



**COLORADO**  
Department of Public  
Health & Environment

To: Members of the Colorado State Board of Health

From: Stephen Holloway, MPH  
Branch Director, Health Access and  
Director, Primary Care Office

Through: Carrie Cortiglio, MPH  
Prevention Services Division Director

Date: July 17, 2024

Subject: Proposed amendments concerning 6 CCR 1015-6, State-Designated Health  
Professional Shortage Area Designation

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The Primary Care Office (PCO) in the Prevention Services Division of the Department of Public Health and Environment proposes amendments to Rule 6 CCR 1015-6 as outlined in this briefing. These amendments aim to add a methodology for identifying State-Designated Health Professional Shortage Areas (HPSA), specifically related to the assessment of the oral health workforce. This rulemaking is authorized by section 25-1.5-404(1)(a) C.R.S, enacted through Senate Bill 18-024, titled "Expand Access to Behavioral Health Care Providers."

Enactment of amended rules is requested because the PCO seeks to further elucidate access to care needs for oral health at the community level, which will support implementation of Colorado Health Service Corps, section 25-1.5-501 *et seq.*, C.R.S., and the Loan Repayment Program for Dental Professionals at 6 CCR 1015-7.

Colorado faces significant disparities in oral health outcomes, primarily due to unequal access to oral health interventions. Factors like economic instability, education, insurance coverage, and the cost of care all play roles in creating these disparities, with rural and frontier areas facing additional challenges associated with geographic isolation. The urgency for addressing these issues has become more evident, as some have lost Medicaid coverage following the end of the COVID-19 public health emergency declaration. Additionally, early indications strongly suggest a rise in oral health concerns, notably among children, following the pandemic.

To respond to the oral health crisis, enhanced assessment of oral health and low-income patient experience is imperative. Given that access to oral health services largely relates to the local availability of dentists, the PCO seeks to better describe regional and discrete variation in access to oral care, particularly for low wage-earning and publicly insured people.

These rule amendments are important for ensuring the efficient allocation of state oral health workforce investments, including the Colorado Health Service Corps (CHSC) and the Loan Repayment Program for Dental Professionals (DLRP). Existing alternatives to the state-designated HPSA framework fall short in accurately assessing specific clinician shortages in oral health and localizing these shortages effectively. If current state rules are not amended, available state resources intended to improve access to oral health care may not be as efficiently targeted or could be reverted to the state treasury.

**STATEMENT OF BASIS AND PURPOSE  
AND SPECIFIC STATUTORY AUTHORITY  
for Amendments to  
6 CCR 1015-6, State-Designation Health Professional Shortage Area Designation**

**Basis and Purpose.**

**Background**

The Primary Care Office (PCO) in the Prevention Services Division (PSD) administers the Colorado Health Service Corps (CHSC) and the Loan Repayment Program for Dental Professionals (DLRP). The CHSC promotes improved primary, oral, and behavioral health care access in underserved Colorado communities. The DLRP promotes the uptake of patients insured by Medicaid among private dentists and other oral health safety-net providers. The objectives of these two programs are achieved by reducing education loan debt for health professionals in exchange for a period of contracted service in a designated health professional shortage area (HPSA).

CHSC clinicians are typically obligated to three years of service in a practice that accepts Medicaid, Medicare, the Child Health Plan+, and uninsured patients on a sliding fee scale. The practice must also be located in an HPSA, determined by an assessment conducted by the PCO according to federal methodologies.

DLRP clinicians are typically obligated to two years of service in a practice that accepts Medicaid. **Application preference** is given to those practices that also accept Medicare, the Child Health Plan+, and uninsured patients on a sliding fee scale. The contracted clinician must agree to provide care to a minimum number of uninsured patients per month.

Existing state methodologies for dentist workforce **shortage** analysis are set forth in federal regulations. The requested amendments described in this brief propose to implement a state methodology to better assess dentist capacity at the community level.

**Legislative Background**

Authority for state HPSA designation was created in 2018 by the passage of Senate Bill 18-024. This legislation expanded the scope of the CHSC to include clinicians and facilities that provide treatment for substance use disorder (SUD) and increased appropriations to the program for SUD clinicians. Though this legislation emphasized **the** behavioral health care workforce, the changes to the statute regarding state HPSA were intentionally drafted to be **permissive** of primary care, oral health, and potentially other designations **like pregnancy related workforce, for example**.

The authority for the PCO to administer state shortage designation rules is important because current federal shortage designation methods do not adequately inform the eligibility and prioritization of CHSC contracts to areas of highest oral health workforce needs. Federal methodologies were first created in 1970 and later revised in 1976. Since that time, little has changed about the oral health workforce assessment model yet oral health care service delivery and oral health care service utilization have changed significantly. The creation of a

state methodology for dentist workforce assessment will overcome deficiencies in the federal model.

### **Proposed Amended Rules**

The PCO proposes promulgation of amended rules that add a methodology for State-Designated HPSA for the dentist workforce. The shortage designation analysis and process, as described in the proposed amended rule, will produce detailed quantitative information regarding local shortages of dentists who provide general and preventive oral health care services.

Once the amended rule for dentist HPSA is effective, more than \$800,000 in state, federal, and private funds will be distributed annually in the form of educational loan repayment to oral health clinicians who provide oral health care services in state-designated HPSAs.

### **Description of the Methodology**

#### *Population*

The population analyzed includes all residents<sup>1</sup> of Colorado who are not part of a group quarter, such as a military base or correctional facility. The total Colorado population applied to analysis for all ages (civilian non-institutionalized) is 5,723,176.

Group quarter populations are excluded from the analysis because oral health services are provided within closed health care delivery systems designed specifically for those populations. The assumption is that the interaction of oral health services supply and demand between group quarter and non-group quarter populations within the same service area is minimal.

#### *Estimating Demand for Dental Visits*

The standard patient encounter benchmark for oral health services was determined by stakeholder consensus to be two visits per year. While literature on the minimum requirements for adequate oral health treatment for the general population is limited, dental insurance plans typically cover up to two preventive dental visits per plan year.

#### *Estimating Supply of Dental Visits*

A table of dentists who are licensed in Colorado and have evidence of recent clinical practice in Colorado was downloaded from the Colorado Health Systems Directory.<sup>2</sup> The table consisted of the name, license, and practice location(s) of each dentist.

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<sup>1</sup> Where individuals live and sleep most of the time. The resident population excludes people whose usual residence is outside of the United States, such as the military and federal civilian personnel living overseas, as well as private U.S. citizens living overseas.

<sup>2</sup> The Colorado Health Systems Directory is a work product of the PCO, which provides a comprehensive database of all licensed clinicians and health care sites in Colorado. The database aggregates information from multiple data sources, matches records from those sources, standardizes information contained within those sources, and applies a probabilistic algorithm to determine current practice information for clinicians at the date of query.

Dentists in the report were surveyed directly to determine oral health care service capacity for each dentist. Non-responders to the survey were assigned productivity rates of responding clinicians according to professional discipline and geographic area.

Using the surveyed and estimated treatment encounter supply for each clinician type, an aggregate treatment encounter supply was created for each census block group. This was performed by summing the total estimated encounters by clinician for all dentists with a practice address in the block group.

### *Estimating the Spatial Relationship of Supply and Demand for Dental Care*

The relationship of demand and supply for dental care encounters was evaluated at the service area level. A service area is defined as a discrete geographic area where a preponderance of the civilian noninstitutionalized population within the service area could reasonably expect to access dental services within the service area, when it is adequately resourced. All dentists within the service area are presumed to be generally accessible and similarly proximate to the residents of the service area. Dental service locations that lie outside of the service area are assumed to be generally inaccessible by distance for the purposes of analysis.

To estimate the availability of oral health treatment resources within each block group, considering the demand for and supply of dental encounters within the service area the Variable Two-step Floating Catchment Area (V2SFCA) method developed by Wei Luo and Tara Whippo was applied (Luo and Whippo, 2012). The V2SFCA method was selected because spatial accessibility of treatment for dental care is not defined by the boundaries of a block group or any other census or political subdivision. This is because patients can easily move across most civil boundaries to access health services.

The application of the V2SFCA began with representing the mean population center as a travel centroid<sup>3</sup> for each block group. The boundaries of each catchment area are then calculated by determining the total population within each provider location's catchment area. If the base population threshold is not met within 20 minutes travel time (derived from ArcGIS Pro®, Version 2.6.3 © 2020 Esri), the catchment area is expanded to 40 minutes travel time. If the base population threshold is not met at 40 minutes travel time, the catchment area is expanded to 60 minutes. If the threshold is not reached within a 60-minute travel distance, no further expansion is performed. The ratio of encounter supply to encounter demand is then calculated for each catchment area according to the following formula.

$$(\text{encounter supply}/\text{encounter demand}) * \text{distance decay function weight}$$

Once the catchment area was defined by the travel polygon,<sup>4</sup> the sum of predicted demand for dental encounters and the sum of predicted supply of dental encounters for each block group within the boundaries of the catchment area was calculated.

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<sup>3</sup> A travel centroid is the geometric center of a group of points within a geographic shape (e.g., Census block group) where the center point generally falls within the shape.

<sup>4</sup> A closed, irregular geometric shape on a map surface that defines equivalent road travel distances from a central point within the shape.

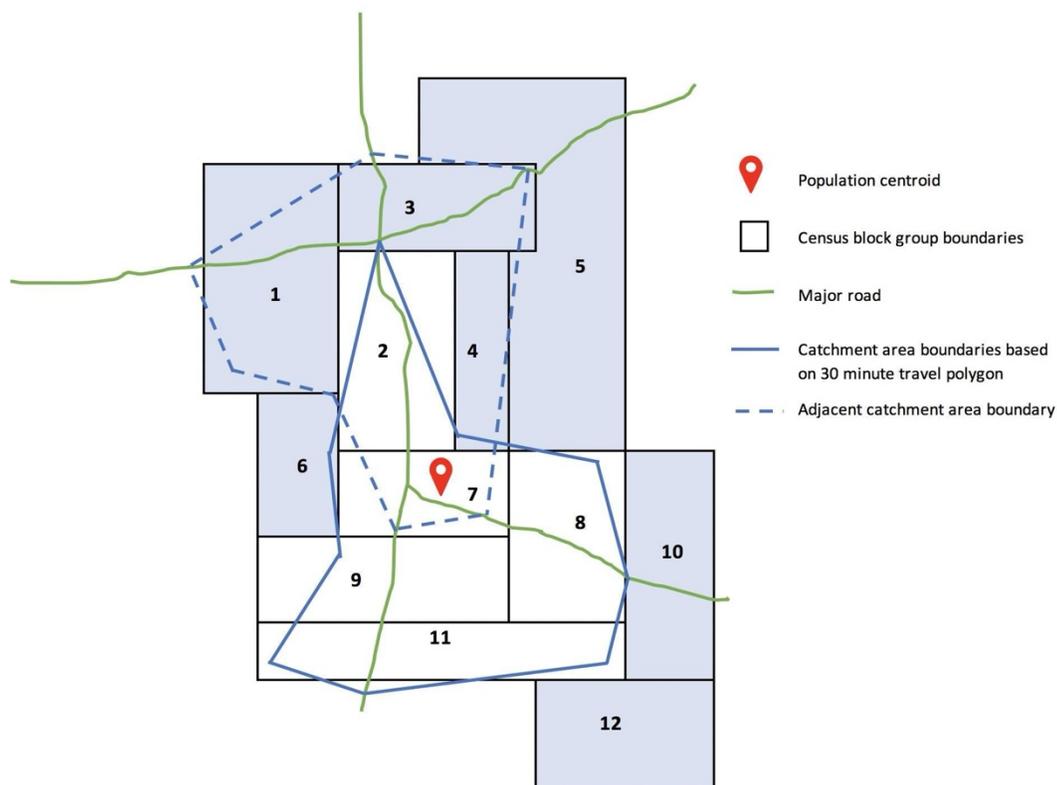
Figure 1: Hypothetical Catchment Area Map with Travel Polygon



In the example represented in Figure 1, estimated dental encounter demand from block group 1, 2, 3, 4, and 7 would be summed to estimate total encounter demand in the catchment area. Similarly, estimated dental encounter supply from block group 1, 2, 3, 4, and 7 would be summed to estimate total encounter supply in the catchment area. A ratio of encounter supply to encounter demand for the catchment area is then derived for each census block group.

In the example represented in Figure 2, estimated dental encounter demand from block group 2, 7, 8, 9, and 11 would be summed to estimate total encounter demand in the catchment area and the encounter supply from the same block groups would be summed to estimate total encounter supply in the catchment area.

Figure 2: Hypothetical Catchment Area Map with Travel Polygon



The catchment area definition process and demand supply computation are repeated for each block group in the state. As expected under the V2SFCA model, adjacent block groups of relatively small geographies tended to create overlapping or “floating” catchment areas. In these two hypothetical examples block group 2 and block group 7 are included in both hypothetical catchment area constructions.

#### *Calculating the Ratio of Supply and Demand for Dental Care and Stratifying Shortage*

The ratio of demand to supply was calculated for all 4,058 census block group catchment areas in Colorado. The resultant ratio of encounter demand to supply was then binned into ten deciles. Those catchment areas where the ratio fell below two dental encounters per person is deemed to be a HPSA for dentists.

#### *Limitations*

1. This analysis relies on 2020 Census data which, according to the U.S. Census Bureau’s 2020 Post-Enumeration Survey Estimation report, increased miscounts for some demographic groups and households for 14 states. The census errors represent statistically significant over counts in White, Non-Hispanic, and Asian populations and statistically significant under counts of Black, Hispanic, and American Indian populations nationwide. While the quality of the total count remained stable across census years, the measures of census errors were higher in 2020. Colorado was not included as a state in the over/under count for households; therefore, the potential impact of the lower quality 2020 Census data on this designation methodology in Colorado may have been negligible.

2. Population estimates at the census block group level tend to have a higher error rate compared to larger census geographies like census tracts or metropolitan statistical areas. While utilizing block groups enhances discrete area analysis, it may also introduce more error. However, the overlapping nature of the floating catchment area analysis is likely to mitigate the overall impact of individual block group population error rates.
3. The characteristics of responders and non-responders are not assumed to be comparable. The individual provider encounter capacity of survey non-responders was derived by a statistical method, which applies a diminishing rate of patient care productivity along a trend line established in the analysis of first, second, and third survey wave survey responses. This method provides a plausible estimate of productivity for clinicians who are unwilling or unable to respond to PCO requests for practice information.

#### *Application to Colorado Health Service Corps Program*

Shortage designation determines which geographic areas of the state experience a shortage of health care professional capacity relative to the needs of the population. Independent of this rule, the CHSC also assesses individual clinical locations to determine eligibility of participation in the CHSC program. Criteria used to determine eligibility include that the practice accepts all patients regardless of ability to pay, has an established nondiscrimination policy, accepts Medicaid, Medicare, and the Child Health Plan+, and offers a range of primary, oral and/or behavioral health care services.

Individual clinician participants in the CHSC must apply to the program to participate. Clinicians are selected for personal attributes that indicate a higher likelihood of long-term retention in practice in the shortage area once the service obligation to the state is concluded. Attributes of “retainability” include training specific to rural or underserved practice, personal commitment to the needs of the underserved, personal experience of being underserved, graduation from a Colorado based education program, and ability to deliver clinical services in a language other than English.

#### *Application to the Dental Loan Repayment Program*

While shortage designation is not a prerequisite of eligibility or participation in the DLRP, the legislative declaration indicates that program administrators should prioritize underserved regions of the state. The updated assessment model will guide future policy revisions in the DLRP to ensure more impactful allocation of contracts to areas of the state with the greatest need.

## Supplemental Information

### Draft Model Results: State-Designated Dentist Health Professional Shortage Areas

The figures on the following two pages present test results of the methodology proposed in this amended rule. Further data collection may revise these results upon implementation of the amended rule, if adopted.

Each of the ten colors in the legend represents a decile (10%) of the state's census block group, representing approximately 10% of the non-group quartered population. For instance, the grey areas (10th decile) on the map encompass about one-tenth of the state population, despite covering roughly 85% of the geographic land area. Conversely, the navy-blue areas, though geographically covering the smallest land area, also represent 10% of the state's population.

Each decile corresponds to a range of dental care visit capacity per person per year. In the grey communities, there are between 0 and 0.24 dental visits available within a 60-minute travel radius, as measured from the population centroid of any given census block group in those areas.

A dental care visit capacity of 0.24 is about 12% of the optimal care capacity of two visits per person per year for the general population, as established through the stakeholder engagement process. Thus, communities in the 10th decile (grey) have the highest relative need for additional dentists and are also 87% below optimal dentist capacity in absolute terms of shortage. At the other end of the spectrum, communities represented by navy blue have care capacity that is between 1.35 and 1.93 dental care visits per person per year. Thus, only those communities in the 1st decile (navy-blue) approach optimal care capacity for all non-group quartered residents.

Although no region of the state achieves optimal capacity, the range of workforce distribution depicted by this map provides valuable insight into which communities should be prioritized for state investment or intervention.

Figure 1: Draft State-Designated Dental Care Health Professional Shortage Areas

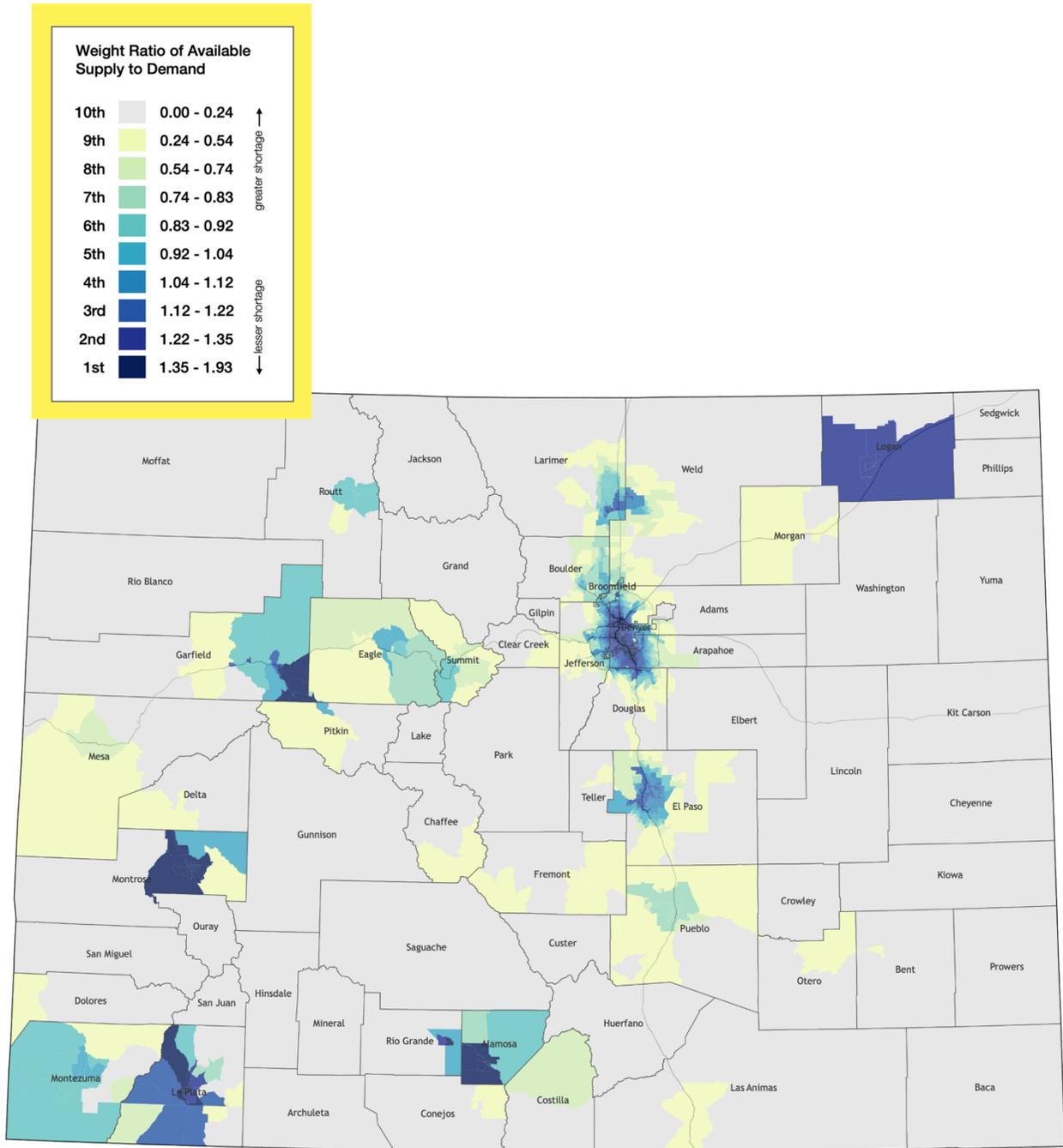
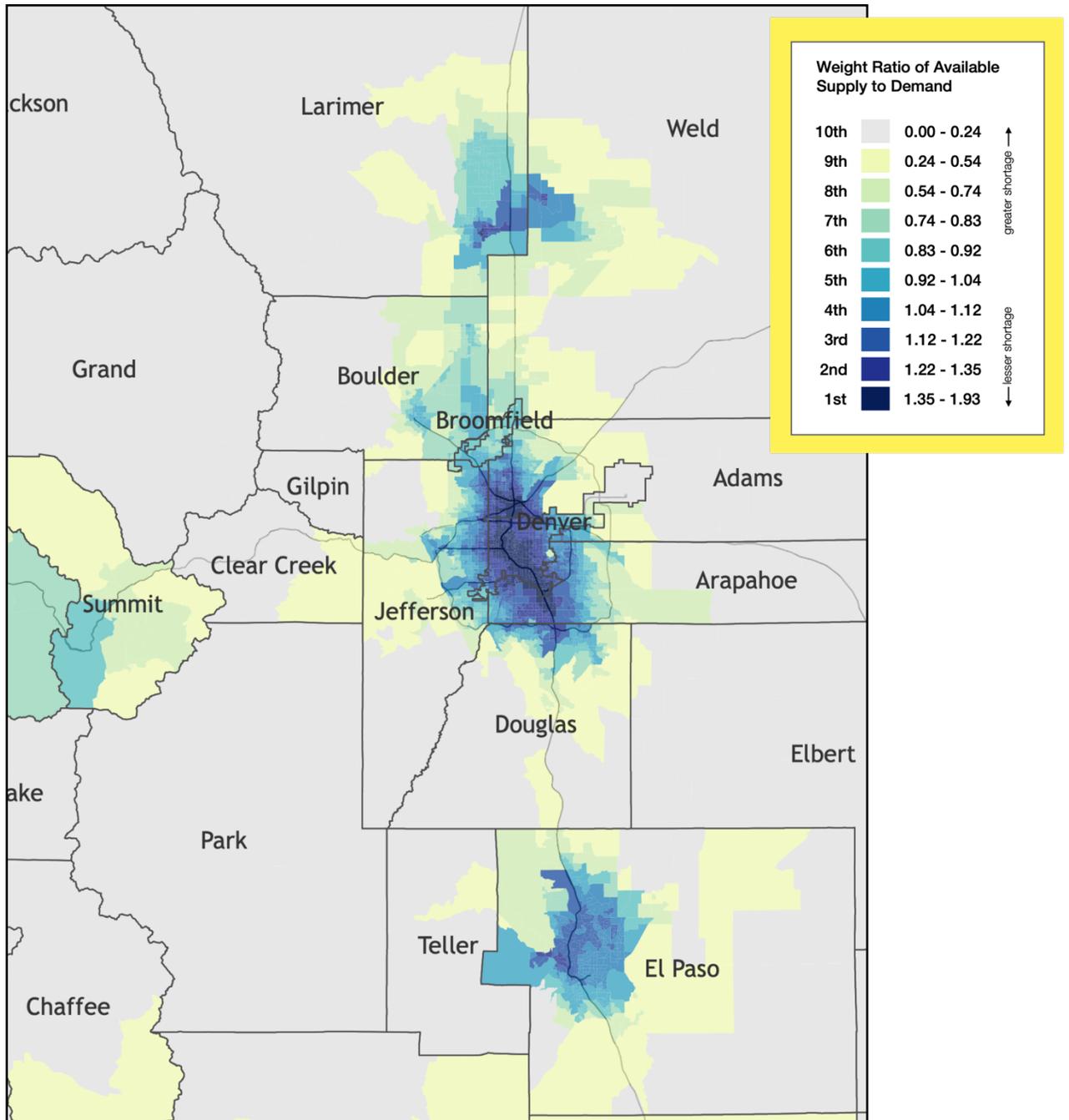


Figure 2: Draft State-Designated Dental Care Health Professional Shortage Areas, Front Range Detail



**Additional Technical Edits**

The Primary Care Office proposes striking definitions 18 (State Designated Substance Use Disorder Health Professional Shortage Area) and 19 (substance use disorder) as they were related to a previous rule version and are no longer relevant within the behavioral health assessment section.

**Specific Statutory Authority.**

These rules are proposed pursuant to Section 25-1.5-404, C.R.S. and Section 25-1.5-501 *et seq.*, C.R.S.

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**Is this rulemaking due to a change in state statute?**

Yes, the bill number is \_\_\_\_\_. Rules are \_\_\_ authorized \_\_\_ required.  
 No

**Does this rulemaking include proposed rule language that incorporate materials by reference?**

Yes \_\_\_\_\_ URL  
 No

**Does this rulemaking include proposed rule language to create or modify fines or fees?**

Yes  
 No

**Does the proposed rule language create (or increase) a state mandate on local government?**

No

- The proposed rule does not require a local government to perform or increase a specific activity for which the local government will not be reimbursed;
- The proposed rule requires a local government to perform or increase a specific activity because the local government has opted to perform an activity, or;
- The proposed rule reduces or eliminates a state mandate on local government.

**REGULATORY ANALYSIS**  
**for Amendments to**  
**6 CCR 1015-6, State-Designation Health Professional Shortage Area Designation**

1. A description of the classes of persons affected by the proposed rule, including the classes that will bear the costs and the classes that will benefit from the proposed rule.

While all are stakeholders, groups of persons/entities connect to the rule and the problem being solved by the rule in different ways. To better understand those different relationships, please use this relationship categorization key:

- C** = individuals/entities that implement or apply the rule.
- S** = individuals/entities that do not implement or apply the rule but are interested in others applying the rule.
- B** = the individuals that are ultimately served, including the customers of our customers. These individuals may benefit, be harmed by or be at-risk because of the standard communicated in the rule or the manner in which the rule is implemented.

More than one category may be appropriate for some stakeholders.

This rule is not expected to harm any individual or group, and no individual person or private sector entity will directly bear the costs of implementation and maintenance. The costs associated with implementing this rule will be funded by existing state appropriations from the General Fund, revenue from retail marijuana taxes, and the Master Tobacco Settlement Agreement.

Other classes of or persons affected by this proposed rule amendment include:

- |                      |   |
|----------------------|---|
| Primary Care Office: | Implementation of this rule.  |
| Relationship:        | C   |
| Size:                | 4 staff are assigned to various aspects of designation analysis.  |
| Clinic Employers:    | Safety net clinic entities that employ oral health clinicians may benefit from this rule in that their provider recruitment and retention costs will be reduced when clinicians receive incentives to practice in State-Designated Health Professional Shortage Areas (sHPSA) where their agencies are located. In excess of 134 health care sites could conceivably receive some direct or indirect benefit of the shortage designation process. |
| Relationship:        | B   |
| Size:                | 134 oral health clinic sites  |
| Colorado residents:  | Because the need for oral health care services is universal, nearly all residents of communities with insufficient oral health care clinician capacity may benefit from this shortage designation analysis.   |
| Relationship:        | B   |
| Size:                | Estimated to exceed 900,000 persons in Colorado.  |

Health Equity Orgs.: Organizations that promote improved access to health services for medically underserved communities and people may benefit from the assessment of need and the promotion of improved access for underserved people. Other state agencies and local governments may also benefit if Colorado is better able to address oral health care access needs. Perhaps 80 organizations, advocacy groups and other governmental entities may benefit from this rule in this way.

Relationship: S

Size: Approximately 80 public and nongovernmental entities

**2. To the extent practicable, a description of the probable quantitative and qualitative impact of the proposed rule, economic or otherwise, upon affected classes of persons.**

Organizations employing oral health clinicians in HPSA may experience lower costs for recruiting and retaining oral health clinical providers. While the exact impact is **undetermined**, it could be significant when considering all eligible oral health safety net clinic sites in Colorado. This proposed rule is not expected to have any adverse effects on these organizations.

People who require oral health care and live far from oral health care facilities may benefit from clinicians being recruited to underserved areas more proximate to their place of residence. This recruitment effect shortens travel time and distance, reducing absence from work and/or school and reducing costs associated with transportation. These savings effects are more beneficial to those who are also must underserved **because** of financial barriers to care.

There are no foreseen impacts on local governments due to the promulgation of these rules.

Economic outcomes

Summarize the financial costs and benefits, include a description of costs that must be incurred, costs that may be incurred, any Department measures taken to reduce or eliminate these costs, any financial benefits.

Anticipated Costs:	Anticipated Benefits:
Clinic Employers (B)	<p>Recruiting oral health care professionals to underserved communities in Colorado can be costly (some dentist positions in difficult to recruit to areas of Colorado may require more than \$120,000 to place). Many clinicians in the Colorado Health Service Corps (CHSC) note in exit surveys that education loan repayment significantly influenced their choice of practice location. Employers currently in the CHSC program emphasize that loan repayment plays a crucial role in their recruitment and retention strategies.</p> <p>A second order effect of state administered practice incentives may lower overall employer retention costs. This is true even for those clinicians who do not ultimately receive a CHSC award but were motivated to apply for qualified employment for the prospect of educational loan repayment.</p>
Clinic Employers (B)	<p>If employer recruitment costs are reduced by a conservative \$10,000 per CHSC applicant for oral health clinician types eligible for CHSC, the aggregate annual employer savings could exceed \$1,000,000. These savings are estimated according to the following:</p> <ul style="list-style-type: none"><li>• Employers recruit oral health professionals in advance of the clinicians' CHSC application.</li><li>• Recruitment and retention cost savings accrue to employers when clinicians choose to work at eligible practice sites for the prospect of receiving a loan repayment benefit, regardless of whether individual clinicians receive a CHSC award.</li><li>• The CHSC program typically receives three applications for each available award.</li><li>• If 104 CHSC oral health clinician applications are received in year one and safety-net employers experience a modest \$10,000 per applicant reduction in recruitment costs per applicant, then aggregate recruitment cost savings per year experienced by all safety-net employers will be approximately \$1,040,000 (104 x 10,000).</li></ul>

Clinic Employers (B)	Health systems capacity development in underserved communities brings about positive secondary economic benefits. For instance, the addition of clinicians in a specific oral health service area creates multiple clinical (dental assistants and hygienists) and non-clinical jobs (practice administrators and environmental service providers). Communities also profit when economic activity linked to or incidental to health care spending (e.g., retail purchasing and service activities) takes place within the vicinity, rather than in adjacent areas where access to care might be displaced to because oral health care is more readily available.
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**Non-economic outcomes**

Summarize the anticipated favorable and non-favorable non-economic outcomes (short-term and long-term), and, if known, the likelihood of the outcomes for each affected class of persons by the relationship category.

**Favorable non-economic outcomes:** For individuals who are publicly insured, treatment participation may increase thus increasing the demand for public financing of care; however, it is anticipated that these initial increased costs of care will be offset by averted and prevented future oral health care costs.

The CHSC and this rule may enhance resource allocation and policy attention of organizations that promote better access to oral health services for medically underserved populations, nongovernmental organizations that advocate for the needs of underserved populations, and support other state agencies and local governments.

**Unfavorable non-economic outcomes:** None are anticipated.

**3. The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.**

**A. Anticipated CDPHE personal services, operating costs or other expenditures:**

Type of Expenditure	Year 1	Year 2
Personnel Time	\$ 10,576	\$ 10,576
Data collection, analysis & systems database	\$ 4,000	\$ 4,000
<b>Total</b>	<b>\$ 14,575</b>	<b>\$ 14,576</b>

Costs are incorporated into other program expenses and can be effectively managed within the existing resources allocated for this purpose.

**Anticipated CDPHE Revenues:**

None

**B. Anticipated personal services, operating costs or other expenditures by another state agency:**

None

**Anticipated Revenues for another state agency:**

None

**4. A comparison of the probable costs and benefits of the proposed rule to the probable costs and benefits of inaction.**

Along with the costs and benefits discussed above, the proposed revisions:

- Comply with a statutory mandate to promulgate rules.
- Comply with federal or state statutory mandates, federal or state regulations, and department funding obligations.
- Maintain alignment with other states or national standards.
- Implement a Regulatory Efficiency Review (rule review) result
- Improve public and environmental health practice.
- Implement stakeholder feedback.

Advance the following CDPHE Strategic Plan priorities (select all that apply):

- |  |
|--|
| <ul style="list-style-type: none"><li><input type="checkbox"/> Goal 1, Implement public health and environmental priorities</li><li><input type="checkbox"/> Goal 2, Increase Efficiency, Effectiveness and Elegance</li><li><input type="checkbox"/> Goal 3, Improve Employee Engagement</li><li><input checked="" type="checkbox"/> Goal 4, Promote health equity and environmental justice</li><li><input type="checkbox"/> Goal 5, Prepare and respond to emerging issues, and</li><li><input type="checkbox"/> Comply with statutory mandates and funding obligations</li></ul> |
|--|

**Strategies to support these goals:**

- Substance Abuse (Goal 1)
- Mental Health (Goal 1, 2, 3 and 4)
- Obesity (Goal 1)
- Immunization (Goal 1)
- Air Quality (Goal 1)
- Water Quality (Goal 1)
- Data collection and dissemination (Goal 1, 2, 3, 4, 5)
- Implement quality improvement/a quality improvement project (Goal 1, 2, 3, 5)
- Employee Engagement (Goal 1, 2, 3)
- Decisions incorporate health equity and environmental justice (Goal 1, 3, 4)

- \_\_\_ Detect, prepare and respond to emerging issues (Goal 1, 2, 3, 4, 5)
- \_\_\_ Advance CDPHE Division-level strategic priorities.

**The costs and benefits of the proposed rule will not be incurred if inaction was chosen. Costs and benefits of inaction not previously discussed include:**

None

**5. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.**

Rulemaking is proposed as the least costly and only statutorily allowable means to fulfill the purpose of assessing dentist health professional shortage analysis, without undue intrusiveness to affected individuals or groups. The specific revisions proposed in this rulemaking were developed in conjunction with stakeholders. Costs for implementing this are borne by existing state appropriation to the PCO for managing state health professional shortage area designations and related health professional practice incentives. These proposed rules offer maximum benefit at minimal cost, ensuring compliance with statutory requirements.

**6. Alternative Rules or Alternatives to Rulemaking Considered and Why Rejected.**

This existing rule is the only logical regulatory architecture for implementation of dentist health workforce needs assessment; therefore, there are no better alternatives to rulemaking to fulfill this purpose. This position was reached with the full participation and input of an extensive stakeholder engagement process, as described in the Stakeholder Engagement Section. There were no alternative viewpoints or dissenting opinions expressed by stakeholders during the engagement period regarding the promulgation of these rule amendments.

**7. To the extent practicable, a quantification of the data used in the analysis; the analysis must take into account both short-term and long-term consequences.**

Proposed amended rules will apply a “modified two-step floating catchment area” method first proposed by Luo and Wang in 2003 (*Measures of Spatial Accessibility to Health Care in a GIS Environment: Synthesis and a Case Study in the Chicago Region. Environment and Planning B: Planning and Design, 30, 865-884.*)

Instruments that were applied in the test analysis included:

- ArcGIS Pro®, Version 2.6.3 © 2020 Esri
- Microsoft® Excel, Version 16.0.5443.1000. © 2016 Microsoft
- Qualtrics®, subscription data collection software, © 2019 Qualtrics

These instruments may be replaced with similar tools in implementation of the final rule and future shortage assessments.

Data sources that inform test determinations of state-designated Dentist Health Professional Shortage Areas include:

- Dentist Provider Locations and Encounters, State of Colorado, March 2024, Colorado Health Systems Directory, Version 3.0. Primary Care Office, Colorado Department of Public Health and Environment
- U.S. Census Bureau, American FactFinder; American Community Survey, 2015-2019 5-year estimates, Table B21001
- Survey findings of the PCO derived from approximately 740 solicited responses of licensed dentists in the state of Colorado.

These sources may be replaced by better quality analogous data sets as they become available in implementation of the final rule and future shortage assessments.

**STAKEHOLDER ENGAGEMENT**  
**for Amendments to**  
**6 CCR 1015-6, State-Designation Health Professional Shortage Area Designation**

State law requires agencies to establish a representative group of participants when considering to adopt or modify new and existing rules. This is commonly referred to as a stakeholder group.

**Early Stakeholder Engagement**

The following individuals and/or entities were invited to provide input and included in the development of these proposed rules:

**State Dental & Dental Hygiene Associations**

<b>Organization</b>	<b>Representative Name and Title (if known)</b>
Colorado Dental Association (CDA)	Molly Pereira, Executive Director and CEO; Leah Schulz, DDS, President
Colorado Dental Hygienists' Association (CODHA)	Alyssa Aberle, RDH, Executive Director; Courtney Justice, RDH, President

**State Government**

<b>Organization</b>	<b>Representative Name and Title (if known)</b>
CDPHE Health Access Branch (HAB)	Steve Holloway, MPH, Branch Director; Tamara Davis, PCO & CHSD Manager Holly Mask, MPH, HPSA Analyst; Ashleigh Kirk, MSW, OHU Manager; Maryam Mahmood, DMD, MPH, State Dental Director; Leila Diab, MPH, Oral Health Workforce Coordinator; Jenni Lansing, RDH, Oral Public Health Preventionist
Colorado Department of Health Care Policy & Financing (HCPF)	Ivy Beville, RDH, Medicaid Dental Specialist; Yvonne Castillo, Dental Plan Contract Manager
School Based Health Centers (SBHC)	Michelle Shultz, Program Manager; Kristina Green, Project Manager; Liz Atwood, SBIRT Project Coordinator; Angela Oh, Program Coordinator

### Regional Oral Health Specialists

Organization	Representative Name and Title (if known)
Chaffee County Public Health	Andrea Carlstrom, Director; Julie Nutter, RDH, Oral Health Program Director
Garfield County Public Health	Carrie Godes, Dental Program Manager
Community Health Services, Inc.	Logan Hood, Executive Director; Lisa Westhoff, RDH, MSDH, Regional Oral Health Specialist
Northeast Colorado Health Department	Talya Honstead, Health Promotion and Prevention Manager; Michelle Huell, Regional Oral Health Specialist
San Juan Basin Public Health	Tiffani Roberts, Clinic Manager and ROHS program manager; Courtney Justice, Regional Oral Health Specialist

### State Primary Care Association

Organization	Representative Name and Title (if known)
Colorado Community Health Network (CCHN)	Holly Kingsbury, MPH, Quality Initiatives Division Director; Alexis Miller, MPH, Quality Initiatives Specialist; Suzanne Smith, Health Center Operations Division Director

### External Partners

Organization	Representative Name and Title (if known)
Colorado Rural Health Center (CRHC)	Sara Leahy, Director of Member Services; Michelle Mills, CEO; Emery Shekiro, MPH, Population Health Epidemiologist
Colorado Area Health Education Center (COAHEC)	Josina Romero O’Connell, MD, Director
Colorado Health Institute (CHI)	Sarah Schmitt, President and CEO; Karam Ahmad, MPH, Director; Lindsey Whittington, MPH, Data and Analysis Manager
Delta Dental of Colorado Foundation (DDCOF)	DJ Close, Executive Director; Mara Holiday, Senior Program Officer, Early Childhood and Prevention; Carla Castillo, Senior Program Officer
Caring for Colorado	Megan Wilson, VP of Operations; Linda Reiner, MPH, President and CEO

### Clinician Stakeholder Engagement

<b>Organization</b>	<b>Representative Name and Title (if known)</b>
Cavity Free at Three Master Trainers	Karen Wells, Renee Hall, Valerie Haustein, Heather Schnorr, Brittany Williams, Denise Ogden, Carol Rykiel, Kristine Gatdula, Rita Orhdorf, Nick Miner, Maria Mattias, Christine Finn
School Based Health Center Clinicians	Haidith Ramirez-Leon, Sarah Jones, Merry Hummell, Ashley Coram, Enas Al Sharea, Megan Jackson, Amber Clark, Danielle Ford, Sonya Chavez, Libby Goode-Grasmick, Kristy Schmidt, Diana Flinn
Project Worthmore	Carolyn Anello, Clinical Program Director
Health District of Northern Larimer County	Justyna Aspiazu, DDS, Dentist
Family and Kids Dental, PC	Rodrell Brown, DDS, Dentist
Colorado Health Network/Howard Dental	Jeffrey De Guzman, DDS, Dentist; Symone Webley, DDS, Dentist
Pediatric Dental Group of Colorado	Ann Hoang, DMD, Dentist
Open and Affordable Dental (Loveland)	Simone Leonard, DDS, Dentist
Dental Aid	Jose Mena, DDS, Dental Director
Lakeside Kids Dentistry	Shaheen Moezzi, DDS, Dentist
The Partners in Integrated Care (PIC) Place	Rahul Salunke, DDS, Dentist
Kids in Need of Dentistry (KIND)	Ellie Burbee, Executive Director; Amy Maurer, Operations Manager; Erin Metz, RDH, Director of Strategic Development; Lisa Valdez, RDH, Director of Dental Hygiene Programs
Denver Health	Patty Braun, MD, MPH, Pediatrician
Great Dental	Jessica Jensen, RDH, Dental Hygienist

#### **DDS Faculty/Education**

<b>Organization</b>	<b>Representative Name and Title (if known)</b>
University of Colorado School of Dental Medicine	Bruce Dye, DDS, MPH, Professor, DDCOF Chair in Oral Health Equity; Tamanna Tiwari, MDS, MPH, Associate Professor; Tamara Tobey, DDS, Associate Professor; Deidre Callanan, RDH, DC, MPH, Assistant Professor, Director of Continuing Education
University of Colorado Denver	Trishia Vasquez, BS/DDS Program Manager

#### **Registered Dental Hygiene Program Faculty/Education**

Organization	Representative Name and Title (if known)
Community College of Denver (CCD)	Paige McEvoy, RDH
Pueblo Community College (PCC)	Linda Blasi, RDH, MS, Dental Hygiene Program Director
Colorado Mountain College	Laura Jacob, RDH, Program Director, Dental Hygiene and Adjunct Faculty

### Community-Based Partners

Organization	Representative Name and Title (if known)
Health Child Care Colorado (HCCC)	Taran Schneider, Executive Director
Early Milestones	Tanya Weinberg, Portfolio Director: Health and Well-Being
Healthier Colorado	Christina Walker, Senior Director of Policy
Colorado Consumer Health Initiative (CCHI)	Mannat Singh, MPA, Executive Director
Contexture	Kelly Joines, Chief Strategy Officer; Kristine Abeyta
Colorado Community Managed Care Network (CCMCN)	Jennifer Ammerman, MHA, Performance Program Manager

The oral health stakeholder engagement process involved a series of official feedback meetings with a diverse group of stakeholders. This included meetings specifically designed to engage particular groups and obtain their input. Some meetings coincided with larger events, such as the Colorado Community Health Network Triannual Member and Board Meeting, while others were hosted independently.

Additionally, open sessions were offered and publicized through partner networks and following other meetings. Engagement included individuals from state agencies, non-profit organizations, safety net clinics, hospitals, and member organizations. The stakeholders involved included representatives from all of the organizations listed above.

### Stakeholder Group Notification

The stakeholder group was provided notice of the rulemaking hearing and provided a copy of the proposed rules or the internet location where the rules may be viewed. Notice was provided prior to the date the notice of rulemaking was published in the Colorado Register (typically, the 10<sup>th</sup> of the month following the Request for Rulemaking).

Not applicable. This is a Request for Rulemaking Packet. Notification will occur if the Board of Health sets this matter for rulemaking.

Yes.

**Summarize Major Factual and Policy Issues Encountered and the Stakeholder Feedback Received. If there is a lack of consensus regarding the proposed rule, please also identify the Department's efforts to address stakeholder feedback or why the Department was unable to accommodate the request.**

No major factual or policy issues were encountered during the preparation of this rulemaking packet. No local government mandate or impact is anticipated.

Please identify the determinants of health or other health equity and environmental justice considerations, values or outcomes related to this rulemaking.

Overall, after considering the benefits, risks and costs, the proposed rule:

Select all that apply.

✓	Improves behavioral health and mental health; or, reduces substance abuse or suicide risk.	✓	Reduces or eliminates health care costs, improves access to health care or the system of care; stabilizes individual participation; or, improves the quality of care for unserved or underserved populations.
	Improves housing, land use, neighborhoods, local infrastructure, community services, built environment, safe physical spaces or transportation.		Reduces occupational hazards; improves an individual's ability to secure or maintain employment; or, increases stability in an employer's workforce.
	Improves access to food and healthy food options.		Reduces exposure to toxins, pollutants, contaminants or hazardous substances; or ensures the safe application of radioactive material or chemicals.
	Improves access to public and environmental health information; improves the readability of the rule; or, increases the shared understanding of roles and responsibilities, or what occurs under a rule.	✓	Supports community partnerships; community planning efforts; community needs for data to inform decisions; community needs to evaluate the effectiveness of its efforts and outcomes.
	Increases a child's ability to participate in early education and educational opportunities through prevention efforts that increase protective factors and decrease risk factors, or stabilizes individual participation in the opportunity.		Considers the value of different lived experiences and the increased opportunity to be effective when services are culturally responsive.
	Monitors, diagnoses and investigates health problems, and health or environmental hazards in the community.		Ensures a competent public and environmental health workforce or health care workforce.
	Other: _____ _____		Other: _____ _____

1 **DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**

2  
3 **Prevention Services Division**

4  
5 **STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREA DESIGNATION**

6  
7 **6 CCR 1015-6**

8  
9  
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11 Adopted by the Board of Health on \_\_\_\_\_; effective \_\_\_\_\_.

12  
13 **1.1 Purpose**

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15 This rule establishes quantitative methods for determining which areas of Colorado  
16 have a shortage of health care providers and thus, should receive a state designation  
17 as a health professional shortage area.

18  
19 The methodology for behavioral health care services designation is based upon:

- 20  
21 1) The estimated demand for behavioral health care services encounters within a  
22 population defined by a discrete geographic area;  
23  
24 2) The estimated supply of behavioral health care services encounters for the  
25 population within a discrete geographic area;  
26  
27 3) The determination of whether supply meets demand within a discrete geographic  
28 area; and  
29  
30 4) The designation of geographic areas as behavioral health care services health  
31 professional shortage areas where the resultant supply falls short of estimated  
32 demand for minimally adequate substance use disorder treatment.  
33

34 The methodology for primary care designation is based upon:

- 35  
36 1) The estimated demand for primary care service encounters within a population  
37 defined by a discrete geographic area;  
38  
39 2) The estimated supply of primary care service encounters for the population within  
40 a discrete geographic area;  
41  
42 3) The determination of whether supply meets demand within a discrete geographic  
43 area; and  
44  
45 4) The designation of geographic areas as primary care health professional  
46 shortage areas where the resultant supply falls short of estimated demand for  
47 primary care services.

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The methodology for dental care designation is based upon:

- 1) The estimated demand for dental care services encounters within a population defined by a discrete geographic area;
- 2) The estimated supply of dental care service encounters for the population within a discrete geographic area;
- 3) The determination of whether supply meets demand within a discrete geographic area; and
- 4) The designation of geographic areas as dental health professional shortage areas where the resultant supply falls short of the estimated demand for dental services.

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**1.3 Definitions**

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10) “Oral Health Provider,” means the following health care professionals as defined in Section 25-1.5-502(5), C.R.S., who provide primary oral health care services within their scope of practice:

- a) a Doctor of Dental Surgery (DDS) or Doctor of Medicine in Dentistry (DMD) who is practicing in general dentistry and/or pediatric dentistry; or
- b) a registered dental hygienist (RDH).

11) “Oral Care Services” means a type of primary oral health services that involves comprehensive first contact and continuing care services for the prevention, diagnosis, and treatment.

120) “Prevalence” means the proportion of a population who has behavioral health care needs at some point within the previous year.

134) “Primary Care Provider” means the following health care professionals as defined in Section 25- 1.5-502(5), C.R.S., who provide primary care services within their scope of practice:

- a) an advanced practice nurse (APN) with a focus or specialty in primary care, women’s health, or nurse midwifery;
- b) a physician (MD or DO) with specific board certification or training in family medicine, general internal medicine, or general pediatrics; or

95  
96 c) a physician assistant (PA) with a practice focus on primary care services.  
97

98 ~~142~~) “Primary Care Services,” means a type of primary health services, as defined in  
99 Section 25-1.5- 502(10), C.R.S., that involves comprehensive first contact and  
100 continuing care services for the prevention, diagnosis, and treatment of any  
101 undiagnosed sign, symptom or health concern not limited by problem origin or  
102 diagnosis.

103  
104 ~~153~~) “Polygon” means a closed, irregular geometric shape on a map surface that  
105 defines equivalent road travel distances from a central point within the shape.  
106

107 ~~164~~) “Population Centroid” means the geometric center of a group of population points  
108 within a geographic shape (e.g., census block group).  
109

110 ~~175~~) "State-Designated Health Professional Shortage Area," pursuant to Section 25-  
111 1.5-402(11) and Section 25-1.5-502(13), C.R.S., means an area of the state  
112 designated by the Primary Care Office in accordance with state-specific  
113 methodologies established by the State Board by rule pursuant to Section 25-  
114 1.5-404 (1)(a), C.R.S., as experiencing a shortage of health care professionals or  
115 behavioral health care providers.  
116

117 ~~186)~~ “~~State Designated Substance Use Disorder Health Professional Shortage Area~~”  
118 ~~means a State Designated Health Professional Shortage Area experiencing a~~  
119 ~~shortage of behavioral health care providers providing behavioral health care~~  
120 ~~services for substance use disorder.~~  
121

122 ~~197)~~ “~~Substance Use Disorder~~” ~~means mild, moderate, or severe recurrent use of~~  
123 ~~drugs and/or alcohol that causes clinically and functionally significant impairment~~  
124 ~~of individuals. Impairment may include health concerns, disability, risky behavior,~~  
125 ~~social impairment, and failure to perform significant responsibilities at work,~~  
126 ~~school, or with family. The diagnosis may be applied to the abuse of one or more~~  
127 ~~of ten separate classes of drugs including alcohol, caffeine, cannabis,~~  
128 ~~hallucinogens, inhalants, opioids, sedatives, stimulants, tobacco, and other~~  
129 ~~substances. The dependent use of tobacco and caffeine are not a primary focus~~  
130 ~~of this rule.~~  
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132 \*\*\*\*\*  
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## 135 1.6 Dental Health Professional Shortage Area Determination Method

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137 1) Catchment areas are created for analysis of dental health provider capacity by  
138 determining standard road travel distances from the population centroid of each  
139 census block group in Colorado using a variable two-step floating catchment  
140 area method.  
141

- 142 2) The population of each catchment area is the civilian noninstitutionalized  
143 population according to the most recent available data from U.S. Census Bureau  
144 at the time of analysis.
- 146 3) The estimated demand for dental care services within each catchment area is  
147 determined by multiplying the civilian noninstitutionalized population in the  
148 catchment area (section 1.5(2)) by two visits per year.
- 150 4) The estimated dental services supply in each catchment area is determined by  
151 surveying dentists with a practice address within the catchment area. The list of  
152 dentists is derived from the most recent available data reported in the Colorado  
153 Health Systems Directory administered by the Colorado Department of Public  
154 Health and Environment's Primary Care Office. Each dentist is assigned a dental  
155 primary care service 12 month productivity rate. The sum of encounter  
156 productivity for all practicing primary care providers in the catchment area is the  
157 total estimated primary care services supply in the catchment area.
- 159 5) Designation of a census block group as a State Designated Dental Health  
160 Professional Shortage Area occurs when the supply of dental care service  
161 encounters falls below the per capita demand for primary care demand within the  
162 catchment area.
- 164 6) Current designation status of each region of the state will be posted at least  
165 annually on or about July 1 on a publicly accessible website.

### 167 **1.67 Data Sources**

- 169 1) If current data from the sources cited above are unavailable, the department may  
170 rely upon-comparable data sources.
- 172 2) To the extent available, reliable and practicable, the department will rely upon  
173 data collected within one year prior to analysis.
- 175 3) Health care providers practice characteristics data may be derived from direct  
176 survey methods, claims analysis, peer reviewed and validated workforce  
177 research tools, and statistical methods.

### 179 **1.78 Review**

181 Shortage designation status will be reviewed in 202~~4~~<sup>3</sup> and at least every three years  
182 thereafter. More frequent review may be performed where data is available and  
183 analytical resources are available. Designation status of each area will remain effective  
184 for 36 months from the date of publication or when replaced by a more recent analysis.