May 2018

Patient-Centered Dental Home (PCDH) Project, Phase 3-4: Scan of Quality Indicators and Development of Proposed Measure Concepts

Progress to Date

The goal of the Patient Centered Dental Home (PCDH) model development project is to build a framework that identifies a standardized definition for a PCDH model of care and connects this definition to quality indicators that can be used to measure and improve the quality of care provided. This model will be applicable at both the practice and system level (e.g., ACO, Medicaid program, or health plan).

The project is being conducted in 4 phases:

- Phase 1 (complete): **PCDH Definition**, including essential **characteristics** (e.g., accessible) (see Appendix 1 for full list)
- Phase 2 (in progress): **Components** of each essential PCDH characteristic (e.g., timely) (see Appendix 1 for full list)
- Phase 3 (in progress): **Measure concepts**[1] included in each component (e.g., percentage of population that obtains necessary dental care)
- Phase 4 (in progress): Specific **Quality Indicators,** including **Measures** and **Standards**

This report describes completed activities for Phases 3 and 4 in preparation for gathering systematic input from the National Advisory Committee. It also presents proposed modifications to the components originally identified in Phase 2 with associated rationales.

Review of Existing Quality Indicators

The goal of this phase of the project is to identify **measure concepts** within each component that would be desirable to measure in order to assess and improve the quality of care provided in a PCDH. This includes measure concepts for which there are existing specified quality indicators, and those for which specificied quality indicators do not yet exist. To identify existing measure concepts as well as measurement gaps, we conducted a review of existing quality indicators that aligned with components in the PCDH model. This included both quantitative measures as well as accreditation standards, defined as follows:

- Measures are "tools that help measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure and/or systems that are associated with the ability to provide high-quality health care."[2] They facilitate quality improvement by allowing for consistent reporting over time and include both a numerator and denominator. An example measure is the percentage of children aged 6–9 years who receive sealants on a permanent first molar.

[1] A measure concept is an "idea for a measure with a measure description and planned target population". This is distinct from a measure, which is a "fully developed metric with detailed specifications". http://www.medicaiddental.org/files/Session%204_Herndon_FINAL.pdf

[2] CMS.gov. What is a quality measure? Centers for Medicare & Medicaid Services. 2017. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/What-is-a-Quality-Measure-SubPage.html Accessed 28 Mar 2018.

- Standards are evidence of policies and procedures undertaken by organizations to meet externally-identified or internally-identified performance expectations and quality improvement goals. Evidence is identified through self-report by a provider or practice and may be in the form of clinic protocols, reports, standard operating procedures, etc. An example standard is implementation of a secure electronic system for two-way communication to provide timely clinical advice.

Approximately 500 quality indicators were identified through a scan that included a review of the following:

1. Measures from the Dental Quality Alliance (DQA) and National Quality Forum (NQF) environmental scans and websites
2. Standards from major accrediting organizations (e.g., AAAHC and NCQA)
3. Literature review of studies published after 2012 (e.g., PubMed, online search of grey literature)
4. Online search of measures used by organizations known to be involved in dental quality measurement (e.g., ACOs, Medicaid programs, practices, third-party payers)

Quality indicators were categorized by data source (e.g., survey report, administrative claims data) and level of measurement (e.g., population, plan, practice) and nested within one or multiple components in the existing PCDH framework based on conceptual fit. We then triangulaged components with existing quality measures to develop a set of measure concepts; these included measure concepts for which quality indicators already exist and those for which quality indicator development is needed.

For detailed methods about how the scan was conducted, see **Appendix 1**.

Proposed Elimination of Components Due to Conceptual Redundancy

During the measure concept development phase, we noted conceptual overlap between several components. This became clear after seeing that many quality indicators would fit within multiple components in the framework. To keep the framework as clear as possible and reduce redundancy, we propose eliminating several components from the PCDH framework because of substantial overlap between the components. Rationales and examples of conceptual overlap are provided in Table 1. Table 2 provides the resulting PCDH components after the proposed elimination of those that were deemed duplicative.

Table 1. Components proposed for elimination in PCDH framework and rationale

CHARACTERISTIC/ COMPONENT	RATIONALE
Comprehensive	
Provides primary dental treatment services	This component is covered by two other components: (1) *Prevention and wellness focused* (including measure concepts such as oral evaluation, preventive services, and risk-based treatment planning) and (2) *Follows up on needed care* (including measures such as treatment plan completion).
Coordinated	
Engaged in care management	This component is covered by *Communication across medical and dental care systems* and *Prevention and wellness focused*.
Effective use of health information technology	This component is covered under *Communication across medical/dental care systems* and *Team-based care*. Additionally, consideration was given to focusing more on the outcomes of the use of HIT (e.g., improved coordination) rather than the process.
Continuous	
Facilitates care transitions	This component is covered under *Communication across dental and medical care systems*, as well as coordinated care more broadly.
Patient- and Family-Centered	
Promotes and supports patient self-management	This concept is covered by *Prevention and wellness focused*. Specifically, oral health education would address this. Also, covered in *Provides individualized care* and added to component description to clarify.
Quality- and Safety-Focused	
Effective	This component is covered by appropriate use measures within *Provides evidence-based care*; unclear what a separate measure of "effective" would entail.
Efficient	Measures of cost are not valuable without the context of patient case mix and treatment needs. This component has low feasibility due to the need for case mix adjustment and lack of an agreed-upon and measurable definition of "value."

Table 2. Resulting overall PCDH framework after proposed elimination of redundant components

Characteristic/Component	Description
ACCESSIBLE	
Timely	Examples: short wait times for routine and specialty care; available same-day appointments for emergency care
Accommodating	Examples: appointment availability; extended clinic hours; user-friendly appointment-making
Affordable	Examples: out of pocket costs; insurance coverage; difficulty paying dental bills
Geographically accessible	Examples: travel time; travel distance; transportation resources
Adequate provider network	Examples: adequacy of the supply of clinicians, clinical facilities, providers who are accepting new patients; provides services in community-based settings for individuals with barriers to receiving care in a traditional health clinic
COMPREHENSIVE	
Prevention and wellness focused	Examples: oral health diagnostic and prevention services; risk assessment; systemic health screenings
Appropriate referrals	Uses clinical protocols to determine when a referral to a specialist is necessary
Team-based	Uses a team of providers for needed care and maintenance support, as well as to address potential barriers to oral health; care team members could include dental providers, physicians, dieticians, behavioral health providers, social workers
COORDINATED	
Communication across dental and medical care systems	Examples: effective transitions to other care team members; communication between care team members; communication between health care system components
Community-connected	Links patients to needed community and social services (e.g., schools, transportation, program eligibility)
Population health oriented	Identifies patients who would benefit from care but have not yet sought care (e.g., low-SES and other at-risk populations, patients with diabetes, smokers)
CONTINUOUS	
Follows up on needed care	Examples: treatment plan completion; recall reminders; referral outcomes
Serves as usual source of care	Having a regular dental provider of record
PATIENT- AND FAMILY-CENTERED	
Culturally competent	Demonstrates respect and accommodations for patients' unique values, preferences, and expressed needs, including language
Promotes shared decision making	Provides education, support, and resources to facilitate shared decision making between patient, family, and provider
Sensitive to health literacy	Example: materials developed at recommended literacy levels; materials provided in different formats
Effectively communicates with patients	Example: provider listening; confirming patient understanding; showing respect
Provides individualized care	Provides risk-based prevention and disease management; promotes and supports patient self-management
Provides equitable care	Care quality does not vary based on personal characteristics (e.g., age, gender, ethnicity, geographic location, social class)
QUALITY- AND SAFETY-FOCUSED	
Provides evidence-based care	Follows evidence-based clinical guidelines; performance on process of care indicators
Continuous quality improvement processes	Examples: conducts quality assessments; uses performance improvement plans and other quality improvement efforts to improve care delivery
Clinical outcomes	Monitors performance on clinical and care-related outcomes (e.g., preventable ED visits, tooth loss, functional status)
Patient-reported outcomes and patient experience indicators	Monitors performance on patient-reported outcomes, experience, and satisfaction indicators, including on components within other characteristics such as accessibility, coordination, etc.
Minimizes adverse events	Proactively monitors frequency of adverse events (e.g., wrong site or procedure, infection, nerve injury) and takes action to improve care safety

Proposed Classification of Practice-Level and System-Level Components

It is important that the PCDH model be able to be used at both the practice level and system (e.g., plan or program) level. However, we propose developing these two levels of application in separate stages as certain components lend themselves better to one level of application or another. Additionally, the measure concepts within each component may vary depending on whether it is targeting a practice or a system. Consquently, the Delphi processes will occur in two stages. First, we will ask NAC members to review measure concepts that could be used at the **practice level** and then later do a separate Delphi process for the **system level** measure concepts.

The proposed level(s) for each of the components are shown in Table 3. These levels were derived from a review of the approximately 500 measures and standards that was conducted by the research team.

Table 3. PCDH components and levels of measurement

Characteristic/Component	Level(s) of measurement
ACCESSIBLE	
Timely	Practice & System
Accommodating	Practice
Affordable	System
Geographically accessible	System
Adequate provider network	System
COMPREHENSIVE	
Prevention and wellness focused	Practice & System
Appropriate referrals	Practice & System
Team-based	Practice & System
COORDINATED	
Communication across dental and medical care systems	Practice & System
Community-connected	Practice & System
Population health oriented	Practice & System
CONTINUOUS	
Follow up on needed care	Practice & System
Usual source of care	Practice & System
PATIENT- AND FAMILY-CENTERED	
Cultural competence	Practice & System
Shared decision making	Practice & System
Sensitive to health literacy	Practice & System
Effective communication with patients	Practice & System
Individualized care	Practice & System
Equitable care	Practice & System
QUALITY- AND SAFETY-FOCUSED	
Evidence-based care	Practice & System
Continuous quality improvement processes	Practice & System
Clinical outcomes	Practice & System
Patient-reported outcomes and patient experience indicators	Practice & System
Minimizes adverse events	Practice & System

Next Steps

1. The National Advisory Committee is being asked to review and comment on the proposed revisions to the components indicated in Tables 1 and 3. **Comments from NAC members should be provided to the research team in writing by June 4, 2018 – please email comments to Pete Damaino at peter-damiano@uiowa.edu.**
2. A Delphi process with the National Advisory Committee will be conducted in summer 2018. The goal of this process is to evaluate the **importance** of **practice-level measure concepts** identified in the environmental scan. Evaluation criteria for importance includes whether the measure concept:
    - is *Actionable*
    - addresses a quality problem that is *Substantial*
    - identifies *Variation* in performance
    - is *Representative* of a class of quality problems
    - affects known *Disparities*

Appendix 1: Quality indicator review methods

Environmental Scan

We first compiled measures from environmental scans previously conducted by the Dental Quality Alliance (DQA) and the National Quality Forum (NQF), as well as standards from the major organizations that accredit or recognize practices as dental homes or patient-centered medical homes, including AAAHC and NCQA, respectively. Next, we searched for dental measures introduced or updated after the DQA and NQF environmental scans were conducted by conducting PubMed search and online searches. The PubMed searches included the following search strategies adapted from the DQA 2012 environmental scan:

1. (performance[Title/Abstract] OR process[Title/Abstract] OR outcome[Title/Abstract] OR quality[Title/Abstract]) AND measure[Title/Abstract] AND (dental[Title/Abstract] OR "oral health"[Title/Abstract])
2. (quality indicator, healthcare[MeSH Terms]) AND (dental[Title/Abstract] OR "oral health"[Title/Abstract])

Only articles published after 2012 were included to avoid duplication with the previous scan. This search resulted in a total of 661 articles for search 1 and 52 articles for search 2. After title/abstract review, 6 articles were included in the source documents for the measurement database. Measures not already identified from the DQA and NQF environmental scans were added to the database.

Online searches included health systems, organizations, ACOs, practices, third party payers, state Medicaid programs, and other groups that were known to be involved in dental quality measurement or were identified during the scan process. New measures identified were added to the database. Articles and resources identified in the PubMed and online searches are listed in **Appendix 2**. Nearly 500 indicators were identified.

Quality Indicator Review

To reduce the review burden on the NAC, the research team collaboratively reviewed the quality indicators to identify a preliminary set of PCDH measure concepts for NAC consideration. All measures that were NQF-endorsed or tested and validated were considered the highest quality; other measures that were duplicative of these were removed from consideration to avoid redundancy. Measures that received low ratings in DQA's previous Delphi process were also considered for deletion if they were rated low based on ratings of importance and validity. The following considerations were used to identify the preliminary measure concepts:

- Importance
- Feasibility
- Validity
- Reporting burden
- Duplication/overlap
- Measures vs. standards – measures given higher priority due to reporting consistency and ability to monitor improvement over time

Appendix 2: Sources Used for Review of Quality Indicators

DQA and NQF Environmental Scans

Dental Quality Alliance. Environmental Scan: Practice Based Measures. Oct 2015. https://www.ada.org/~/media/ADA/Science%20and%20Research/Files/DQA_2015_Environmental_Scan_Practice-Based_Measures.pdf?la=en

Dental Quality Alliance. Pediatric Oral Health Quality and Performance Measures: Environmental Scan. 2012. https://www.ada.org/~/media/ADA/Science%20and%20Research/Files/DQA_2012_Environmental_Scan_Pediatric_Measures.pdf?la=en

National Quality Forum. Oral Health Performance Measurement: Environmental Scan, Gap Analysis & Measure Topics Prioritization. Technical Report, July 2012. http://www.qualityforum.org/Publications/2012/07/Oral_Health_Final_Report_07062012.aspx

Standards from NCQA and AAAHC

AAHC. 2014 Accreditation Handbook for Ambulatory Health Care.

NCQA. PCMH Standards and Guidelines (2017 Edition, Version 2).

Articles identified in PubMed search

Gibson G, Jurasic MM, Wehler CJ, et al. Longitudinal outcomes of using a fluoride performance measure for adults at high risk of experiencing caries. JADA 2014;145(5):443-451.

Herndon JB, Crall JJ, Carden DL, et al. Measuring Quality: caries-related emergency department visits and follow-up among children. J Public Health Dent 2017;77:252-262.

Herndon JB, Tomar SL, Catalanotto FA, et al. Measuring quality of dental care: Caries prevention services for children. JADA 2015;146(8):581-591.

Herndon JB, Crall JJ, Aravamudhan K, et al. Developing and testing pediatric oral healthcare quality measures. J Public Health Dent 2015;75(3):191-201.

Hummel R, Bruers J, van der Galien O, et al. Outcome measures for oral health based on clinical assessments and claims data: feasibility evaluation in practice. BMC Oral Health 2017;5(17):125.

Neumann A, Kalenderian E, Ramoni R, et al. Evaluating quality of dental care among patients with diabetes. JADA 2017;148(9):634-643.

Reports and other resources identified in online search

AHRQ. National Healthcare Disparities Report 2011. Chapter 9: Access to Health Care. U.S. Department of Health and Human Services. March 2012.

AHRQ National Quality Measures Clearinghouse. U.S. Department of Health and Human Services. Available from: https://www.qualitymeasures.ahrq.gov/

Dental Quality Alliance. Program/Plan Level Dental Quality Measures. Available from: https://www.ada.org/en/science-research/dental-quality-alliance/dqa-measure-activities/measures-medicaid-and-dental-plan-assessments

Dental Quality Alliance. Measures: Practice Assessments. Available from: https://www.ada.org/en/science-research/dental-quality-alliance/dqa-measure-activities/measures-practice-assessments

Healthy People 2020 Topics and Objectives: Access to Health Services. U.S. Department of Health and Human Services. Available from: https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services/objectives

National Network for Oral Health Access. Health Center Dental Dashboard User's Guide: A Tool for High Performing Health Centers. 2017. Available from: http://www.nnoha.org/resources/dental-dashboard-information/users-guide/

Oregon Health Authority. Oral Health in Oregon's CCOs: A metrics report. March 2017. Available from: http://www.oregon.gov/oha/HPA/ANALYTICS/Documents/oral-health-ccos.pdf

Ruff JC, Herndon JB, Horton RA, et al. Developing a caries risk registry to support caries risk assessment and management for children: A quality improvement initiative. J Public Health Dent 2017 Oct 27. doi: 10.1111/jphd.12253. [Epub ahead of print].

Snyder J, Permanente Dental Associates. Quality measurement Models. Presentation to Dental Quality Alliance Conference. May 2, 2015.

Texas Health and Human Services. Texas Medicaid and CHIP Uniform Managed Care Manual. Available from: https://hhs.texas.gov/services/health/medicaid-chip/provider-information/contracts-manuals/texas-medicaid-chip-uniform-managed-care-manual