health Care for Older Adults

Older adults are another group that requires specifically tailored and longitudinal oral health care. Integration with primary care efforts are especially beneficial for older adults because traditional Medicare does not provide dental insurance coverage.<sup>20</sup> As individuals age, their oral health needs evolve, and services suited to community-dwelling older adults may vary considerably from those for older adults with

dementia, physical disabilities, or living in nursing homes. As fewer older adults lose all their teeth, the need for oral health services in this group grows and becomes increasingly important as patients seek to preserve teeth until the end of life.<sup>21</sup> Low-income older adults with unmet oral health needs may also struggle to obtain adequate primary care. The ElderSmile program at Columbia University College of Dental Medicine provides oral health screening and transportation to dental care from 27 gathering sites for older adults in New York City. Since 2010, it has

integrated blood pressure and diabetes screenings into its workflow, resulting in the referral of substantial numbers of patients to medical care for previously undiagnosed chronic conditions.<sup>2</sup> At the Gary and Mary West Senior Dental Center in San Diego, California, the dental clinic is embedded within a senior center that provides care-management and social services support, and each patient has their blood pressure and hemoglobin A1c checked at every visit, with referral to physicians for elevated values.<sup>2</sup>

### Exemplar: Apple Tree Dental

Since its founding in 1985, Apple Tree Dental, a network of eight dental clinics in Minnesota, has had an emphasis on caring for older adults and people with disabilities. The organization now serves all individuals with special access barriers to dental care, including financial barriers. Apple Tree Dental utilizes a “hub-and-spoke” model, in which clinicians and mobile dental equipment from their clinics extend into the community to provide care.<sup>22</sup> Apple Tree Dental clinicians are able to reach patients through partnership with other community organizations that serve specific populations, such as Head Start programs and nursing homes, a community partner network that now includes 145 organizations.<sup>22</sup> Across all settings, the clinic’s electronic health record is used to document physical limitations that may impact care (such as inability to transfer to a conventional dental chair) and patient ability to conduct daily oral hygiene due to physical or cognitive limitations. Clinicians are encouraged to document and book patients for longer dental visits if they believe doing so would be beneficial for the patient’s individual needs.

Variation in care needs and delivery systems between community-dwelling older adults and those who live in a nursing home demonstrates the spectrum of services that Apple Tree provides, tailored to the developmental needs of the individual. Within

their clinical sites, Apple Tree provides traditional outpatient dental services provided by dental hygienists, dental therapists, and dentists. In 90 nursing homes statewide, collaborative practice dental hygienists can provide in-room screening and hygiene services, while larger mobile dental units are assembled to provide care at the nursing home. In addition to facilitating access to dental care for nursing home patients, this model also allows clinicians to train nursing home staff and interact with the nursing home’s medical director and other clinicians for enhanced care integration. In both groups, rates of oral disease and the annual cost of treatment decreased with each year of sustained treatment.<sup>23</sup> Perhaps most compellingly, 10 of the 503 older adults who were seen in the outpatient setting between 2012 and 2013 were seen in subsequent years as nursing home patients, representing an unprecedented level of continuity of care.

Apple Tree Dental’s unique organizational structure and relationship with other organizations has also allowed for innovative integrated care models. For example, a tobacco-cessation program was developed utilizing the clinic’s electronic health record system. Tobacco users with a stated interest in quitting were repeatedly counseled over time during their contact with dental clinicians and were also given a referral printout to bring to their primary care clinician.<sup>24</sup>

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## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



### PRINCIPLE 3

# Comprehensive and Equitable

- Primary care addresses the whole person with appropriate clinical and supportive services that include acute, chronic and preventive care, behavioral and mental health, oral health, health promotion, and more. Each primary care practice will decide how to provide these services in their clinics and/or in collaboration with other clinicians outside the clinic.
- Primary care clinicians seek out the impact of social determinants of health and societal inequities. Care delivery is tailored accordingly.
- Primary care practices partner with health and community-based organizations to promote population health and health equity, including making inequities visible and identifying avenues for solutions.

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**Healthy Smiles for All:** [www.samhealth.org/about-samaritan/community-benefit-initiatives/community-health-initiatives/healthy-smiles-for-all](http://www.samhealth.org/about-samaritan/community-benefit-initiatives/community-health-initiatives/healthy-smiles-for-all)

**Apple Tree Dental:** [www.appletreedental.org](http://www.appletreedental.org)

**Swinomish Dental Program:**  
[www.swinomish-nsn.gov/resources/health-wellness/dental.aspx](http://www.swinomish-nsn.gov/resources/health-wellness/dental.aspx)

**Terry Reilly Health Services Latah Clinic:**  
[www.trhs.org/clinic-locations/boise-latah-street-medical-dental-behavioral-health](http://www.trhs.org/clinic-locations/boise-latah-street-medical-dental-behavioral-health)

**Marshfield Clinic:** [www.marshfieldclinic.org](http://www.marshfieldclinic.org)

**Into the Mouths of Babes:** [publichealth.nc.gov/oralhealth/partners/IMB.htm](http://publichealth.nc.gov/oralhealth/partners/IMB.htm)



Although sometimes used interchangeably, health equity and equality are not the same. Some individuals, families, and communities will require additional resources and support to achieve the optimal health that is the goal of all health systems. With a personalized emphasis on the distinct needs of individual patients within the context of their lived experience, needs, and structural environment, oral health integration efforts can help bring about equity. Oral health problems disproportionately affect at-risk groups, who often face the steepest challenges to equitable access to oral health and to primary care. Integration of oral health and primary care must be centered on the elimination of health inequities and the acknowledgement of structural racism and discrimination that impacts health and oral health. Within the context of comprehensive, whole-person care, integrated models of oral health care can improve access and the quality of care for all patients and communities.

To ensure equity, such models also benefit from incorporation of the social determinants of health and care delivery outside traditional settings. In Oregon, the Healthy Smiles for All Program provides emergency dental services using a mobile dental unit that visits food pantries, homeless shelters, and other settings that bridge both health and social needs.<sup>1</sup> The program has provided care to 192 people, many of whom previously visited emergency departments or urgent care centers due to untreated dental pain. In Virginia, community health nurses and pediatric nurse practitioners in the Begin with a Grin program conduct home visits to the families of young children enrolled in Medicaid.<sup>2</sup> Central to the program is fluoride varnish, oral health assessment, and anticipatory guidance, which are provided within the home. In addition to reducing access barriers to preventive oral health services, the at-home visits allow for education of the child's parent or guardian, an assessment of family health literacy, a social

needs evaluation, and a better sense of the opportunities and challenges the child faces in the home environment. On the converse side of the age spectrum, Apple Tree Dental has provided on-site care to institutionalized frail elderly adults in Minnesota since 1985. By using mobile dental equipment, dental clinicians are able to provide longitudinal comprehensive dental care to patients with substantial barriers to reaching more conventional dental settings.<sup>3</sup> The program also allows for collaboration and training of nursing home staff and clinicians.

Successful integration initiatives may also focus on addressing the distinctive needs of at-risk populations that have been most affected by historical injustice. Across the country, Alaska Native and American Indian communities and sovereign tribal nations have led policy efforts to allow dental therapists to practice as part of the dental team.<sup>4</sup> Tribal advocacy has led to legislative change in several states enabling dental therapists to practice on tribal land or statewide.<sup>5</sup> In tribal communities where they practice, dental therapists provide culturally informed care as part of healthcare teams that include oral health and primary care clinicians, providing care that is more accessible and affordable.<sup>6</sup>

Federally qualified health centers (FQHCs) have a long history of community engagement and advocacy. FQHCs provide care regardless of patients' ability to pay and must have a governing body composed of at least 50% community members, allowing them to be responsive to community-driven priorities, including oral health. They have also led models of innovation to improve health equity and oral health and primary care collaboration. These efforts are often targeted to meet the health and cultural needs of the communities served, such as screening of dental patients for diabetes in regions with high rates of undiagnosed chronic health conditions and the development of linguistically diverse patient education materials.<sup>7</sup>

In recognition of the fact that 50% of all ambulatory visits are to primary care clinicians, many of the initiatives throughout this compendium have integrated oral health care to provide a more comprehensive care model in settings where patients already access primary care and other needed services. Such efforts extend co-location enabling clinician collaboration such as booking appointments across specialties, interdisciplinary team meetings, access across specialties to linguistically appropriate interpreter services, and warm hand-offs across behavioral, dental, and medical clinicians. For example, the Terry Reilly Health Services Latah Clinic in Idaho holds regular Clinical Care Team meetings to standardize knowledge and processes for all clinicians.<sup>8</sup>

Health information technology can be an important tool to ensure that comprehensive care is also equitable and personalized to individual needs and risk factors. Effective use of such technology can inform needs assessment and outcomes, helping assess whether personalized care is truly equitable. The Marshfield Clinic in Wisconsin conducted extensive surveys of medical and dental clinicians to understand data-sharing needs before developing a fully integrated electronic medical and dental record (iEHR) to support its integrated practice models.<sup>9,10</sup> The record allows all clinicians to view and manage a patient's medication list and visits and prompt oral health evaluations in the primary care setting. Patients are notified of all upcoming visits in a centralized manner, and embedded clinical decision support tools enable clinician triage of unmet oral health needs.<sup>11</sup> Personalized risk algorithms for diabetes risk have been developed based on both dental and medical data within the health record, with which patients can be screened and referred during both medical and dental visits.<sup>12</sup> The clinic also maintains the Center for Oral and Systemic Health to conduct research to guide the health system's efforts.<sup>13</sup> For more on Marshfield Clinic's use of technology to facilitate primary care and oral health integration, see the Principle 5 - Coordinated and Integrated section.

Even larger population health impacts may occur from comprehensive care initiatives that extend beyond the health system level. In North Carolina, the Into the Mouths of Babes Program (IMBP) has developed training programs and reimbursement models to provide oral evaluation, caregiver education, and topical fluoride varnish application during pediatric visits for Medicaid-insured children. Since its inception in 2000, the overall burden of pediatric dental disease in the state has declined, as have disparities in untreated caries between low-income and high-income children.<sup>14</sup> Children who make at least four IMBP visits before age three experience an almost 20% reduction in caries and in hospital-based dental treatment.<sup>15,16</sup>

The IMBP reflects several key components of comprehensive and equitable primary care. The entire primary care team is engaged in the initiative. Primary care clinicians including physicians, physician assistants, and nurse practitioners, as well as nursing staff in public health clinics may all be reimbursed for conducting oral evaluation and caries risk assessments, and other primary care team members may take leadership of caregiver counseling and fluoride varnish application. The caries risk assessment includes measures of the social determinants of health, such as access to fluoridated water. In addition to emphasizing a team-based approach to oral health in the primary care screening, the program also helps develop more robust referral mechanisms to dental clinicians, effectively expanding the primary care team.

To encourage adoption of the program, the state developed a credit-granting continuing medical-education curriculum as well as an online training toolkit.<sup>17</sup> Billing codes and reimbursement specific to program goals further encourage adoption of the model, which has now been widely adopted by both public and private insurers nationwide in line with 2014 United States Preventive Services Task Force guidelines.<sup>18</sup>

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SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



PRINCIPLE 4

# Team-Based and Collaborative

- Interdisciplinary teams, including individuals and families, work collaboratively and dynamically toward a common goal. The services they provide and the coordinated manner in which they work together are synergistic to better health.
- Healthcare professional members of the team are trained to work together at the top of their skill set, according to clearly defined roles and responsibilities. They are also trained in leadership skills as well as how to partner with individuals and families, based on their priorities and needs.

**Innovations Cited in this Section:**

**The Colorado Medical-Dental Integration Project:** [medic dentalintegration.org/co-mdi-overview](https://medic dentalintegration.org/co-mdi-overview)

**Kids Get Care Program:** [pubmed.ncbi.nlm.nih.gov/15186069](https://pubmed.ncbi.nlm.nih.gov/15186069)

**The Physician Assistant Leadership Initiative on Oral Health:** [paeaonline.org/oral-health-movement](https://paeaonline.org/oral-health-movement)

**Oral Health in Nursing Education and Practice:** [ohnep.org](https://ohnep.org)

**The Nurse Practitioner-Dentist Model:** [hsdm.harvard.edu/nurse-practitioner-dentist-npd-model-primary-care](https://hsdm.harvard.edu/nurse-practitioner-dentist-npd-model-primary-care)

**National Interprofessional Initiative on Oral Health:** [www.niioh.org](https://www.niioh.org)

**The Center for Integration of Primary Care and Oral Health:** [cipcoh.hsdm.harvard.edu](https://cipcoh.hsdm.harvard.edu)

**Smiles for Life: A National Oral Health Curriculum:** [www.smilesforlifeoralhealth.org](https://www.smilesforlifeoralhealth.org)

**M**any challenges in oral health access are a result of its traditional exclusion from the medical system and the limitations of small primary care teams. These challenges are best addressed through a broad, team-based approach that leverages the strengths of each member of the primary care team and ensures all work together to maximize oral health, supported by a payment model that incentivizes these interactions.

The success of novel integration efforts often depends on ensuring coordination between diverse primary care team members. This can require adopting an expanded definition of the team to include those who play core roles in bringing health and wellness to community members. Community outreach can extend the clinic visit to a patient's home or reach specific populations through community agencies. Collectively, expanded team members include not only healthcare clinicians and allied health professionals, but also community health workers, educators, community organizers, and leaders who can work together to develop innovative approaches that are tailored to specific community needs.

At the Dimock Community Health Center in Roxbury, Massachusetts, medical assistants are the lead member of the team performing routine screening for unmet oral health needs, which they do during the rooming process and then assist with booking dental visits through the electronic health record.<sup>1</sup> The Health Care for the Homeless program in Baltimore, Maryland, facilitates referrals from dental clinicians to nutritional counseling, addressing a common shared risk factor for both oral disease and other common chronic medical conditions.<sup>2</sup> In Seattle, Washington, the Kids Get Care Program provided interprofessional peer-led training by primary care clinicians and dentists to ensure all clinicians successfully screen and refer vulnerable children for health needs, whether they were oral or medical. Importantly, the team included a case manager who supported families in obtaining

medical and dental coverage, booking and transportation to appointments, and removing other barriers to care.<sup>3</sup>

Originally championed by Alaska Native communities and in the state of Minnesota, dental practitioners known as “dental therapists” now practice as part of oral health teams in 13 states.<sup>4</sup> dental therapists (DTs Teams that include dentists, dental therapists, and dental hygienists working together have lower community caries rates and can reach more patients.<sup>5</sup> Dental therapists can also be deployed in primary care settings to better connect patients with oral health services.<sup>6</sup>

A key member of a comprehensive primary care team that is shown to increase access to oral health is community health workers, a type of health professional that has played an important role in strengthening health systems in developing nations and a role that has found its way to the U.S.<sup>7</sup>

At Blackstone Valley Community Health Care in Rhode Island, community health workers develop strong, longitudinal relationships with high-risk patients, including through home visits, which they are often well-positioned to do because they have cultivated longitudinal relationships with patients and are themselves community members. In many cases, the community health workers facilitate dental visits for these patients, preventing them the anguish of having to visit the emergency department with dental pain and the downstream costs of doing so.<sup>8</sup> The Community Health Representative (CHR) program of the Indian Health Service provides home-based and other supportive services to American Indian and Alaska Native patients who face barriers to care. More than 95% of CHR programs are tribally run and tailored to Tribal nations' specific community needs. CHRs have regular contact with the rest of the patient's healthcare team, support patient attendance at clinic visits, and can provide oral health-related motivational interviewing in the home.<sup>9</sup> The central role of community health

workers in empowering community medical and oral health integration is further explored in the Principle 5 - Coordinated and Integrated section.

As the primary care team expands, a practice can provide a comprehensive set of services to address a broad array of patient needs. The Colorado Medical-Dental Integration Project has integrated dental hygienists into pediatric primary care teams in community health centers across the state.<sup>10</sup> In addition to providing full scope dental hygiene services to patients within the primary care setting, the dental hygienist assists with care coordination, warm hand-offs, and primary care clinician education.<sup>11</sup> In five years of operation, 73,706 patients have been screened, and 55% have successfully completed a subsequent dental visit. In another example, the Yakima Valley Farm Workers Clinic has trained WIC certifiers to screen all families for oral health risk and to subsequently refer patients for same-day dental care.<sup>12</sup>

Educational programs responsible for training future primary care professionals have been at the vanguard of ensuring oral health is a component of primary care practice. Integrating oral health into interprofessional training produces graduates who are better able to practice team-based and collaborative care that comfortably and meaningfully includes oral health and who develop innovative systems of practice that improve the oral health of patients.<sup>13</sup> The following examples illustrate some of the activities, educational tools, and resources that support oral health within team-based care that are catalyzing systemic change in education and practice.

As a profession-neutral leader, the National Interprofessional Initiative on Oral Health (NIIOH) and its core partners, tools, and resources serve as a natural catalyst for change. Supported by NIIOH, Smiles for Life (SFL) is the nation's most comprehensive and widely used oral health curriculum specifically designed for healthcare students and clinicians with eight free, online modules that teach oral health across the lifespan. Additional modules have

more recently been designed for global health and community health workers.<sup>14</sup> Since 2005, SFL has seen over 2 million unique site visits and 400,000 courses completed by registered users. With specific instruction in team-based interprofessional practice, it can be used to satisfy accreditation standards in interprofessional education and most health professionals including dentists, medical assistants, nurses, nurse practitioners, pharmacists, and physicians can earn up to 8 hours of free continuing education credit. Research demonstrates that SFL positively influences oral health practice across professions.<sup>15</sup> Several of the interprofessional initiatives highlighted above have made use of SFL to provide interactive, multimedia content to learners and clinicians.<sup>16</sup> In addition to SFL, NIIOH has also produced white papers and implementation guides that enable practices and FQHCs to develop effective interprofessional oral health initiatives.<sup>17,18</sup>

For years, the physician assistant profession has been a leader in ensuring oral health training across the profession. In 2010, NIIOH used a collective impact strategy to launch the Physician Assistant Leadership Initiative on Oral Health, consisting of representatives from the four major PA organizations representing accreditation, education, certification, and practice, to enhance oral health training across the profession.<sup>19</sup> Only four years after its development, 78.4% of physician assistant training programs reported providing oral health training to physician assistant students.<sup>20</sup> By 2017, the proportion of reporting programs with oral health curricula (96%), as well as the breadth of those curricula, had further increased.<sup>21</sup> A national follow-up study of PA graduates by the Oral Health Workforce Research Center suggests that PAs who received education in oral health and disease were 2.8 times more likely to provide oral health services in their clinical practice, compared to those who did not receive any education in oral health competencies.<sup>22</sup>

NIIOH reached out to partners at New York University's (NYU) College of Nursing to launch an innovative initiative leveraging an existing partnership between the College of Nursing and College of Dentistry.<sup>23</sup> The Oral Health Nursing Education and Practice (OHNEP) program, founded by NYU leaders, shares and supports interprofessional oral health educational innovations across a broad stakeholder network and on its website.<sup>24</sup> Using integrated online modules, classroom-based teaching, simulation, and clinical interprofessional experiences, dental, medical, and nursing students have worked in teams to learn about the integration of oral health in primary care and how to collaboratively care for patients. Participation in the experiences has led to significant change in oral health knowledge and interprofessional practice competency for trainees and faculty.<sup>25, 26</sup>

The Nurse Practitioner-Dentist Model, a joint initiative of Northeastern University and the Harvard School of Dental Medicine, combined team-based primary care practice and interprofessional primary care training. In the model, a nurse practitioner provides primary care and medical consultations to patients identified as having unmet primary care needs during chairside screening by dental trainees in the dental school clinic, allowing patients to have their needs better met through a collaboration between the dentist and nurse practitioner.<sup>27</sup>

In addition to serving as an innovative practice model, the program also allowed for side-by-side training of nurse practitioner and dental students, who learn about the other's role and how to work together to maximize patients' health. An implementation guide provides instructions for dental schools considering adopting the model.<sup>28</sup>

A unique academic collaborative among Harvard Medical School, the Harvard School of Dental Medicine, and University of Massachusetts Medical School, the Center for Integration of Primary Care and Oral Health (CIPCOH) is a national center to cultivate and disseminate best practices in interprofessional oral health education. The collaborative has published extensively on the state of oral health education across primary care professions, including medical residencies and fellowships, nurse practitioner and midwifery, and physician assistant programs.<sup>29-33</sup> CIPCOH has begun exploring effective models of educational integration and validating tools to ensure high-quality curricular standards for interprofessional oral health education.<sup>34, 35</sup>

These initiatives to cultivate Interprofessional training and engagement of all primary care team members demonstrate the true potential of collaborative primary care that incorporates oral health.

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## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



## PRINCIPLE 5

# Coordinated and Integrated

- Primary care integrates the activities of those involved in an individual's care, across settings and services.
- Primary care proactively communicates across the spectrum of care and collaborators, including individuals and their families/care partners.
- Primary care helps individuals and families/care partners navigate the guidance and recommendations they receive from other clinicians and professionals, including supporting and respecting those who want to facilitate their own care coordination.
- Primary care is actively engaged in transitions of care to achieve better health and seamless care delivery across the lifespan in a continuous manner.

### Innovations Cited in this Section:

**Hennepin County Medical Center  
Dental Community Health Worker:**  
[www.health.state.mn.us/facilities/ruralhealth/emerging/chw/index.html](http://www.health.state.mn.us/facilities/ruralhealth/emerging/chw/index.html)

**Indian Health Service Community Health  
Representative Program:** [www.ihs.gov/chr](http://www.ihs.gov/chr)

**Epic Wisdom Module:** [www.epic.com/software/#SpecialtiesAncillaries](http://www.epic.com/software/#SpecialtiesAncillaries)

**Blackstone Valley Community Health Center:**  
[www.bvchc.org/contact-us/  
The-Delta-Dental-Clinic-at-BVCHC](http://www.bvchc.org/contact-us/The-Delta-Dental-Clinic-at-BVCHC)

**Albuquerque Healthcare for the Homeless:**  
[abqhch.org](http://abqhch.org)

**Family Health Clinic of Marshfield, Wisconsin:**  
[www.marshfieldresearch.org/cosh](http://www.marshfieldresearch.org/cosh)

Just as the historical separation of oral health and primary care systems has resulted in health inequities and made optimal provision of dental care more challenging, enhanced integration can be transformative in connecting patients with care. Throughout this compendium, we have seen how oral health and primary care have been integrated across clinical and community settings, leveraging the work of interprofessional teams of clinicians and patients themselves. The exemplars described in this chapter have leveraged team members, such as community healthcare workers, who cross the divide between oral and medical systems and the chasm that often exists between practices and the surrounding communities. In addition, technology is an important enabler of care coordination and integration.

### Medical-Dental Coordination through an Expanded Care Team

Community health workers (CHWs; also known as *promotores/as* and community health representatives) are typically trusted members of the medical team, living and working within the communities they serve. This firsthand experience affords a unique perspective of community strengths and resources as well as the impact of structural inequities including, racism, poverty, limited English proficiency, and health literacy. They also have an intimate understanding of the influence of these and other social determinants on patient health and access to care.<sup>1</sup> Oregon and Minnesota now require oral health to be a part of all CHW training in the state. In recognition of the potential broader impact of this role, NIOH and Smiles for Life launched four curriculum modules specifically designed for a variety of front-line health workers including CHWs and community health representatives (CHRs).<sup>2</sup>

One federally qualified health center in Minnesota increased successful referrals to pediatric dentists for children with advanced disease within six months from 20% to 100% after incorporating CHWs into the clinic.<sup>3</sup> Hennepin County Medical

Center, also in Minnesota, employs a CHW within the emergency department to rapidly connect patients with toothaches to dental care. In Washington State, oral health education sessions were led by CHWs across the state. Curricula were delivered by native speakers in seven languages and included interactive, patient-led exercises. After the two educational sessions, participants were significantly more knowledgeable about oral health and how to access dental care.<sup>4</sup>

In the Indian Health Service, community health representatives (CHRs) assist patients with transportation, conduct outreach between visits, and provide health education and support to patients.<sup>5</sup> In addition to supporting dental access in these ways, the Oklahoma Area Dental Support Center of the Indian Health Service has trained CHRs to apply fluoride varnish during home visits. Similar training for home visiting CHRs has been implemented by state Departments of Health in Virginia and New York.<sup>6</sup>

### Interoperable Medical and Dental Records to Integrate Care

Electronic health records (EHRs) have improved data tracking and patient safety and have streamlined coordination and integration of care. Yet many dental practices have not adopted EHRs, and most electronic dental record systems are entirely separate from medical records, without the capability for information transfer.<sup>7</sup> Health systems that have developed interoperable EHRs that incorporate both medical and dental patient data can provide more seamless care. Larger health systems as well as community health centers are especially well-positioned to adopt interoperable EHRs to facilitate patient care. The development of dental modules that can be incorporated within existing medical EHRs, such as Epic System's Wisdom module, can further lower barriers to adoption.<sup>8</sup>

Integrated EHRs allow clinicians to connect patients with care whether they are at a dental or medical visit. The success of the maternal

oral health program at Grace Health in Michigan is in part due to the shared EHR between obstetric and dental clinicians who offer shared appointments to pregnant women.<sup>9</sup> In Rhode Island, Blackstone Valley Community Health Center's interoperable health record includes a patient portal that allows patients as well as clinicians to have access to medical and dental information in the same place.<sup>10</sup> At Neighborcare Health in Seattle, primary care clinicians who identify oral health problems can refer patients to the dental clinic by entering an order within the EHR during medical visits.<sup>11</sup> Because of the many structural and social needs that inform patients' health, Albuquerque Healthcare for the Homeless utilizes an integrated EHR that

includes a personalized treatment plan including medical, dental, and social service needs.<sup>12</sup>

Even if not yet interoperable, EHRs can still facilitate personalized, higher-quality care. At Dimock Health Center in Massachusetts, rates of fluoride varnish application increased to 80% and universal caries screening to 85% after an automated alert was developed within the medical clinic's EHR. NYU College of Dentistry developed a clinical decision-support tool that prompts dental hygienists to counsel patients on hypertension, tobacco use, diabetes, and nutrition based on personalized results informed by patient clinical values and screening.<sup>13</sup>

### Exemplar: Marshfield Clinic

The Family Health Center of Marshfield, Wisconsin (Marshfield Clinic), has developed an integrated medical and dental EHR that has been leveraged throughout the health system's 10 dental centers and 45 medical clinics. The integrated EHR, CatTails, was developed specifically within the health system with the specific needs of the community of medical and dental clinicians in mind. The format and extent of oral health and medical information displayed in the primary care and dental settings were determined through clinician surveys to maximize ease of use.<sup>14, 15</sup> CatTails allows clinicians to refer and confirm patient access to care across the primary care and oral health spectrum, as described in other health systems earlier in this chapter. For example, a primary care clinician can see whether a patient with diabetes has periodontal disease as diagnosed by the dentist, when the patient last visited a dentist, and if the patient needs a dental visit.<sup>16</sup>

The interoperability of the EHR has been used to generate a true system of integration throughout Marshfield. Patients with diabetes have their blood glucose checked during the dental visit, and this information is shared with all clinicians within the EHR. Whether or not patients with diabetes have received a dental visit is considered a key quality metric, and lists of patients who have not achieved this clinical goal are generated within the primary

care clinic by the clinical decision-support system for further outreach and care coordination.<sup>17</sup>

The shared medical and dental EHR not only eases ongoing clinical care across disciplines, but also represents opportunities to leverage health informatics to improve health equity. Marshfield Clinic developed an embedded tool to screen for diabetes risk that utilizes both medical and dental patient data; the tool is more accurate than the initial tool that did not include oral health findings.<sup>18</sup> Conversely, a risk-assessment tool for periodontal disease was developed that will activate an alert during a primary care encounter to encourage appropriate dental referral.<sup>19</sup> Software was also developed that uses natural language processing in medical and dental encounter notes to identify patients with tobacco-use disorder.<sup>20</sup>

The clinic's Center for Oral-System Health serves as a nexus for interdisciplinary research in informatics and personalized medicine, often utilizing the unprecedented de-identified data housed within the integrated EHR.<sup>21</sup> This data has been used to enhance primary care and oral health education, better understand the epidemiology of chronic conditions with medical and oral health manifestations such as oral cancer, diabetes, and inflammatory bowel disease, and advocate for enhanced EHR capabilities nationwide.

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## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



## PRINCIPLE 6

# Accessible

- Primary care is readily accessible, both in person and virtually, for all individuals regardless of linguistic, literacy, socioeconomic, cognitive, or physical barriers. As the first source of care, clinicians and staff are available and responsive when, where, and how individuals and families need them.
- Primary care facilitates access to the broader healthcare system, acting as a gateway to high-value care and community resources.
- Primary care provides individuals with easy, routine access to their health information.

### Innovations Cited in this Section:

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[medicaldentalintegration.org/co-mdi-overview](https://medicaldentalintegration.org/co-mdi-overview)

**United Community and Family Services:**  
[www.ucfs.org/services/dental-health/dentalhealthservices](https://www.ucfs.org/services/dental-health/dentalhealthservices)

**Kaiser Permanente Care Gap:**  
[www.pda-dental.com/our-foundation/our-vision](https://www.pda-dental.com/our-foundation/our-vision)

**The Nurse Practitioner-Dentist Model:**  
[hsdm.harvard.edu/nurse-practitioner-dentist-npd-model-primary-care](https://hsdm.harvard.edu/nurse-practitioner-dentist-npd-model-primary-care)

**COMTREA Health Center Teledentistry Project:**  
[www.comtrea.org/services/dental-care](https://www.comtrea.org/services/dental-care)

**Finger Lakes Health Center Teledentistry Model:**  
[www.hcinnovationgroup.com/policy-value-based-care/medicare-medicaid/blog/13026034/teledentistry-making-a-difference-in-rural-new-york](https://www.hcinnovationgroup.com/policy-value-based-care/medicare-medicaid/blog/13026034/teledentistry-making-a-difference-in-rural-new-york)

**P**rograms throughout this compendium have demonstrated how to increase accessibility of oral health services through community-building and organizing, collaboration across the health and social services continuum, and programming targeting at-risk populations. This chapter specifically explores the expanded access to medical and dental care achieved through integration as well as the use of telehealth technology to make such integration even more accessible to patients.

### Bringing Oral Health Services into Primary Care

While 84.3% of all adults in the U.S. had a visit with a medical clinician in 2018, only 64% had a dental visit; the gap in dental access when compared to medical care access is especially pronounced for at-risk patients who may face more structural barriers to dental access.<sup>1</sup> For this reason, embedding dental clinicians within primary care settings can increase ease of access and allow patients to build trust with dental clinicians through “warm hand-offs” and receiving dental treatment in a more familiar setting.

Since 2009, the Colorado Medical-Dental Integration Project has integrated dental hygienists into 39 primary care clinic sites across the state.<sup>2</sup> Working in dual-function exam rooms, the dental hygienists initially provided anticipatory guidance and dental screening to children-caregiver dyads as part of their pediatric wellness visits.<sup>3</sup> After six years, children who had received more than four fluoride varnish applications had 28% fewer decayed teeth than children in the practice before the intervention.<sup>4</sup> Following the success of the pediatric integrated model that reached 2,071 pediatric patients and their families, subsequent waves of the project began to target adult patients, who now make up 40% of the project’s patient base.<sup>5</sup> Dental hygienists in the program are able to provide preventive services such as dental cleanings and sealant placement as well as take dental radiographs to support

diagnosis. Patients with additional unmet needs are referred to dental clinicians within the health center or the community.<sup>6</sup>

Several other initiatives have incorporated dental clinicians into clinical workflows. At United Community and Family Services in Norwich, Connecticut, children are seen by a dental hygienist in the pediatric clinic as part of the one-, two-, and three-year well-child visits.<sup>7</sup> In Massachusetts, a dental hygienist provided oral health screening and dental cleanings to patients with diabetes in the hospital and provided them with resources to refer them to primary oral health care on discharge.<sup>8</sup> Such initiatives rely on scope of practice laws that allow dental hygienists to operate under indirect supervision by a dentist or for a public health dental hygienist role in which dental hygienists may operate under collaborative agreement with a dentist in public health settings.<sup>9</sup> For example, 18 states allow dental hygienists to bill Medicaid directly, and eight allow dental hygienists to prescribe medications such as high-fluoride toothpaste.<sup>9</sup>

Application of fluoride varnish during pediatric primary care visits has gained traction (and is reimbursed by all private and public insurers) across the United States. Successful integration of fluoride varnish, oral health screening, education, and referral into the medical setting represents an opportunity to engage parents early in oral disease prevention. Integrating oral health in primary care can leverage the entire medical team in oral health promotion, expanding oral health knowledge and skills of all team members. A tested, customizable oral health framework and toolkit for primary care teams supported many early integration efforts, reflecting oral health competencies outlined by HRSA.<sup>10, 11, 12</sup>

A New England-wide approach that trained 415 practices to provide oral health services found that nearly two-thirds (74%) were still providing preventive oral health services six months after the training ended.<sup>13</sup> Clinical quality-improvement initiatives, such as ensuring that

fluoride varnish is stocked in the clinic and implementing standing orders to allow allied health professionals to apply varnish without primary clinician interface, are similar tools to increase rates of fluoride varnish application; an initiative at Contra Costa Regional Medical Center and Health Centers increased rates to 97% of all well-child visits through these measures.<sup>14</sup> In Washington state, a coalition of dental and medical clinicians successfully campaigned the state legislature to include reimbursement for primary care clinicians who provide oral health counseling and screening to children, in addition to fluoride varnish reimbursement.<sup>15</sup>

### Medical Screening and Care during Dental Visits

Just as access to oral health treatment is facilitated by integrated screening and treatment, the dental setting is a similar opportunity to identify unmet medical needs and connect patients with the broader healthcare system. This is especially beneficial for the 23.1 million Americans who each year visit a dentist but not a primary care clinician.<sup>16</sup> Medical screening of dental patients has been successfully implemented for substance-use disorders, behavioral health conditions, and chronic conditions like hypertension and diabetes.<sup>17-23</sup> Apple Tree Dental's tobacco-cessation program incorporates chairside counseling by each member of the dental care team.<sup>24</sup> A healthy weight intervention was piloted for children visiting a pediatric dental practice, and 97% of parents enrolled reported the motivational interviewing and body-mass index measurement that occurred during the dental visit was valuable for their family.<sup>25</sup>

Results from chairside screening programs also require successful models of connection with primary care clinicians to follow up on positive screening results. In several studies of chairside measurement of hemoglobin A1c to screen for diabetes, for example, only about 50% of patients

with a positive screening result independently contacted their primary care clinician.<sup>26</sup>

Kaiser Permanente has focused on developing co-located or digitally integrated dental and medical practices, including a practice that embedded a physician within the dental office.<sup>27</sup> The use of an integrated EHR across the medical and dental practices allowed for the opportunity to address “care gaps” in routine health maintenance, such as vaccinations and age-appropriate cancer screening, during dental visits and immediate scheduling for follow-up. Patients at these co-located facilities were twice as likely to close identified care gaps. An additional intervention included operating influenza vaccine clinics within dental office waiting rooms. Patients as well as accompanying family members were able to receive their influenza vaccine during the dental visit.

At the Harvard School of Dental Medicine, the Nurse Practitioner-Dentist Model employed a full-time nurse practitioner embedded within the student teaching clinic. The nurse practitioner was available for chairside consults for patients identified by student dentists as having unmet health needs or medical complexity during medical history-taking.<sup>28</sup> The nurse practitioner also booked appointments for patients over age 65 with chronic conditions who indicated they did not have a primary care clinician. Medical appointments were documented within the integrated electronic dental record, including a special form for the Medicare annual wellness visit.<sup>29</sup>

### Increasing Access through Telehealth

Adoption of both telemedicine and teledentistry have been increasing in prevalence over the past decade, presenting opportunities to reach patients who would otherwise struggle to obtain in-person care.<sup>30</sup> However, the COVID-19 pandemic has been a transformative catalyst in telemedicine, with initial massive shifts to telehealth across specialties and health systems.<sup>31</sup> Nationwide dental office closures in the early

weeks of the pandemic, as well as changes to the Office of Civil Rights laws to permit alternative digital platforms for telehealth, both contributed to the implementation of teledentistry for screening and triage on an unprecedented scale.<sup>32</sup>

Telehealth presents multiple possibilities for increased access and integration. Rather than depending on physical co-location, use of telehealth can allow for synchronous consults and screening from medical and dental clinicians during visits or asynchronous referral through “store-and-forward” technology (for example, sharing digital intra-oral photos taken during a primary care visit).<sup>33</sup> In addition, telehealth can make the full spectrum of medical and dental integrative services accessible to patients in their homes.

In Missouri, COMTREA Health Center enacted teledentistry as part of its community outreach to nursing homes, detention facilities, and schools. Dental hygienists provide oral hygiene services and take radiographs and digital images that are forwarded remotely to supervising dentists. The dentists produce treatment plans using these data, and referrals for more intensive dental intervention is coordinated as needed.<sup>34</sup> In

Arizona, the teledentistry program at Arizona School of Dentistry and Oral Health trained medical clinic staff in a juvenile detention facility and a facility for adults with serious mental illness to collect intra-oral photos.<sup>35</sup>

At the Finger Lakes Health Center in New York, teledentistry is used to provide specialty pediatric dentistry consults for patients and families identified as having untreated dental disease that may require operating room-level intervention. Use of videoconferencing technology allows the clinic’s patients, most of whom primarily speak a language other than English, to be supported by clinic community health workers during their specialist consultation without losing many additional work hours.<sup>36</sup> In rural Georgia, teledentistry is used to provide real-time dental-treatment planning to children within public schools.<sup>37</sup> Telehealth can even be used to expand availability of oral health services in settings where they are typically unavailable, such as in the emergency department.<sup>38</sup>

With workflow, workforce, and technological innovations like those described above, medical and dental services are being made increasingly accessible to patients wherever they seek care.



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## SHARED PRINCIPLES FOR PRIMARY CARE: ORAL HEALTH EXEMPLARS



### PRINCIPLE 7

# High-Value

- Primary care achieves excellent, equitable outcomes for individuals and families, including using healthcare resources wisely and considering costs to patients, payers, and the system.
- Primary care practices employ a systematic approach to measuring, reporting, and improving population health, quality, safety, and health equity, including partnering with individuals, families, and community groups.
- Primary care practices deliver exceptionally positive experiences for individuals, families, staff, and clinicians.

#### Innovations Cited in this Section:

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**Oregon Coordinated Care Organizations:**  
[www.oregon.gov/oha/hsd/ohp/pages/coordinated-care-organizations.aspx](http://www.oregon.gov/oha/hsd/ohp/pages/coordinated-care-organizations.aspx)

**Kaiser Foundation Health Plan/Permanente Dental Associates:** [www.pda-dental.com/our-foundation/our-vision](http://www.pda-dental.com/our-foundation/our-vision)

**International Consortium for Health Outcomes Measures Oral Health Quality Measures:**  
[www.ichom.org/portfolio/oral-health](http://www.ichom.org/portfolio/oral-health)

**HealthPartners:** [www.healthpartners.com/about/improving-healthcare/aco](http://www.healthpartners.com/about/improving-healthcare/aco)

**Maryland's Health Enterprise Zone Initiative:**  
[health.maryland.gov/healthenterprisezones/Pages/home.aspx](http://health.maryland.gov/healthenterprisezones/Pages/home.aspx)

**B**y providing care that addresses comprehensive health needs, oral health and primary care integration can help health systems achieve the quadruple aim: improving the health of populations, improving the patient experience, reducing the cost of care, and improving clinician well-being.<sup>1</sup>

## Toward Value-Based Care in Oral Health

One path toward high-value integration is through accountable care organizations (ACOs). ACOs fund health care through risk-adjusted capitated payments that emphasize personalized care, prevention, and care coordination, rather than increased revenue from costlier services. While ACO models have been shown to limit costs while providing higher-quality patient care,<sup>2</sup> only a small proportion of these models include dental care; this proportion is slightly higher, though still small, among Medicaid ACOs.<sup>3</sup> The nascent ACO models that include dental services demonstrate the limits of what is possible in terms of oral health integration.

In many of the ACOs that cover oral health along with medical coverage, dental care is still funded through a fee-for-service contracted model; however, dental access increases even for high-risk patients such as those experiencing homelessness and children with disabilities when they are enrolled in an ACO, likely because of the system-wide prioritization of prevention.<sup>4,5</sup> MassHealth (Massachusetts Medicaid) includes two quality measures for pediatric dental access that will affect reimbursement rates to their ACOs; even though dental care is reimbursed separately, leveraging these quality measures encourages the medical home to develop more effective referral relationships and patient navigation processes for patients. Willamette Dental Group in Oregon operates as a dental ACO, reimbursing its clinicians for achieving quality-measure benchmarks, rather than receiving fee-for-service payments for treatments rendered.<sup>6</sup> The organization has adopted diagnostic codes

and clinical-decision support tools such as those described in the Principle 5 section to support clinicians in optimizing patient oral health.

Yet the promise of improved oral health is even stronger in organizations that truly incorporate oral health into a value-based payment structure. In Oregon, Medicaid is administered through regional coordinated care organizations, which act as patient-centered medical homes and are required to include dental care provision. Like in an ACO, clinicians share in cost-sharing and are incentivized to provide high-quality, primary care-focused care. Unlike in other value-based payment models, dental clinicians are also directly involved in quality evaluation, rather than being paid through a fee-for-service carveout as in other ACO models.<sup>7</sup> Such a system provides tangible incentives to both medical and dental clinicians to proactively monitor patients' chronic conditions, health risk, and unmet needs to encourage prevention. Also in the Pacific Northwest, a formal relationship between Permanente Dental Associates and the Kaiser Foundation Health Plan has resulted in a per-member, per-month arrangement for dental coverage that encourages prevention and other high-value dental services, rather than more costly downstream interventions. The financial relationship between the two organizations also encourages meeting primary care needs in the dental clinic and dental referrals in the primary care setting in order to prevent poor outcomes and increase adherence to quality measures.<sup>8</sup>

## Quality Measures and Novel Reimbursement to Foster Integration

Because of dental care's reliance on procedure codes, evaluation of oral health quality outcomes has been difficult. Quality measures developed for oral health, such as those used by MassHealth or Kaiser, are based on process rather than outcome measures—in other words, quality evaluation has been limited to whether or not a procedure was performed, rather than focusing on whether patients' needs were met or

disease prevention was achieved. Recently, the International Consortium for Health Outcomes Measures published a set of standard oral health quality measures. Developed through an iterative process that involved a comprehensive review of the literature and a Delphi group of experts, the majority of the measures are patient-centered and do not rely on a dental clinician to conduct an oral health examination.<sup>9</sup> Broader adoption of these measures would allow health systems to reimburse oral health services for quality rather than procedure, bringing oral health more in line with evolving systems of healthcare reimbursement and providing metrics through which medical and oral health clinicians can share responsibility for patient health outcomes.

In addition to use of quality measures, a key component of providing high-quality integrated care is ensuring clinicians are reimbursed for practices that benefit patients but may not fit traditional scope of practice or procedural reimbursement. In Oregon, dentists can be reimbursed for time spent providing tobacco-cessation counseling and screening for diabetes, greatly increasing the likelihood such services are incorporated into dental care.<sup>10</sup> Medicaid dental clinicians in New York and Pennsylvania are similarly eligible for reimbursement for tobacco-cessation counseling.<sup>11</sup>

HealthPartners, an ACO in the northern Midwest, waives co-pays and other fees for periodontal treatment for patients with diabetes; for those patients who have not had a dental visit in a year, nurse navigators are able to provide outreach and assist with appointment booking.<sup>12</sup> However, such free care can only be provided

for those patients dually enrolled in the ACO's medical and dental insurance.

Researchers estimated that establishing chairside screening programs for diabetes, hypertension, and hyperlipidemia could result in one-year savings of \$13 to \$33 per patient per year. Yet producing such savings for the healthcare system, as well as improved health for patients, requires an integrated model that would allow screening results to be rapidly triaged back to medical clinicians and a reimbursement system that encouraged using time during dental appointments to conduct the screenings.<sup>13</sup>

Ultimately, high-value care must also incorporate the full community and the impact of structural and social factors on individual health outcomes. Maryland's Health Enterprise Zone Initiative provided key health systems funding to community organizations in medically underserved ZIP codes, including for community health worker deployment, school-based programs, and dental infrastructure development. At the end of eight years, these ZIP codes had overall lower rates of preventable hospital stays, demonstrating the impact of community-centered care, including oral health, on indicators of optimal health utilization.<sup>14</sup> This was true even though Maryland's Medicaid program does not provide full coverage for adult dental benefits.<sup>15</sup> The initiative highlights the broad array of factors that impact health outcomes and the benefit of forward-thinking programs that include medical, dental, and systems-strengthening interventions on the individual and community level.

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# Lessons Learned from the Patient-Centered Medical Home Initiative

Since the Patient-Centered Medical Home (PCMH) principles were published in 2007,<sup>1</sup> there is increasing acknowledgement that reform of primary care delivery and payment is foundational to achieving the quadruple aim,<sup>2</sup> or more succinctly, to achieving more healthcare value. From its inception as a model to treat high-needs children and its evolution over many decades, the PCMH has always included an emphasis on comprehensive care in order to prevent and treat the needs of patients in a holistic fashion. In 2017, as described previously, the Primary Care Collaborative updated the 2007 PCMH Principles by issuing the Shared Principles for Primary Care.<sup>3</sup> One of the seven Shared Principles focuses on comprehensiveness and equity and now explicitly acknowledges oral care as part of a broad set of services that advanced primary care should ideally include.

As leaders in the primary care and oral health communities contemplate how to better integrate medical and dental care via strategies that reform delivery and payment, the experience of developing, gaining consensus around, setting standards for, assessing the impact of, and evolving the PCMH may be instructive. PCMH is used as a shorthand for a number of different advanced primary care models that focus on:

- Strengthening the partnership between primary care clinicians and their patients
- A team-based approach to delivering a comprehensive set of services
- Leveraging technology to both better target patients and to deliver care through different modalities

## Developing and Gaining Consensus Around the PCMH Model

In the early 2000s, a group of large, multinational employers, principally led by IBM, shared a deep sense of frustration that they were not paying for the kind of primary care they wanted for their employees and the kind of primary care they found available in other high-income countries. Talking with primary care physician specialty leaders, they came to understand that clinicians were also frustrated by how primary care had evolved. They set out to transform the delivery of primary care by together developing and gaining consensus across four major physician specialty groups and many large employers around five key principles of the PCMH.<sup>4</sup>

Once they had agreement across these two major stakeholder groups at the principle level, they

pursued multiple strategies simultaneously: broadening the stakeholder groups in support of their vision; asking the National Committee for Quality Assurance (a national accreditor) to develop a way to assess whether a practice met the standards of care to be certified as a PCMH; socializing the PCMH model with health plans to incentivize physician practices they contracted with to transform their practices into PCMHs; and advocating to state and federal policymakers about legislative changes to support this new primary care delivery model. In particular, the employers used their bargaining power to get nearly all of the national plans to agree to provide support for practices in their transformation journey and to provide financial recognition if they achieved PCMH certification.<sup>4</sup>

Employing these initial strategies and building on them over the last dozen years has led to widespread adoption of the PCMH model. The American Medical Association's (AMA) 2018 Benchmark Survey showed that 32%<sup>5</sup> of physicians participate in a medical home, up from 24% in 2014,<sup>6</sup> with about a quarter of physicians unclear if they are participating in a PCMH. The American Academy of Family Physicians (AAFP) reports that 45% of family physicians practice in a PCMH.<sup>7</sup> And a study reviewing state laws found that 44 states and the District of Columbia had passed or introduced 330 laws to define or demonstrate the medical home concept.<sup>8</sup>

The federal government is also an important enabler of the PCMH, with Medicare physician payments recognizing practices that are PCMH-certified.<sup>9</sup> In addition, the Center for Medicare and Medicaid Innovation (CMMI) has devoted considerable attention and resources to supporting the development and evolution of medical home model variants, including the Multi-Payer Advanced Primary Care Practice Demonstration, Comprehensive Primary Care Initiative, and Comprehensive Primary Care Plus (CPC+). In April 2019, CMMI introduced five new primary care payment and delivery models under two paths: Primary Care First<sup>10</sup> and Direct

Contracting.<sup>11</sup> At the April 2019 announcement, CMMI leaders suggested that their agency's expenditures on primary care models dwarfed spending on all other agency innovation models, demonstrating their commitment to strengthen and reform primary care.

## Evidence Related to the PCMH

While there are state<sup>12, 13</sup> and health plan<sup>14</sup> medical home models that have demonstrated enhanced value, including increases in quality and reductions in costs due to fewer hospitalizations and ED visits, the overall evidence related to the PCMH is more mixed.<sup>15, 16</sup> The PCC's 2017 evidence report, which reviewed 45 studies that met rigorous criteria, culled from over 1,500 peer reviewed studies, generally found that becoming or advancing one's status as a PCMH was associated with reduced costs, and some studies showed enhanced quality, but not uniformly.

Experts have speculated on why PCMH evaluations do not show widespread gains in reduced costs or enhanced quality, acknowledging that the model has been implemented in so many different ways as to make comparisons challenging and that assessments often occur early on in PCMH implementation.<sup>17</sup> The PCC's 2017 report found that practices were more likely to show positive results after four to five years.<sup>18</sup>

There are also structural reasons that the model may be underpowered, according to experts who have advanced a number of hypotheses. First is that, while primary care delivery was reformed, primary care payment has largely remained unchanged and continues to be based on a fee-for-service model. AMA data suggests that the proportion of physician revenue from FFS is about 70% and has been unchanged since 2012.<sup>19</sup> There is some evidence that a practice must receive a large majority of its revenue from capitation (one study showed more than 60%)<sup>20</sup> in order to be incentivized to provide team and non-visit-based care, both key tenets of the PCMH; otherwise,

it will make only modest investments in such models.<sup>21</sup> The proportion of physician revenue from capitation revenue is quite modest at an average of 7% in 2016.<sup>22</sup>

Second, regardless of how primary care physicians are paid, there continues to be underinvestment in primary care as measured by a number of different proxies. An analysis by Reiff, et al. using the Health Care Cost Institute’s large sample of commercial claims found primary care spending was 4.35% of total healthcare spending in 2017 and had declined from 2013.<sup>23</sup> Another estimate of primary care spending using survey data across all payers found primary care spending was 5.4% of total national healthcare expenditures in 2016, down from 6.5% in 2002.<sup>24</sup> This contrasts with an average of 14% primary care spending as a proportion of total healthcare spending in the OECD countries, although the measures of primary care spend do differ.<sup>25</sup> This underinvestment makes it challenging for primary care practices to build a team able to provide a comprehensive set of services, e.g., behavioral health, oral care, and care management services, and to invest in technology and data analytics that can help practices better manage and support their patients.

Other proxies of underinvestment in primary care include declining primary care utilization and the shrinking primary care workforce. More specifically, primary care visits are flat or falling, and the percentage of adults reporting a “usual source of care” has stalled despite the coverage expansions enacted by the Affordable Care Act. The number of primary care physicians per capita is also declining, and lower primary care physician “density” is associated with higher population level mortality rates.<sup>26</sup> That said, the primary care clinician workforce is broader than primary care physicians, as reflected in the broad definition of primary care, which also includes nurse practitioners (43% of whom practice in primary care) and physician assistants (36% practice in primary care). Despite the increase in both of these

professions, primary care spending broadly defined to include diverse members of the primary care team has also not increased in recent years.<sup>27</sup>

Finally, when other parts of the medical neighborhood continue to be incentivized by volume, e.g., higher hospital census leading to enhanced revenue for health systems, it is difficult for primary care to counteract these tendencies, particularly so as the share of physicians employed by hospitals and health systems is now greater than those in independent practice.<sup>28</sup>

### Potential Lessons for the Oral Health Integration Effort

Efforts that start with principles as a way to articulate a desired future state are a proven method to build consensus across diverse stakeholders, as evidenced by the PCMH effort. This report is a starting point for leaders to rally diverse stakeholders around for the integration of primary care and oral health. It also may serve as a spur to bringing the oral health and medical workforces along to embrace more comprehensive care.

With the PCMH and other reform efforts as a guide, it is important to simultaneously pursue care delivery reform and payment reform. One without the other is ultimately less successful. Practices need to have both a vision for what they are trying to achieve to improve patient health on the delivery side and a financial model that is sustainable.

In order to pivot to value-based payment, oral health needs scientifically valid, reliable, and actionable performance measures. Oral care is behind relative to medical care in the performance-measurement arena and needs to catch up in order to transition into a world where performance measures catalyze delivery-system changes and where value instead of volume is prioritized. A search of the National Quality Forum’s Quality Positioning System (QPS)



database of over 1,100 endorsed measures shows 122 measures for primary care versus nine oral health measures.<sup>29</sup>

As with the transition to the PCMH for primary care, investment in infrastructure, including interoperable EHRs and analytic capabilities, will be vital to support performance measurement collection and reporting as well as the integration and coordination of patient care across medical and oral health delivery systems.

Finally, the coronavirus pandemic context with ever-widening health inequities may serve as a motivation for more substantial change. Racial minorities and other socially marginalized groups are uniquely vulnerable to COVID-19 for a multitude of reasons and are suffering disproportionately.<sup>30</sup> Underlying co-morbidities that already affected communities of color at a significantly higher rate, including diabetes, obesity, asthma, oral infections, and cardiovascular disease, exacerbated by a greater likelihood of exposure to poor air quality and

subpar housing, as well as the stress of systemic racism and distrust of the health system taken together put Black and Brown populations at a much greater risk of getting COVID-19 and dying from the virus.

The CDC reports that in one sample of hospital-confirmed COVID-19 cases, Black Americans, who comprise 13% of the U.S. population, made up 33.1% of patients, indicating a stark racial disparity.<sup>31</sup> Notably, COVID-19's effects have magnified the economic and racial disparities already prevalent in oral and dental care. Racial and ethnic minorities currently shoulder a disproportionate amount of the dental disease burden, with Black, Latinx, American Indian, and Alaska Natives having worse oral health outcomes than White Americans.<sup>32</sup> Primary care and oral health leaders can jointly make the case for more investment in prevention and health promotion as a guard against health inequities getting even worse. The time is ripe to appeal to policymakers that the current trajectory will ultimately sink all boats and further depress the nation's health.

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# Lessons Learned from Behavioral Health Integration

Since the mid-2000s, significant attention and resources have been allocated to developing comprehensive primary care models that include prevention, acute care, and chronic disease management. The Patient-Centered Medical Home (PCMH) and additional advanced primary care models combine these concepts, enabling teams and networks of clinicians to work together to implement and evaluate strategies that promote patient health as well as enhance patient outcomes.

As the PCMH model evolved, there was growing recognition that behavioral health, while critical to preventing suffering and improving overall health, was often difficult to access and was delivered in isolation from medical care. At the same time, the evidence base about the prevalence and interaction of medical and mental co-morbidities was growing. This awareness has led to multiple efforts to integrate behavioral health into advanced primary care models with tangible benefits to patients and the overall health system.

While there are similarities and differences in the opportunities and challenges related to integrating oral and behavioral health into primary care, to date, oral health integration has lagged behind. A consideration of factors that created the movement to integrate behavioral health as well as existing behavioral health integration concepts can provide valuable insights for oral health integration activation frameworks and strategies.

## Integrating Behavioral Health

As in the case of oral health, there were compelling reasons to integrate behavioral health and primary care, including the fact that primary care provides about half of all mental health care for common psychiatric disorders. Individuals with serious chronic diseases often have co-morbid mental health problems, with as many as 70% of primary care visits related to psychosocial issues.<sup>1</sup> Patients who are substance abusers or have serious mental illness also have higher rates of chronic illnesses, and people with physical health conditions have higher rates of mental health issues.<sup>2</sup> Furthermore, patients with chronic health issues need mental health services to help cope with their illness, and often many somatic symptoms are related to the mental health aspects of their chronic illness. Although most primary care providers receive some behavioral health training and treat these disorders with medication, patients may require additional mental health services including therapy that can be difficult for a primary care clinician to provide given the time constraints of patient encounters.

Untreated or undertreated mental illnesses have serious consequences; patients with mental illnesses die 13 to 30 years earlier than the general population from conditions that could have been treated by a medical clinician.<sup>3</sup> In addition, while children and adults are more likely to be

seen in a medical setting than a mental health setting, many of these conditions go undetected, and clinicians continued to underdiagnose and undertreat depression.<sup>4,5</sup> Addressing the needs of the whole person through the integration of physical and behavioral health services was an important first step, recognized to have the potential to improve health outcomes through high-quality mental health care and reduced costs for individuals with behavioral healthcare needs.<sup>6</sup>

### Evolving Integration Models

Historically integrated care meant that all of the patient's needs would be taken care of in one setting, including behavioral health. Behavioral health models began by adapting concepts that were common to various models of integrated care, models that were designed to include patient and referral tracking, registry functions, adoption of evidence-based guidelines, screening, patient self-management support, and case management by nonphysician staff.<sup>7</sup> Policy documents and demonstration projects emerged that supported the adaptation of behavioral health for these integrated care models.

In 2009, the National Council on Behavioral Community Healthcare defined a dynamic behavioral health role for the PCMH.<sup>8</sup> In 2013, the Substance Abuse and Mental Health Service Administration (SAMHSA) created a framework to help healthcare clinicians plan and support an integrated care system. The framework encompassed three categories: coordinated care, concentrating on communication; co-located care, focusing on physical proximity; and integrated care, emphasizing a change in practice.<sup>9</sup> Within each category, various levels of integration described activities spanning what they described as minimal to full integration. Full integration was framed as a transformation consisting of a single health system's medical and behavioral healthcare clinicians working together to treat a patient's behavioral and medical needs with shared access to a patient's medical record.

The aforementioned models and others that focused on behavioral health integration often required reassignment of staff roles, enhanced training, and a shared commitment to incorporating a team-based approach to care.<sup>10</sup> They also called out the importance of tools such as an electronic health record that would make information available to the broader healthcare team to support outcome tracking and shared decision-making. Reaching consensus about shared concepts and metrics became a priority of the Agency for Healthcare Research and Quality (AHRQ) and its work on behavioral health integration, which became a seminal resource for those seeking information on approaches to integrated behavioral health care. Developed through a consensus process, the Lexicon for Behavioral Health and Primary Care Integration<sup>11</sup> was used to describe parameters of how integrated oral health practices might differ from one another, recognizing the unique needs of populations, communities, and various primary care delivery settings. Along with the Atlas of Integrated Behavioral Health Care Quality Measures and an observational study of real-world practices that were integrating behavioral health into primary care, combined AHRQ resources helped define competencies and quality measures that helped inform the development of subsequent training programs, policies, and payment programs.<sup>12</sup>

### Financing Strategies

New policy and treatment models impacted emerging financing strategies for behavioral health care, integration, and collaborative care management. The Affordable Care Act (ACA) extended dependent-care coverage to all individuals younger than age 26. Expanding coverage likely caused an increase in private insurance coverage and mental health treatment by young adults.<sup>13</sup> The ACA shifted payment for mental health and substance use treatment to private insurers and reduced reliance on public funds. Along with increased access, opportunities

for financing of an integrated behavioral health program expanded. The AIMS Center for Advancing Integrated Mental Health Solutions<sup>14</sup> continues to provide case studies, resources, and tools related to various reimbursement options for integrated behavioral health services including bundled payment models and collaborative care codes that allow greater flexibility in staffing.

Several states have begun contracting with comprehensive managed care plans to integrate these services and reduce fragmented care for Medicaid enrollees.<sup>15</sup> A recent conceptual framework by the Center for Healthcare Strategies outlines key levers for advancing physical-behavioral healthcare integration at the practice level through integrated Medicaid managed care. This framework is based on experiences of clinicians in three states—Arizona, New York, and Washington—that recently transitioned to integrated managed care.<sup>16</sup>

## Evidence of Effectiveness

Following the Surgeon General’s report on mental health<sup>17</sup>, funding from public and private foundations, national institutes, and others provided money for practice-based development, research, and testing of implementation strategies related to primary care and behavioral health integration. The Robert Wood Johnson Foundation gave a big lift to early efforts and continues to support work that builds consensus and evidence-based research, such as the 2010 depression and diabetes initiative.<sup>18</sup> Evidence emerged supporting behavioral health integration, documenting that integrating behavioral health into primary care made a difference in patient outcomes and attitudes related to their mental health.<sup>19</sup> It specifically impacted depression symptoms<sup>20,21</sup> and increased patient adherence to treatment<sup>22</sup>, suggesting it further improves patient quality of life<sup>23</sup> and satisfaction and engagement with health and their healthcare clinicians.<sup>24,25</sup> The body of evidence has continued to grow along with related resources,

many of which can be found on the behavioral health resource page of the PCC website at [www.pcpcc.org/topic/behavioral-health-0](http://www.pcpcc.org/topic/behavioral-health-0).

Although the evidence base has grown, primary care practices struggle to identify a financing model that supports behavioral health integration and allows for the sustainability of these efforts over time. Regulations are still in place that limit data sharing across medical and behavioral health systems, and issues related to stigma around behavioral health persist. Nevertheless, the behavioral health integration movement has made significant progress in adapting conceptual frameworks, policies, outcome metrics, and payment models that further integrated behavioral health care. For example, the introduction of Accountable Care Organizations (ACOs), more PCMHs integrating behavioral health, and programs such as CPC+ from the Center for Medicare and Medicaid Innovation that encourage behavioral health integration have all been positive steps in the right direction.

Case studies and compendium references shine a spotlight on the fact that many of the above issues and concerns also apply to patients with untreated dental disease. This section highlights several strategies adopted by clinicians and care systems to advance behavioral health integration. In many ways they echo emerging strategies reported in the case studies of this compendium. Both oral disease and behavioral health conditions were historically overlooked and undervalued by a fragmented healthcare system. We now recognize the impact of behavioral health on physical health and have learned that diseases of the oral cavity may adversely affect chronic diseases like Type 2 diabetes and rheumatoid arthritis as well as the outcomes of treatments such as heart valve replacements and radiation therapy.<sup>26</sup> Further, the bi-directional relationship between primary care and both behavioral health and oral health warrants further exploration. All speak to the unrealized potential of engaging all clinicians to work together to promote overall health and well-being.<sup>27,28</sup>

Defining concepts common to behavioral and oral health, such as those described in the Shared Principles of Primary Care, provide additional core elements to inform integration frameworks. These concepts and values help establish the need for a partnership among clinicians, patients, and their families. In particular, these partnerships need to ensure that decisions are centered on and respect a patient's wants, needs, and preferences and that all persons have access to the education and support that is needed to make decisions and participate in their own care.<sup>29</sup>

Recently, the Health Policy Institute of the American Dental Association noted that on average someone visits a hospital emergency department for dental conditions every 15 seconds in the United States.<sup>30</sup> Given many historical similarities in the challenges faced by behavioral health and oral health integration advocates, it may be instructive to consider key concepts from the behavioral health integration movement that can help healthcare policymakers, planners, payors, and clinicians deliver quality, effective oral healthcare services within the context of the individual, their community, and broader population.

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# A Call to Action

**T**he previous chapters have demonstrated the many ways that primary care is incomplete without oral health and have highlighted the innovative work of advocates, clinicians, and health systems across the United States to integrate oral health and primary care. Yet the organizations noted in this compendium are remarkable in part because they stand apart from how the vast majority of Americans access (or struggle to access) oral health care.

The COVID-19 pandemic and renewed calls for racial justice in halls of power across the nation have served as vivid reminders of the persistent inequities in health outcomes experienced by at-risk Americans. The broader impact of COVID-19-related practice closures on oral health is still unknown and most likely to harm patients already facing oral health challenges. The American Dental Association (ADA) Health Policy Institute reported that the dental industry has recovered to near the pre-pandemic baseline more rapidly than any other health field.<sup>1</sup> Yet the industry continues to emphasize the private practice delivery of fee-for-service care to those who can afford it. While this recovery attests to the value of oral health to consumers, this quick return to an inequitable system reduces the opportunity for delivery system innovation, such as broader adoption of telehealth, enhanced medical-dental integration, and chronic care management of dental disease.<sup>2</sup>

The Shared Principles of Primary Care represent an ideal framework for reconsidering the place of oral health within primary care and the health

system at large. Through the collaborative, interprofessional, and patient-centered framework of the Shared Principles, innovations that extend even beyond those in this compendium can be developed and disseminated. Implemented on a broad scale, embedding oral health within the Shared Principles of Primary Care can bring about the change necessary to improve oral health and primary care for all Americans.

With the accumulated wisdom of the Patient-Centered Medical Home and behavioral health integration movements as well as the successes demonstrated by the exemplars throughout this compendium, we urge stakeholders to consider the following three overarching policy recommendations as our community navigates forward during a period of unprecedented challenge and evolution. For each of the three key recommendations, there is a set of more immediate policy recommendations and a set of recommendations that have a longer time horizon. They are captured in call-out boxes.

## **Expand Oral Health Coverage and Access**

Although healthcare coverage does not always equate to access, the cost of dental treatment remains a substantial barrier to care for millions of Americans. Financial barriers are a more significant contributor to not getting dental care than other kinds of healthcare services.<sup>3</sup> Lack of widespread coverage for oral health services also



limits the ability of primary care and health service organizations to develop integrated systems of oral health needs assessment and treatment.

Most Americans with dental insurance receive it through their insurer, leaving about 30% of Americans without dental insurance.<sup>4</sup> An estimated 47% of those newly uninsured as a result of the economic effects of COVID-19 will also lose their dental insurance.<sup>5</sup> Although children with Medicaid are mandated to have dental coverage, only 7.4% of U.S. adults receive dental benefits through Medicaid; only 35% of older adults with Medicare have dental coverage.<sup>6,7</sup>

These coverage gaps translate into predictable and preventable poor outcomes for vulnerable people. Uninsured patients or those with public insurance are more likely to present to the emergency department (ED) for dental pain,<sup>12</sup> and among those who do, most are unable to visit a dentist within six months of their ED visit, emphasizing the importance of dental coverage in achieving meaningful oral health.<sup>13</sup>

To move oral health and primary care integration forward, dental coverage must be considered a critical component of health insurance, rather than an optional benefit. State Medicaid programs must include dental coverage for adults in addition to children and include oral health within value-focused payment mechanisms. At the federal level, expansion of Medicare to include oral health must become a priority in order to protect older adults who face high rates of unmet oral health needs.

Oral healthcare coverage demonstrably impacts access to care for many Americans, but is by no means the only contributor to long-standing oral health inequities. Distribution of oral health and healthcare clinicians, access to critical social needs such as healthy foods and safe housing, and dehumanizing experiences with the healthcare system all disproportionately affect oral health for at-risk communities.

### Dental Coverage in the U.S.

Most dental insurance functions as an indemnity plan, with insurers covering a higher share of lower-cost procedures, and a lower share of more expensive procedures.<sup>8</sup> Thus even those with dental insurance may need to forego needed care if their out-of-pocket share renders it unaffordable. This structure is a historical vestige but also a result of the fee-for-service system under which most of dentistry is practiced.

Coverage is even more tenuous for those with public insurances. Although low-income children are guaranteed dental coverage through the Early and Periodic Screening, Diagnostic and Treatment program, low-income adults have no such protections. Medicaid provides only emergency dental coverage (i.e., dental extractions) in 10 states, and six states offer no dental benefits at all.<sup>7</sup> This lack of coverage is compounded by qualification limits in states that did not expand Medicaid under the Affordable Care Act.<sup>9</sup> Low Medicaid reimbursement rates for fee-for-service care discourage dentists from accepting Medicaid, with average Medicaid acceptance rates of 38% nationally.<sup>10</sup> During periods of economic downturn, Medicaid dental benefits are often cut, bringing them under threat during the current period of economic instability.<sup>2</sup> Traditional Medicare does not offer any dental coverage, and adults over 65 have the lowest rates of dental insurance of any demographic.<sup>11</sup>

The expansion of access must also extend beyond financial infrastructure to include equity-driven policies that empower communities. To improve nationally low rates of Medicaid acceptance, clinicians must be incentivized or compelled to accept all insurances. Health-related social needs such as access to language-concordant information and clinicians, transportation, and food security must be seamlessly integrated into healthcare delivery and all oral health services. Community voices, especially those from communities of color and other populations harmed by existing systems of power and oppression, must be elevated to drive patient-centered health systems that are welcoming, individualized, and deserving of trust.

The primary care community must continue to advocate for universal healthcare coverage that includes oral health—in Medicaid, Medicare, and for those with employer-sponsored plans, as well as for those who are currently uninsured—to ensure continued access to oral health services for all.

**Summary of Recommendations:**

- Develop a Medicare dental benefit.
- Expand Medicaid adult dental benefits to all states.
- Ensure community-driven focus groups and community-based participatory research are a part of all oral health innovation efforts.

**For Enduring Health Justice:**

- Enact universal health coverage in the United States.
- Incorporate comprehensive oral health care into all health insurance programs.
- Include the leadership of marginalized communities in health and social service resource-investment decisions.

**Align Oral Health and Primary Care with New Payment Models**

Where PCMH and behavioral health integration models have been particularly successful, they have been supported by reimbursement structures that incentivize prevention, effective chronic care management, and whole-person care. Physician-led accountable care organizations have also demonstrated that high-value care can be incentivized with robust quality measures and related shared savings. In particular, comprehensive reimbursement models (global payment, capitation) with adequate payment allow practices—whether they are independent or part of an ACO—to build a diverse team that can deliver a comprehensive, patient-centered set of services as envisioned by the Shared Principles.

The inclusion of oral health in these models has been stymied by the conventional fee-for-service reimbursement structure that is still near-universal for oral health services. The fee-for-service system incentivizes maximally invasive procedures that bill at the highest rates. Conversely, this system provides minimal or no reimbursement for patient counseling, care coordination, and preventive oral care delivery, even though these practices prevent the development of the severe dental needs that require costly downstream interventions. This procedure-based payment model is also devoid of patient-centeredness, as patient satisfaction and preferences are not accounted for in procedural reimbursement.

Oral health integration into value-based primary care and ACO models is also limited by the absence of robust diagnostic codes and quality measures. The health system and payers must focus on the broad adoption of quality measures that emphasize patient perspectives and priorities, including through the use of consumer and community-oriented panels and surveys. Reimbursement for these measures must also include corrections for potential bias that could discourage clinicians from caring for patients at high risk of poor oral health.

Broader adoption of these measures into ACO and other primary care payment models would provide a distinct incentive for health systems to more fully integrate oral health care, fostering innovation. This is especially true as many of the models of oral health integration explored in this compendium transcend traditional reimbursement mechanisms, an ongoing challenge to sustainability.

The adoption of innovative delivery and payment models that optimize health can be accomplished only through enhanced information transfer and data sharing. As the many efforts in Principle 5 demonstrate, interoperable health records that

include both medical and dental information is a prerequisite to further innovation.<sup>16</sup> Such data allows for better understanding of health and oral health inequities and associations, facilitates skill-sharing between primary care and oral health clinicians, empowers patients by giving them access to their own data in a seamless manner, and supports the collection of data essential to quality-measurement reporting. When such systems are commonplace, evidence-based, integrated oral health care will be much easier to achieve.

Oral health is not the only component of health that is affected by these imperatives. Primary care and ACO models need to move more rapidly to adopt advanced payment models so that the vast majority of their revenue comes through such models. Regular AMA surveys show that 70% of physician revenue has remained tied to fee-for-service between 2012 and 2018.<sup>17</sup> Some studies suggest that it is not financially viable for primary care practices to build a team and provide non-visit-based care unless two-thirds of practice revenue is capitated.<sup>18</sup> As the oral health community works to improve oral health quality measures, they need to simultaneously join with the primary care community to advocate for comprehensive payment to support comprehensive primary care services that include oral health.

#### **Summary of Recommendations:**

- Develop and pilot oral health quality measures across the primary care and oral health settings.
- Model inclusion of oral health outcomes and care delivery within value-based payment models, such as PCMHs and ACOs.
- Incentivize the development and adoption of interoperable health records that include both medical and dental information.

#### **For Enduring Health Justice:**

- Mandate the use of dental diagnostic codes, and work to move oral health away from fee-for-service reimbursement, in concert with both public and private stakeholders.

### **The Status of Oral Health Quality Measures**

Development of dental quality measures has also been limited by the lack of diagnostic coding used for oral health conditions. Dental clinicians do not use the International Classification of Disease, 10th edition (ICD-10) diagnostic coding system used in medicine, and the adoption of dental-specific diagnostic codes has been largely limited to academic settings.<sup>14</sup> Without diagnostic coding, the appropriateness of procedures provided cannot be determined, and population oral health surveillance is curtailed (for example, it would not be possible to determine whether all patients with a particular diagnosis, such as periodontal disease, are receiving needed treatment for the condition).

More recently, the International Consortium for Health Outcomes Measurement (ICHOM) has developed and validated a set of patient-centered quality outcomes for adult oral health care.<sup>15</sup> Because many of the outcomes are based on patient perceptions and values about oral health care, they could also be collected by non-dental clinicians, such as within the primary care setting.

- Unite oral health and primary care leaders to advocate with public and private payers for the widespread adoption of comprehensive value-based payment models for comprehensive and equitable care.
- Leverage health data to identify and eliminate oral health inequities, and develop far-reaching primary care programming that incorporates oral health.

### **Grow the Oral Health Workforce**

Primary care innovations, particularly the PCMH model, have demonstrated that primary care is truly a team sport. Primary care clinicians, allied health professionals, community health workers, social workers, public health leaders, school nurses, and others all play an important role in optimizing care delivery and keeping patients thriving. In this compendium,

examples exist of individuals in all of these roles developing oral health knowledge and applying it, making themselves a vital part of the oral health workforce.

Inclusion of these many important clinicians and caregivers requires access to oral health training for all. Such knowledge is not yet standard within health professions education. Model workflows for the inclusion of oral health screening and preventive service delivery within primary care practice can be taught to both trainees and practitioners.<sup>25</sup> Expansion of these models to all health professions training programs will ensure that all primary care team members enter practice prepared to advocate for the importance of integrating oral health into patient care.

In addition to the many primary care team members who are a part of the oral health workforce, the oral healthcare team itself can also become more effective through team-based care. As described in Principle 4, the success of many initiatives that integrate dental hygienists into

community and primary care settings requires a broader dental hygiene scope of practice that exists only in some states.<sup>26</sup>

Just as NPs and PAs work collaboratively with physicians in primary care teams, dental therapists (DTs) care for patients on teams with dentists, providing interventional dental care such as fillings and exams. Studies have shown that patients cared for by dental teams with both DTs and dentists have better oral health outcomes.<sup>27</sup> The primary care community is well-suited to advocate for the adoption of these roles in dentistry because of the decades-long success of team-based primary care.

This expanded dental team is also key to delivery-systems innovation, such as embedding dental services within primary care practices and expanded delivery in community settings such as long-term care facilities and schools. Without the support of team-based care, America's oral health infrastructure cannot successfully meet the needs of all people. Such roles are especially critical in expanding access to oral health services for at-risk patients, for many of the reasons described in this compendium. Inclusion of public health leaders in oral health and primary care integration models can also ensure further reach at a population level.

Primary care and oral health care must also strive toward an expanded healthcare workforce that more accurately reflects the demographics of the United States population and the imperative of health equity. Health professions programs, including dental education programs, must deliver intensive social-justice and racial-liberation curricula and cultivate robust community relationships that produce a justice-minded primary care and oral health workforce. Diversity and inclusion must be a mandate for all health professions training programs, with concerted efforts made to increase the number of graduates of color and from other

### The Status of Oral Health in Primary Care Training

The average medical school graduate receives less than five hours of oral health content, and midwifery and nursing programs receive even less.<sup>19, 20, 21</sup> Many practitioners indicate that they do not have the confidence in their oral health knowledge required to enact innovative, interprofessional skill-sharing that can improve access to oral health.

As described in Principle 4, physician assistant and nurse practitioner education serves as a beacon of success in equipping legions of future primary care clinicians with oral health knowledge. A number of curricular resources dedicated to oral health training within primary care have proliferated, many of which are highlighted in this compendium, including Smiles for Life,<sup>22</sup> resources produced by the Center for Integration of Primary Care and Oral Health,<sup>23</sup> and Oral Health Nursing Education and Practice.<sup>24</sup>

underrepresented groups. Dentistry is distinctly less representative of the nation's communities than other health professions, and pipeline programs must rectify this harmful injustice that affects both trainees and communities in need of trusted oral healthcare clinicians.<sup>29, 30</sup>

With an oral healthcare team that spans oral health and primary care clinicians and more accurately reflects the tremendous diversity of the nation, oral health care will be in reach for millions of Americans.

#### **Summary of Recommendations:**

- Incorporate oral health curricula into all health professions training programs.
- Ensure health professions trainees are taught about racial and social justice as a driver of health and oral health equity.
- Broaden scope of practice laws to allow all clinicians, including dental therapists, to deliver oral health services consistent with their full scope of practice.

#### **For Enduring Health Justice:**

- Train a primary care and oral health workforce that is inclusive, responsive to community need, and reflective of the nation's diversity.
- Develop cross-professional oral health competencies, including procedures that should be performed in the primary care setting.
- Ensure oral health care provision leverages all healthcare team members, especially front-line healthcare workers, public health providers, and community leaders.

There is a great amount of work to do. For the benefit of our patients, communities, friends, and families, it is imperative that we work toward a more equitable and accessible system of care, one in which oral health is not an afterthought, but a pillar in achieving health for all.

#### **Dental Therapists in the U.S. and Internationally**

Currently, DTs are able to practice in only 13 states; many of these states passed highly restrictive training requirements that make it very difficult for clinics to include DTs on the dental team.<sup>28</sup> There are currently only three training programs for DTs in the nation, further restricting the growth of this important role, yet multiple programs have plans to open in the next few years.

Although DTs are well-established in 53 countries outside the U.S., much DT legislation has been passed with heavy opposition from organized dentistry. Similar concerns have prevented expansion of dental hygiene scope of practice as well as the adoption of positions such as expanded-function dental assistants.

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## APPENDIX

# Creating a Shared Understanding

The bi-directional relationship between oral health and other systemic diseases provides a strong rationale for integrating oral health and primary care. Over the past decade, increasing examples of coordinated care models have emerged, connecting medical and dental health. Authors portray this bidirectional integration in many ways, yet there remain considerable confusion and lack of clarity about the key terms that are used to describe these new models. The terms *collaboration*, *co-location*, and *integration* are often used inconsistently and interchangeably to describe these varied approaches to practice.

Some authors have attempted to resolve these inconsistencies by proposing a standard framework. The purpose of the framework was to create a shared understanding and vocabulary that could foster dialogue and research. They noted that in the absence of a standardized way to categorize various implementation models, meaningful comparisons and measurement of comparable health outcomes are difficult. A common framework could also facilitate healthcare reform, providing benchmarks for health systems and clinicians who seek to change the way care is delivered through a process that allows them to evaluate the degree of integration in their practice as well as potential next steps they might take to grow integration activities. The framework could also inform policymakers and payors who depend on reliable evidence. Comparable outcomes clarify which policy decisions might support more effective access and healthcare solutions.

In the mid-90s, Doherty, et al. first suggested a continuum consisting of five levels of integration, with different types of collaboration within each level.<sup>1</sup> At the time, the model was used to describe various approaches to healthcare collaboration between behavioral health and primary care. The model explored both a clinician's or organization's capacity for integration as well as their degree of collaboration.<sup>2</sup> Rather than proposing a best practice model, the model was expected to assist organizations in evaluating the applicability of these approaches within the context of their specific goals and the outcomes and/or cost of care for different patient populations. An assumption was that as the degree of collaboration increased, the care of patients with complex physical and behavioral health needs would adapt, increasing integration as well as the system's capacity to address the physical and behavioral health needs of complex patients.<sup>3</sup> In 1998, Stosahl added a critical distinction noting that collaborative care involved behavioral health working *with* primary care, and integrated care represented behavioral health working *within* primary care.<sup>4</sup>

In 2013, the SAMHSA-HRSA Center for Integrated Health Solutions revised this earlier framework<sup>5,6</sup> by incorporating six levels of collaboration/integration. The new structure consisted of three overarching categories—collaboration, co-location, and integration, each containing two internal levels of degree. The authors further added “key elements” to help differentiate the degree of collaboration within each major category (see Table 1).

TABLE 1

COORDINATED Key Element: Communication		CO-LOCATED Key Element: Physical Proximity		INTEGRATED Key Element: Practice Change	
LEVEL 1 Minimal Collaboration	LEVEL 2 Basic Collaboration at a Distance	LEVEL 3 Basic Collaboration Onsite	LEVEL 4 Close Collaboration Onsite with Some System Integrations	LEVEL 5 Close Collaboration Approaching an Integrated Practice	LEVEL 6 Full Collaboration in a Transformed/ Merged Integrated Practice

Adapted from: Heath B, Wise Romero P, and Reynolds K. A Review and Proposed Standard Framework for Levels of Integrated Healthcare. Washington, D.C.SAMHSA-HRSA Center for Integrated Health Solutions. March 2013.

### Collaboration and Integration of Oral Health and Primary Care

This compendium distinguishes between the terms *collaboration* and *integration* consistent with previously outlined discussions. *Collaboration* is used to explain how a variety of resources such as health professionals, community health leaders, organizations, etc. are brought together. *Integration* describes how services are implemented and how practices and systems of care are structured and managed. In the case of oral health, collaborative care could involve primary care working *with* dental care. Integration represents dental care working *within* and *as part of* primary care or primary care clinicians working *within* or *as part of* dental care practice or systems. These conceptualizations are similar to those previously applied to behavioral health.<sup>7</sup> Recently, these terms have been adapted to describe a basic framework for levels of integrated medical-dental health care.<sup>8</sup> In this case, either the dental or primary care system can initiate transformation, but ultimately to reach true integration, both sides must transform to create a totally integrated care system.

A fully integrated system requires significant administrative, policy, and financial investments

that typically evolve over a long period of time based on transforming the most practical solutions first. With further advancement across the continuum, collaborative outcomes increasingly demonstrate improvements across various dimensions of care. These improvements, such as a consolidated electronic health record, should make it easier to bring separate systems together. It is noteworthy that as the complexity and degree of integration increases across the continuum, consumer care access likely becomes easier. This places the consumer’s needs and priorities closer to the center of care delivery.

The outline for this compendium was developed before the advent of COVID-19. At that time, a continuum based on a stepwise progression from collaboration to co-location to integration was considered a gold standard in transformation frameworks. However, under the specter of COVID-19, new opportunities emerged that allowed for temporary innovative workforce policies and payment programs as well as a proliferation of telehealth strategies designed to extend remote access to care. These accelerated shifts in care remodeling suggest a need to reconsider the premise that co-location is a necessary stop along a stepwise progression in the continuum of care.



While co-location can be beneficial, capitalizing on proximity to increase collaboration, innovative leaders are identifying new ways to communicate at a distance to work “with” others, extending healthcare services by meeting patients in their homes or communities through the use of technology. Whereas co-location reduced the time patients spent traveling from one clinician to another, telehealth opens the door to a new vision in which patients and various clinicians can communicate and collaborate at a distance potentially through integrated systems innovations that promote prevention, value, and population health. While we have learned from the acceleration and spread of the COVID-19 virus that we are all connected, we also must recognize that our capacity to connect is further impacted by structural barriers, including social determinants of health, which, in turn include racism and implicit bias that could easily restrict access to telehealth and perpetuate health inequities.

This compendium serves to remind us that as we emerge from the COVID-19 pandemic facing a backlog of need as well as evolving concerns of those impacted by the virus, we cannot afford to overlook the important lessons COVID-19 offers. A shared understanding of the potential value of a standard lexicon and framework may help us act quickly on select opportunities that allow us to compare outcomes and define a process that brings us closer to the patient-centered models of care outlined in the following PCC principles. The compendium highlights many different paths that lead to increased collaboration and integrated care, each designed to address specific community needs, values, and resources. Knowing the needs of a community and identifying what features of collaborative and integrated healthcare implementations lead to the best likelihood of positive and sustainable outcomes will help us grow the overall health of our population.

## Endnotes

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### About the Primary Care Collaborative

The Primary Care Collaborative (PCC) is a national multi-stakeholder organization dedicated to advancing an effective and efficient health system built on a strong foundation of primary care. Our mission is to engage and unify diverse stakeholders from the public and private sectors in support of high-performing primary care. We convene stakeholders, disseminate evidence and best practices, and connect primary care leaders and advocates. Our work is guided by the Shared Principles of Primary Care that are person- and family-centered; continuous; comprehensive and equitable; team-based and collaborative; coordinated and integrated; accessible; and high-value. We are committed to evidence-based policies and practices.



### About CareQuest Institute for Oral Health

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601 Thirteenth Street, NW  
Suite 430 North  
Washington, DC 20005