COLORADO
Department of Public
Health & Environment

To:	Members of the 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:	September 1, 2023
Subject:	Request for a Rulemaking Hearing concerning amendments to 6 CCR 1015-6, State-Designated Health Professional Shortage Area Designation

The Department of Public Health and Environment's Primary Care Office (PCO) requests promulgation of amendments to Rule 6 CCR 1015-6 according to revisions described in this briefing. These proposed rule amendments revise methodologies for State-Designated Health Professional Shortage Areas (HPSA). Rulemaking is authorized by Section 25-1.5-404 (1)(a) C.R.S, which was passed into law by Senate Bill 18-024, "Expand Access to Behavioral Health Care Providers". These proposed amendments are further directed by Senate Bill 22-181 "Concerning the Behavioral Health Administration's Plan to Address Issues Regarding the Delivery of Behavioral Health-Care Services in this State, and, in Connection Therewith, Making an Appropriation".

Enactment of amended rules is requested because the burden of behavioral health care services (prevention, diagnosis and treatment for mental health and substance use disorders, life stressors and crises, and stress-related physical symptoms) in Colorado is increasing. For example, the Kaiser Family Foundation reports from findings of survey data collected in 2023 that 29.8% of Coloradoans over 18 report symptoms of anxiety and/or depressive disorder. Furthermore, opioid misuse has been declared a national public health emergency (US Department of Health and Human Services, April 4, 2022) and the drug overdose rates have increased in Colorado from 16.1 per 100k in 2011 to 31.4 per 100k in 2021 (CDPHE 2021). The upward trend of acute drug intoxication resulting in death in Colorado and nationally is not expected to wane in the near future.

To respond to the public health crisis, greater access to secondary and tertiary clinical treatment services is needed. Because access to behavioral health treatment is substantially modulated by the local treatment capacity of behavioral health clinicians, the legislature has directed the PCO to expand the Colorado Health Service Corps (CHSC) (Section 25-1.5-501 *et seq,* C.R.S.) to include clinician practice incentives for more behavioral health professionals, especially those engage in the care of those with substance dependency, who work in state-designated HPSAs.

These rules are a necessary precondition to the allocation of CHSC resources to areas of Colorado with the most acute behavioral health clinician shortages. Alternatives to the state-designated HPSA model are inadequate in accurately measuring specific behavioral

health clinician shortages and effectively localizing shortages to specific communities. If current state rules are not amended, available state resources intended to improve access to behavioral 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-Designated Health Professional Shortage Area Designation

Basis and Purpose.

Legislative Background

In 2017, the Opioid and Other Substance Use Disorders (SUD) Interim Study Committee and Task Force met to conduct:

- A review of data and statistics on the scope of the SUD problem in Colorado, including trends in rates of substance abuse, treatment admissions, and deaths from substance use;
- An overview of the current prevention, intervention, harm reduction, treatment, and recovery resources, including substance abuse prevention outreach and education, available to Coloradans, as well as public and private insurance coverage and other sources of support for treatment and recovery resources;
- A review of the availability of medication-assisted treatment and whether pharmacists can prescribe those medications through the development of collaborative pharmacy practice agreements with physicians;
- An examination of what other states and countries are doing to address SUDs, including evidence-based best practices and the use of evidence in determining strategies to treat substance use disorders, and best practices on the use of prescription drug monitoring programs;
- Identification of the gaps in prevention, intervention, harm reduction, treatment, and recovery resources available to Coloradans and hurdles to accessing those resources; and
- Identification of possible legislative options to address gaps and hurdles to accessing prevention, intervention, harm reduction, treatment, and recovery resources.[1]

SB 18-024 Implications for Rulemaking

During the 2018 legislative session, the Opioid and Other Substance Use Disorders Interim Study Committee recommended Senate Bill 18-024. SB 18-024 is one of five successful legislative proposals introduced during the 2018 legislative session to specifically address the opioid epidemic and SUD in Colorado. SB 18-024 expands the scope of the Colorado Health Service Corps (CHSC) loan repayment program to include clinicians and facilities that provide treatment for SUD and experience a shortage of health care professionals. SB 18-024 also expands loan repayment from licensed health professionals to licensed health professionals and candidates for licensure in professions associated with the treatment of SUD. The CHSC improves access to health care by incentivizing clinical practice in areas of Colorado determined to have a shortage of health professionals.

In addition to these changes to the CHSC program, SB 18-024 created authority for state-designation of Health Professional Shortage Areas (HPSA), which will exist in parallel to

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[1] Charge and Membership of the Opioid and Other Substance Use Disorders Interim Study Committee and Task Force, Colorado Legislative Council (June 28, 2017)

federal HPSA designations. This authority is important because the department has found that federal methods do not adequately inform state decisions regarding emerging needs for improved health care services related to the treatment of SUD. Federal methods do not consider the unique systems and professions required to deliver comprehensive SUD care or consider the population level indicators of risk for SUD. For example, federal rules only measure physicians boarded in psychiatry when evaluating workforce capacity rather than the full range of behavioral health professionals and assume a constant rate of need for care within a population regardless of age, sex, or other demographic factors that correlate with SUD risk.

The department's Primary Care Office (PCO) requests promulgation of amended rules that update a methodology for State-Designated HPSA for the behavioral health workforce engaged in SUD treatment. The shortage designation analysis and process, as described in the amended rule will produce detailed quantitative information regarding local shortages of health professionals who provide treatment for mental health (MH) and SUD.

Upon this rule amendment, approximately $20 million (appropriated and granted from multiple sources) will be distributed in the form of educational loan repayment to clinicians who provide SUD treatment services in state-designated HPSA over the next two years.

The CHSC program improves access to health care by incentivizing clinical practice through educational loan debt reduction of qualified health professionals in exchange for a minimum three years of clinical service in an area of the state determined to have a shortage of providers. CHSC participants must agree to provide care to all individuals regardless of ability to pay.

The department anticipates that behavioral health workforce participation in the program will increase through 2025 (222 three-year loan repayment agreements in the average amount of $90,000 anticipated).

The rule will also be used for individuals who will receive a scholarship to complete certifications in addictions counseling as established by SB 18-024 (Section 25-1.5-503.5, C.R.S.). Approximately $50,000 will be made available for scholarship awards in FY 2023-2024 (21 scholarships in the average amount of $3,500 anticipated).

These amended rules will be effective in time for the March 2024 application cycle. The department has applied lessons learned from initial implementation of the methodology to inform improvements to the rule as amended in this request.

SB 22-181 Implications for Rulemaking

Senate Bill 22-181 directs the department to collaborate with the Behavioral Health Administration to develop and further revise behavioral health workforce assessment through amendments to existing rules promulgated by the state Board of Health pursuant to section 25-1.5-404 (1)(a). The revised assessment is to measure community-level shortages of behavioral health workers who provide services for children, youth, and adults by which to expand the Colorado Health Service Corps in section 25-1.5-503 to improve access to behavioral health-care services in communities where workforce shortages exist by providing education loan forgiveness to behavioral health providers to practice in these communities and work with priority populations.

Description of the Methodology

Population

The population considered for analysis was all persons who are resident[2] in Colorado but not part of a group quarter such as a military base or correctional facility. Group quartered populations were excluded from analysis because behavioral health services are provided in closed health care delivery systems that are supported and maintained specifically for the quartered population. The cross interaction of behavioral health services supply and demand between quartered and unquartered populations within the same service area are assumed to be de minimis.

Estimating Demand for Behavioral Health Treatment

A table of civilian population estimates in Colorado was created from data downloaded from American FactFinder[3] (American Community Survey, 2018-2022 5-year estimates, Table B01001 and B27001). The tables consisted of civilian noninstitutionalized population totals for each Colorado census block group[4] broken down by age and sex.

The number of individuals experiencing SUD at the block group level was estimated by multiplying the male and female civilian population by age according to the following table.

Age	Male	Female
15-19	29.10%	16.03%
20-29	30.86%	19.66%
30-39	29.90%	22.90%
40-49	23.70%	21.10%
50 or older	20.14%	18.07%

The MI and SUD multiplier by age and sex was derived from national data from the report "Behavioral Health, United States, 2012" page 36 "Table 2. Past year mental illness and substance use disorders among adults, by selected characteristics: percentage, United States, 2010–2011 combined" and, page 44 "Table 5. Past year substance use disorders among adults, by sex: percentage, United States, 2010–2011 combined" (Substance Abuse Mental Health Services Administration, 2012).

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[2] 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.
[3] American FactFinder is the United States Census Bureau's online self-service data tool, which supports public query of population, economic, geographic, and housing data.
[4] Census block groups are statistical divisions of census tracts that generally contain between 600 and 3,000 residents.

From the estimate of individuals with a MI or SUD at the census block group level, an estimated treatment encounter demand for community-based services was derived by multiplying the total individuals with a MI or SUD by eight. The treatment encounter demand multiplier was obtained from the National Comorbidity Survey - Replication (NCS-R) report, which defines minimally adequate treatment[5] for SUD as eight or more visits with any health care or human services professional lasting an average of 30 minutes or more.

Estimating Supply of BH Treatment

A table of behavioral health professionals who are licensed in Colorado and have evidence of recent practice within the state was downloaded from the Colorado Health Systems Directory.[6] The table consisted of the name, license type, professional discipline, and practice location(s) of each behavioral health professional.

Behavioral health clinicians in the report were surveyed to determine BH treatment capacity for each clinician. 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 accomplished by summing the total estimated encounters by clinician for all behavioral health clinicians with a practice address in the block group.

Estimating the Spatial Relationship of Supply and Demand for SUD Treatment

The relationship of demand and supply for SUD treatment encounters was evaluated at the service area level. 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 behavioral health services within the service area, when it is adequately resourced. All providers within the service area are presumed to be generally accessible and similarly proximate to the residents of the service area. BH 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 treatment resources within each block group, considering the demand for and supply of BH treatment 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 BH 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.

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[5] Minimal adequacy for SUD treatment encounters was determined by evaluating recommendations and guidelines from the American Psychiatric Association (APA) and the Agency for Healthcare Research and Quality (AHRQ).

[6] 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.

The application of the V2SFCA began with representing the population as a travel centroid[7] 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 ESRI Street Map data, ArcGIS v. 10.4x), 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. The ratio of encounter supply to encounter demand is then calculated for each catchment area according to the following formula.

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

Once the catchment area was defined by the travel polygon,[8] the sum of predicted demand for BH treatment encounters and the sum of predicted supply of BH treatment encounters for each block group within the boundaries of the catchment area was calculated.

Figure 1: Hypothetical Catchment Area Map with Travel Polygon

In the example represented in Figure 1, estimated BH treatment 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 treatment 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.

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[7] 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.
[8] A closed, irregular geometric shape on a map surface that defines equivalent road travel distances from a central point within the shape.

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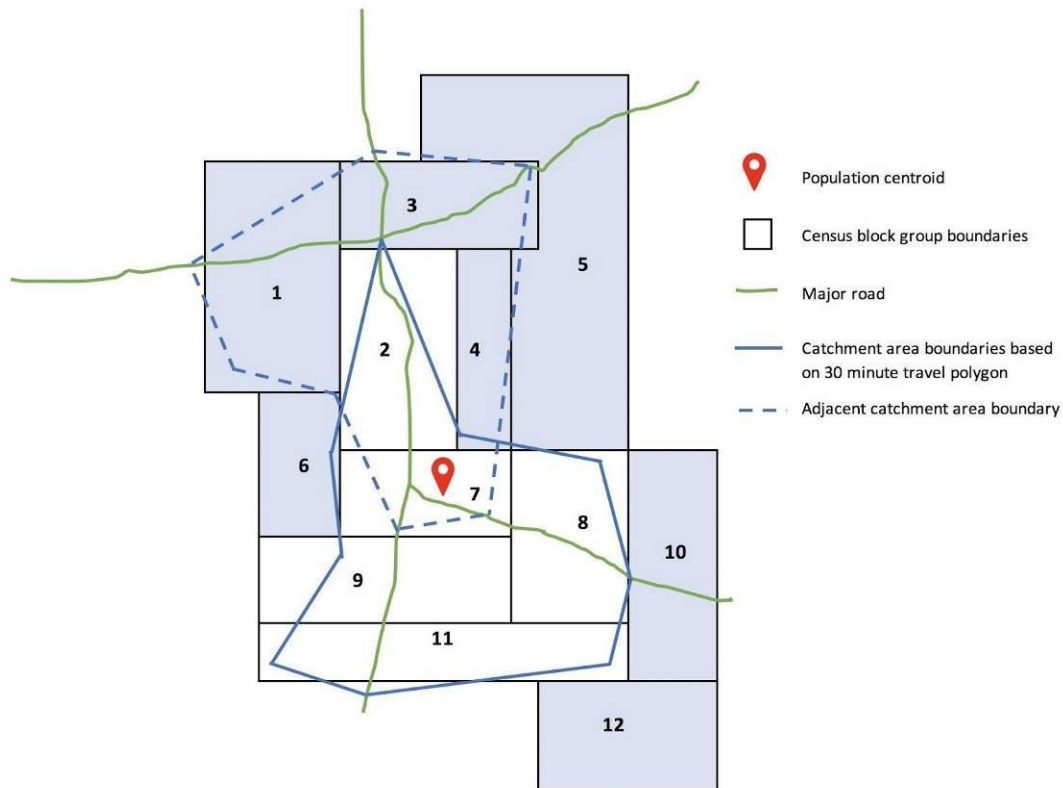
The catchment area definition process and demand supply computation are repeated for each block group in the state. As expected under the V2SFCA model, adjacent block groups of relatively small geographies tended to create overlapping or "floating" catchment areas. In these two hypothetical examples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

Calculating the Ratio of Supply and Demand for BH Treatment 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 encounters per person with a BH concern is deemed to be a HPSA for BH.

Limitations

1. Census block group level population estimates have a higher error rate than larger census geographies such as census tracts or metropolitan statistical areas. Use of block groups improves discrete area analysis but may introduce more error. The overlapping nature of the floating catchment area analysis could reduce the overall effect of individual block group population error rates.

2. The characteristics of responders and non-responders cannot be assumed to be comperable. Individual provider encounter capacity of survey non-responders was derived by a statistical method which applies a diminishing rate along a trend line established in the analysis of first, second and third wave survey respondents. This method applies a plausible estimate of productivity for those clinicians who are unwilling or unable to respond to PCO requests for practice information.

3. The minimally adequate treatment benchmark for mental illness and substance use disorder was reported as eight visits of 30 minutes or longer. Though this benchmark was derivative from analysis of the Agency for Health Research and Quality and the American Psychological Association sources, its determination was made prior to the enactment of the Mental Health Parity and Addiction Equity Act (2008) and the Affordable Care Act (2010). These two changes in federal law increased standard minimum coverage for behavioral health care services. It may be that the standard of eight visits established nearly 20 years ago was suppressed by lack of insurance coverage or inadequate remuneration for behavioral health services by public and private health plans. Total coverage for behavioral health care in both private and public plans has improved since 2010, which may have led to changes in care acquisition or care referral, causing typical behavioral health treatment intensity per patient to rise.

    There may be good reason to maintain the standard minimum treatment rate of eight visits per episode of mental illness or substance use disorder in this model even if changes to this recommendation occur in the future. This is because the modest standard of eight treatment visits results in all of Colorado being deficient in encounter capacity. If a higher standard for minimum treatment were applied to the predicted demand formula, the ability to decern areas of the state with an adequate or surplus behavioral health care supply would be further diminished. This would effectively reduce the resolution of analysis in determining areas of greatest need and thus reduce the value of the analysis in identifying those areas with the most significant shortages and those subject to public investment to improve access.

4. Burden of disease data applied to this model does not include the period of time in which the United States experienced the COVID-19 epidemic. This is because the survey methodology changed at the federal level, preventing the aggregation of burden data at small geographic areas. This problem will be resolved in late 2024.

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 treatment services for mental illness and substance use disorder.

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.

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 <u>SB 22-181</u>. 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
6 CCR 1015-6, State-Designated 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.

    No person or class of persons are likely to be harmed by this rule nor will any directly bear the costs of this rule. All costs associated with implementation of this rule are borne by state appropriations from General Fund, retail marijuana tax revenue, and the Master Tobacco Settlement.

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

    Primary Care Office: Implementation of this rule.
    Relationship: C
    Size: 5 staff assigned to various aspects of clinician data collection and designation analysis

    Clinic Employers: Entities that employ clinicians who treat mental illness (MI) and substance use disorder (SUD) 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 (HPSA) where their agencies are located. Several hundred behavioral health care sites could conceivably receive some direct or indirect benefit of the shortage designation process.
    Relationship: B
    Size: 552 clinic sites

    Health Equity Orgs.:   Organizations that promote better access to health services for medically underserved populations may also benefit from the assessment of need and the promotion of improved access for underserved people. Perhaps 15 to 20 organizations and advocacy groups may benefit from this rule in this way. Other state and local governments, such as human services and criminal justice, would benefit if Colorado is better able to address SUD.
    Relationship: B

Size: 20 organizations

Colorado residents: The burden of mental illness and substance use disorder in Colorado is higher than the nation as a whole, where an estimated 1,119,000 Coloradans had some form of mental illness and 944,000 Coloradans had a SUD (National Survey on Drug Use and Health, 2021). Approximately 995,000 Colorado residents disclose that they have used an illicit drug in the last month (National Survey on Drug Use and Health, 2021). State trends in illicit substance use have consistently paralleled national trends since at least 1999. Colorado's experience with the epidemic indicates that risk of fatal overdose for all illicit drugs is highest among those between the ages of 25 to 44. In the current decade, drug overdose mortality characterized by age has broadened to the younger age band of 25 to 34, which has slightly overtaken the older age band of 35 to 44 as the highest burden of overdose mortality. These two age groups contribute over half of all drug overdose deaths in Colorado (26.5% and 24.7% of total overdose deaths from 2019-2021, respectively). Synthetic opioids, including fentanyl, and methamphetamine have risen to be the main causes of drug overdose mortality among both age groups, overtaking prescription opioids. Opioid use is higher in men in Colorado, as it is nationally, and men are far more likely than women to die from heroin overdose in Colorado. Overdose rates in women have annually increased faster than with men at 125 percent versus 88 percent, respectively.

Those who are experiencing SUD in Colorado and receive improved access to secondary and tertiary treatment service as a result of this rule, will most benefit. Those individuals with SUD treatment needs who are uninsured, publicly insured, low income, or geographically isolated may benefit most because these classes of persons have the highest barriers to receiving adequate SUD treatment services.

Nearly all residents of communities with insufficient Substance Use Disorder care clinician capacity may benefit from this shortage designation analysis.

Relationship: B
Size: 5.84 million

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 that employ clinicians who treat mental illness and substance use disorder may experience reduced costs of clinician recruitment and retention. The magnitude of this effect is not precisely known but could be substantial in aggregate. Education loan repayment may effectively reduce that cost for employers by making the position more attractive to potential recruits. There are no anticipated negative impacts of this proposed rule upon these entities.

No local government impact of these rules is predicted.

RA 2

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: None	Anticipated Benefits:
Clinic Employers (B)	Costs associated with recruiting health care professionals to underserved Colorado communities can be substantial (more than $120,000 for certain physician specialties, for example). Most Colorado Health Service Corps (CHSC) clinicians report that loan repayment had a meaningful effect on their decision on where to practice (program evaluation 2017). Current CHSC employers report that loan repayment is an important component of their recruitment and retention strategy. State financed practice incentives that will result from this rule will lower 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.
Clinic Employers (B)	If employer recruitment costs are reduced by a conservative $5,000 per CHSC applicant for clinician types eligible for CHSC, aggregate annual employer savings could exceed $1,125,000. These savings are estimated according to the following: • Employers recruit health professionals in advance of clinicians' CHSC application. • Recruitment and retention cost savings accrue to employers when clinicians choose to work at eligible practice sites for the prospect of loan repayment benefits, regardless of whether individual clinicians receive a CHSC award. • If 225 CHSC applications are received in one year and employers experience a mean $5,000 per applicant reduction in recruitment costs, then aggregate recruitment cost savings per year experienced by all CHSC employers would be approximately $1,125,000 (225 x $5,000).
Clinic Employers (B)	There are positive secondary economic benefits to health systems capacity development in underserved communities. For example, multiple non-clinical jobs are created when clinicians are added to a given health care service area. Communities also benefit when economic activity related to health care spending occurs within their community as opposed to adjacent communities where access to care may be better.

Non-economic outcomes

Favorable non-economic outcomes: For individuals that are publicly insured, treatment participation may increase thus increasing the demand for public financing of care;

RA 3

however, it is anticipated that these costs will be more than offset by the health care costs for individuals that do not address their behavioral health concerns and experience other comorbidities as a result.

There are many strategies to improve access to care. This rule and the work of the CHSC is one component of a complex social issue and service array. Appreciating that individuals may have individual barriers to seeking care and health care costs influence our health care costs, this rule contributes to the effort by making sure persons experiencing a behavioral health concern have those services available in their community.

As care capacity increases in areas with a health professional shortage, morbidity and mortality attributable to or associated with a behavioral health concern is expected to decrease. Clinicians who receive practice incentives resulting from shortage analysis under this rule may collectively provide 67,000 treatment encounters for behavioral health needs in year one. By year three, total encounters for behavioral health by those who are contracted with the program may increase to 201,000 per year.

The CHSC and this rule may enhance resource allocation and policy attention of organizations that promote better access to 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 specific to the state-designated HPSA:

Type of Expenditure	Year 1	Year 2
Personnel Time	$ 97,920	$ 93,024
Data collection, analysis and systems database	$ 138,000	$ 144,900
Total	$ 235,920	$ 237,924

   Expenditures are less than that stated on the fiscal note because this table reports only those costs associated with rule implementation.

   Anticipated CDPHE Revenues: Not Applicable

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

   None.

RA 4

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):

1. Reduce Greenhouse Gas (GHG) emissions economy-wide from 125.716 million metric tons of CO_2e (carbon dioxide equivalent) per year to 119.430 million metric tons of CO_2e per year by June 30, 2020 and to 113.144 million metric tons of CO_2e by June 30, 2023. ___ Contributes to the blueprint for pollution reduction ___ Reduces carbon dioxide from transportation ___ Reduces methane emissions from oil and gas industry ___ Reduces carbon dioxide emissions from electricity sector
2. Reduce ozone from 83 parts per billion (ppb) to 80 ppb by June 30, 2020 and 75 ppb by June 30, 2023. ___ Reduces volatile organic compounds (VOC) and oxides of nitrogen (NOx) from the oil and gas industry. ___ Supports local agencies and COGCC in oil and gas regulations. ___ Reduces VOC and NOx emissions from non-oil and gas contributors
3. Decrease the number of Colorado adults who have obesity by 2,838 by June 30, 2020 and by 12,207 by June 30, 2023. ___ Increases the consumption of healthy food and beverages through education, policy, practice and environmental changes. ___ Increases physical activity by promoting local and state policies to improve active transportation and access to recreation. ___ Increases the reach of the National Diabetes Prevention Program and Diabetes Self-Management Education and Support by collaborating with the Department of Health Care Policy and Financing.
4. Decrease the number of Colorado children (age 2-4 years) who participate in the WIC Program and have obesity from 2120 to 2115 by June 30, 2020 and to 2100 by June 30, 2023. ___ Ensures access to breastfeeding-friendly environments.

RA 5

5. Reverse the downward trend and increase the percent of kindergartners protected against measles, mumps and rubella (MMR) from 87.4% to 90% (1,669 more kids) by June 30, 2020 and increase to 95% by June 30, 2023. ___ Reverses the downward trend and increase the percent of kindergartners protected against measles, mumps and rubella (MMR) from 87.4% to 90% (1,669 more kids) by June 30, 2020 and increase to 95% by June 30, 2023. ___ Performs targeted programming to increase immunization rates. ___ Supports legislation and policies that promote complete immunization and exemption data in the Colorado Immunization Information System (CIIS).
6. Colorado will reduce the suicide death rate by 5% by June 30, 2020 and 15% by June 30, 2023. ___ Creates a roadmap to address suicide in Colorado. ___ Improves youth connections to school, positive peers and caring adults, and promotes healthy behaviors and positive school climate. ___ Decreases stigma associated with mental health and suicide, and increases help-seeking behaviors among working-age males, particularly within high-risk industries. ✔___ Saves health care costs by reducing reliance on emergency departments and connects to responsive community-based resources.
7. The Office of Emergency Preparedness and Response (OEPR) will identify 100% of jurisdictional gaps to inform the required work of the Operational Readiness Review by June 30, 2020. ___ Conducts a gap assessment. ___ Updates existing plans to address identified gaps. ___ Develops and conducts various exercises to close gaps.
8. For each identified threat, increase the competency rating from 0% to 54% for outbreak/incident investigation steps by June 30, 2020 and increase to 92% competency rating by June 30, 2023. ___ Uses an assessment tool to measure competency for CDPHE's response to an outbreak or environmental incident. ___ Works cross-departmentally to update and draft plans to address identified gaps noted in the assessment. ___ Conducts exercises to measure and increase performance related to identified gaps in the outbreak or incident response plan.
9. 100% of new technology applications will be virtually available to customers, anytime and anywhere, by June 20, 2020 and 90 of the existing applications by June 30, 2023. ___ Implements the CDPHE Digital Transformation Plan. ___ Optimizes processes prior to digitizing them. ___ Improves data dissemination and interoperability methods and timeliness.
10. Reduce CDPHE's Scope 1 & 2 Greenhouse Gas emissions (GHG) from 6,561

RA 6

metric tons (in FY2015) to 5,249 metric tons (20% reduction) by June 30, 2020 and 4,593 tons (30% reduction) by June 30, 2023.

___   Reduces emissions from employee commuting
___   Reduces emissions from CDPHE operations

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11. Fully implement the roadmap to create and pilot using a budget equity assessment by June 30, 2020 and increase the percent of selected budgets using the equity assessment from 0% to 50% by June 30, 2023.

___   Used a budget equity assessment

___ 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 the only statutorily allowable method for achieving the purpose of the statute. Implementation of this rule is not expected to be intrusive on any affected person or class of persons. Costs of implementation are borne by a specific state appropriation to the PCO for the purpose of administering state health professional shortage area designation. These proposed rules provide the most benefit for the least amount of cost and are the minimum necessary to achieve compliance with statute.

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

   This rule is authorized by statute and is necessary for the efficient allocation of up to $30 million in workforce incentive funds annually. Rulemaking is the most efficient means of resource allocation and is preferred under legislative direction.

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 rules will apply a "variable two-step floating catchment area" method first proposed by Luo and Whippo in 2012 (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 3.1, 2023 Esri
   - MapMarker® USA Version 31.0.0.0 © 2018 Pitney Bowes, Inc
   - Microsoft® Excel, Version 16.13.1 (180523). © 2019 Microsoft.
   - Qualtrics®, subscription data collection software, © 2023 Qualtrics.
   - Remark® Office OMR, © 2023 Gravic, Inc.

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 Behavioral Health Professional Shortage Areas include:

- Colorado Health Systems Directory, Version 3.0. Colorado Department of Public Health and Environment.
- Behavioral Health, United States, 2012; page 44 "Table 5. Past year substance use disorders among adults, by sex: percentage, United States, 2010-2011 combined"; row one "Any substance use disorder".
- National Comorbidity Survey - Replication; Minimally Adequate Treatment for Substance Use Disorder.
- United States Census Bureau, American FactFinder; American Community Survey, 2017-2021 5-year estimates, Table B21001.
- United States Department of Veterans Affairs, Mental Health Benchmarks By Discipline.
- Survey findings of the PCO derived from 29,581 solicited responses of licensed behavioral health clinicians 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.

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Variable catchment sizes for the two-step floating catchment area (2SFCA) method

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ARTICLE INFO

ABSTRACT

Government efforts designed to help improve healthcare access rely on accurate measures of accessibility so that resources can be allocated to truly needy areas. In order to capture the interaction between physicians and populations, various access measures have been utilized, including the popular two-step floating catchment area (2SFCA) method. However, despite the many advantages of 2SFCA, the problems associated with using fixed catchment sizes have not been satisfactorily addressed. We propose a new method to dynamically determine physician and population catchment sizes by incrementally increasing the catchment until a base population and a physician-to-population ratio are met. Preliminary application to the ten-county region in northern Illinois has demonstrated that the new method is effective in determining the appropriate catchment sizes across the urban to suburban/rural continuum and has revealed greater detail in spatial variation of accessibility compared to results using fixed catchment sizes.

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1. Introduction

Despite its large per capita health expenditure, the U.S. falls behind other industrialized nations in key health performance measures (http://www.who.int/whr/2000/en/index.html). One of the primary reasons for this gap is the large disparities in both access to care and health outcomes. Access to primary healthcare is recognized as an important facilitator of overall population health and has remained a major goal of U.S. health legislation and government initiatives in past years. Access to healthcare (or healthcare accessibility) refers to the relative ease by which healthcare can be reached from a given location (Wang, in press) and is influenced by many factors, e.g., the supply of health services and physicians, the demand of patients (population) seeking care, the socio-economic and financial resources available to patients, and geographical impedance between patients and doctors (Aday and Andersen, 1974). Depending on whether the emphasis is on actual healthcare utilization versus service availability, or on spatial factors (such as geographic barriers) versus nonspatial factors (such as insurance), healthcare accessibility can be divided into four categories: potential spatial accessibility, potential non-spatial accessibility, revealed spatial accessibility, revealed non-spatial accessibility (Khan, 1992). The focus of this paper will be on potential spatial accessibility measures and on demonstrating a new methodology.

Potential spatial access to medical services is primarily dependent on three factors: supply of medical services/physicians, population demand for the services, and travel costs between the demanding populations and medical sites (Wan et al., 2011). Various measures of spatial accessibility have been proposed, including regional availability (Khan, 1992), the gravity model (Joseph and Bantock, 1982) and the two-step floating catchment area (2SFCA) method (Luo and Wang, 2003). Of these methods, the regional availability method is the simplest to compute, as it is simply the ratio of supply (doctors) and demand (population) within a predefined area (e.g., administrative boundary). However regional availability measures do not reveal the spatial variation within the boundary, nor do they account for the interaction between supply and demand across the boundary. The gravity model is theoretically more sound, but it requires more computation and the result is not intuitive to interpret (Joseph and Phillips, 1984). The gravity model often takes the following form (Luo and Wang, 2003):

$$A_i^G = \sum_{j=1}^{n} \frac{S_j d_{ij}^{-\beta}}{\sum_{k=1}^{m} P_k d_{kj}^{-\beta}} \tag{1}$$

A_i^G is the gravity-based accessibility at population location i, where n and m are the total numbers of physician locations and population locations respectively. P_k is the population at location k, S_j the number of physicians at location j, and d_{kj} (or d_{ij}) the travel time between k and j (or i and j). The denominator term

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represents a measure of the availability of physicians at location j to all population (P_k, $k = 1, 2, \ldots, m$). β is the friction of distance coefficient, which has to be determined by physician–patient interaction data and is often region specific (Huff, 2000). The difficulty in determining β limits the wide application of the gravity model.

The 2SFCA method is a special case of the gravity model and thus not only keeps most of the advantages of a gravity model, but is also intuitive to interpret, as it generates essentially a special form of physician-to-population ratio (Luo and Wang, 2003). It is easily implemented in a GIS environment using the following two steps:

Step 1: For each physician location j, search all population locations (k) that are within a threshold travel time (d_0) from location j (this forms the catchment of physician location j or catchment j), and compute the physician-to-population ratio, R_j, within the catchment area:

$$R_j = \frac{S_j}{\sum_{k \in \{d_{kj} \le d_0\}} P_k} \qquad (2)$$

The variables are defined similarly as described above for the gravity model.

Step 2: For each population location i, search all physician locations (j) that are within the threshold travel time (d_0) from location i (that is, catchment area i), and sum up the physician-to-population ratios (derived in step 1), R_j, at these locations:

$$A_i^F = \sum_{j \in \{d_{ij} \le d_0\}} R_j = \sum_{j \in \{d_{ij} \le d_0\}} \frac{S_j}{\sum_{k \in \{d_{kj} \le d_0\}} P_k} \qquad (3)$$

where A_i^F represents the accessibility of population at location i to physicians based on the 2SFCA method. This is essentially a ratio of supply and demand and is thus straightforward to interpret.

The 2SFCA method has been used in a number of studies measuring healthcare accessibility (Yang et al., 2006; McGrail and Humphreys, 2009a,b; Dai, 2010; Schuurman et al., 2010; Dai, 2011; Dai and Wang, 2011; Ngui and Apparicio, 2011; Wan et al., 2011; Wang and Roisman, 2011). However, despite its relative popularity, at least three major limitations have been identified: (1) it is a dichotomous measure (i.e., all locations outside of the catchment are assumed to have no access at all); (2) it does not

consider distance decay within catchments (i.e., all locations inside of the catchment are assumed to have equal access, Luo and Qi, 2009); (3) it uses fixed catchment sizes (d_0) for all physician (supply) and population (demand) locations, and thus does not correctly reflect the reality that people in rural areas are willing to travel further distances and longer times to seek care than those in urban areas (i.e., the catchments in urban and rural areas should have different sizes, (McGrail and Humphreys, 2009b)). Several studies have attempted to improve upon these limitations. For example, a kernel density function (Guagliardo, 2004) or a Gaussian function (Dai, 2010) has been introduced to account for the distance decay effect in a continuous fashion. Different weights for different travel time zones have also been used to model the distance decay effects in a step-wise discrete fashion (Luo and Qi, 2009). Yang et al. (2006) suggested varying the catchment size based on provider types or neighborhood types. McGrail and Humphreys (2009b) introduced a cap function to limit the size of the catchment in urban areas. However, the debates on what functional form to choose and what proper catchment size to use still remain (Wang, in press). Inspired by a method used for determining the proper area for computing cancer incidence rate (Tiwari and Rushton, 2005), this paper proposes a new method for determining the physician and population catchment sizes of the 2SFCA method by incrementally increasing the catchment until a base population (BP) and a physician-to-population ratio (PPR) criteria are met (hereafter referred as the Variable 2SFCA method or V2SFCA). Preliminary application of the V2SFCA method to a ten county region of northern Illinois around the Chicago area has shown that it dynamically finds the appropriate catchment sizes across the urban to suburban/rural continuum and reveals more details of spatial variation in accessibility compared to the previous 2SFCA using fixed catchment sizes.

2. Methodology

The new V2SFCA method for determining the catchment sizes follows a similar two-step procedure as the original 2SFCA to take into consideration the spatial interaction between physicians and populations (see Fig. 1 for a flow diagram).
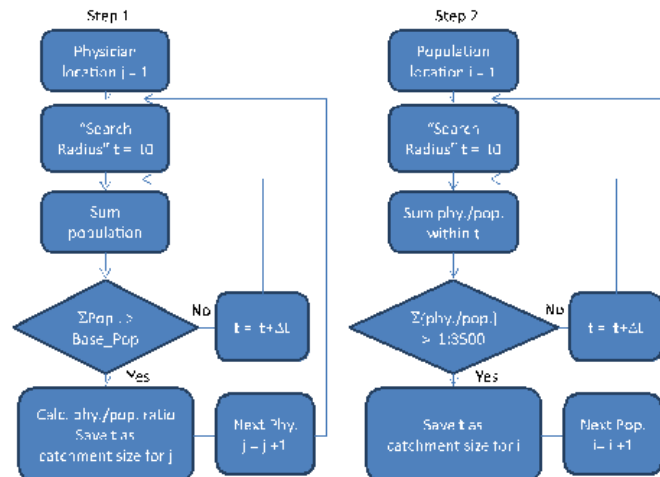

Fig. 1. Flow diagram of steps in determining variable catchment sizes for the 2SFCA method.

2.1. Variable service catchment size

In step 1, for each physician location, search all population locations (population-weighted census tract centroids) within a specified initial travel time t_0 (e.g., $t_0 = 10$ min) and sum the population. If the summed population is less than the BP threshold, the "search radius" time (or catchment size) is increased by a small increment Δt (e.g., $\Delta t = 2$ min) and the process is repeated until the summed population reaches the BP threshold. The travel time at that point is considered the catchment size for that physician location. At this step, the PPR is also calculated and assigned to the physician location.

2.2. Variable population catchment size

In step 2, for each population location, search all physician locations within an initial travel time t_0 (e.g., $t_0 = 10$ min) and sum PPRs of these physician locations obtained from the first step. If the summed PPR is less than the predefined threshold, the time (or catchment size) is increased by a small increment Δt (e.g., $\Delta t = 2$ min) and the process is repeated until the summed PPR exceeds the predefined threshold. The travel time at that point is set as the catchment size for that population location.

2.3. Distance decay function

Once these catchment sizes are determined, the 2SFCA method enhanced with distance decay function (Luo and Qi, 2009) is applied using these newly determined and spatially variable catchment sizes to find the spatial accessibility (i.e., replacing the fixed d_0 as described in Section 1).

Step 1: For each physician location j, search all population locations (k) that are within the catchment of physician location j (C_j), and compute the physician-to-population ratio, R_j, within the catchment area, discounted by distance decay function $f(d_{kj})$:

$$R_j = \frac{S_j}{\sum_{k \in \{d_{kj} \in C_j\}} P_k f(d_{kj})} \qquad (4)$$

Step 2: For each population location i, search all physician locations (j) that are within the catchment area of population location i (C_i), and sum up the physician to population ratios, R_j, at these locations, discounted by distance decay function $f(d_{ij})$:

$$A_i^F = \sum_{j \in \{d_{ij} \in C_i\}} R_j f(d_{ij}) \qquad (5)$$

In other words, there are a total of four steps in the whole process: two steps to determine the catchment sizes and two steps to calculate accessibility. These steps were implemented in a Fortran program. The travel time between origin–destination (OD) pairs only needs to be computed once.

3. Study area and data

To demonstrate the advantages of the V2SFCA method, it has been applied to examine the spatial accessibility to primary care physicians in a group of 10 primarily urban or suburban counties around Chicago in Northern Illinois: Cook, DeKalb, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, McHenry, and Will (see Fig. 2). Since the focus of the paper is to demonstrate methodology, here we report results using 1990 data, which best illustrate the methodology. The population data were extracted from the 1990 Census Summary File 1. In addition to the summary files, the spatial coverages of census tracts and census blocks were generated using the 1990 Census TIGER/Line files. The population density by census tracts is shown in Fig. 2, which
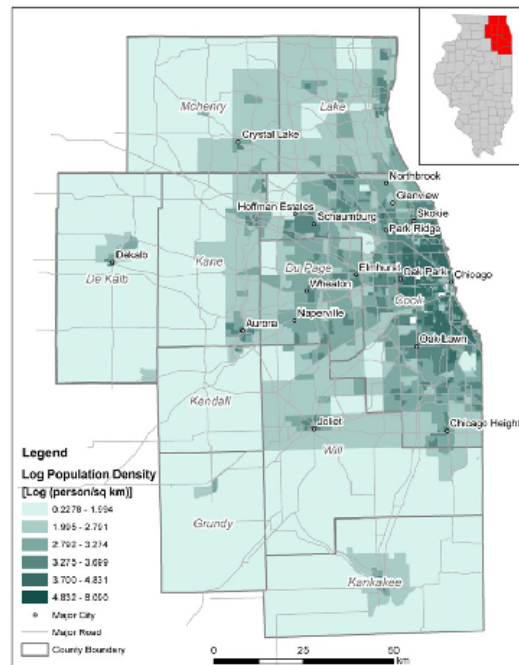

Fig. 2. 1990 population density of study area. Also shown are county boundaries and major cities in the study area. Italicized font labels are county names. Regular font labels are selected cities.

Table 1
Basic statistics of population and physician data of the study area.

	Number of locations	Total
Population	1804	7,507,113
Physician	3990	7845

roughly represents the urban to suburban/rural continuum. Since portions of the study area are suburban/rural in nature with large census tracts, the population weighted centroid has been used to represent the location of the population in lieu of the geographic centroid (Luo and Wang, 2003). The basic statistics of the population data are summarized in Table 1.

Primary care physician data of Illinois for 1989 were obtained from the Physician Masterfile of the American Medical Association (AMA) and were geocoded based on their office addresses with a matching rate of > 95% using an ArcGIS software. The 1989 data is up to date to December of 1989, and is a good representation of the 1990 data. Physicians practicing at the same location were dissolved into one point with the number of physicians at that location added as an attribute of that point. The basic statistics of the physician data are summarized in Table 1.

4. Calculation and parameters

4.1. Travel time

The travel time between each physician and population location can be calculated using the Origin–Destination (OD) Cost matrix function of ArcGIS Network Analyst Extension. Since this is

a computationally intensive process, to reduce computation time, we only computed pairs within 90 min of each other, which resulted in 4,306,699 OD pairs.

4.2. BP and PPR Thresholds

Conceptually, there needs to be some minimum population to support a doctor. This base population often fluctuates between rural and urban areas. In designating Health Professional Shortage Area (HPSA) and Medically Underserved Area or Population (MUA/P), US Department of Health and Human Services (DHHS) uses a 30-minute travel time and a physician-to-population ratio of 1:3500 as thresholds (see (Luo and Qi, 2009) for a brief review and http://bhpr.hrsa.gov/shortage/hpsas/designationcriteria/index.html for details). Following these practices, we used the average population within a 30-minute travel time around the physician locations as our guide to derive the BP threshold in step 1 (which is approximately 500,000 for the study area) and adopted 1:3500 as the PPR threshold in step 2. Of course, other values can be used depending on the specific situations or research contexts. The effects of using different threshold values will be discussed further in Section 6.

4.3. Distance decay functional form

For the purpose of illustrating methodology, we divided each catchment into three equal time zones (e.g., if a catchment is 45 min, then zone 1 is within 15 min, zone 2 from 15 to 30 min and zone 3 from 30 to 45 min) and adopted the simple stepwise Gaussian function to calculate the weights for the three zones (Kwan, 1998; Luo and Qi, 2009):

$$f(d_{ij}) = f(d_{kj}) = f(z) = \exp(-(z-1)^2/\beta) \quad (6)$$

where z is the zone number and

$$z = \begin{cases} 1, & \text{if } 0 < d_{kj} \le \frac{C_j}{3} \text{ or if } 0 < d_{ij} < \frac{C_j}{3} \\ 2. & \text{if } \frac{C_j}{3} < d_{kj} < \frac{2C_j}{3} \text{ or if } \frac{C_j}{3} < d_{ij} < \frac{2C_j}{3} \\ 3. & \text{if } \frac{2C_j}{3} < d_{kj} \le C_j \text{ or if } \frac{2C_j}{3} < d_{ij} \le C_j \end{cases} \quad (7)$$

Here we used $\beta = 1.15$ and obtained the following weights to calculate the spatial accessibility values following the steps described above:

$$W_{kj} \text{ or } W_{ij} = \begin{cases} 1, & \text{if } d_{kj} \text{ or } d_{ij} \in \text{zone 1} \\ 0.42, & \text{if } d_{kj} \text{ or } d_{ij} \in \text{zone 2} \\ 0.03, & \text{if } d_{kj} \text{ or } d_{ij} \in \text{zone 3} \end{cases} \quad (8)$$

Under this implementation, Eqs. (4) and (5) become (note the weights are applied to both steps):

$$R_j = \frac{S_j}{\sum_{k \in \{d_{kj} \le C_j\}} P_k W_{kj}} \quad (9)$$

$$A_i^F = \sum_{j \in \{d_{ij} \le C_j\}} R_j W_{ij} \quad (10)$$

For comparison, we also computed the accessibility using fixed 30-minute catchment sizes and the same distance decay weights for 3 zones. In other words, the only difference here is in the catchment size. Since data outside of the study area was not included in the calculation, caution needs to be exercised in the interpretation of results near the edge of the study area.

5. Results

Table 2 shows the basic statistics of the physician and population catchment sizes using the following parameter values:

BP=500,000 and PPR=1:3500. This serves as our base case for discussion. The physician catchment size ranges from 14 to 86 min with a mean of 30 min and a standard deviation of 11 min. The population catchment sizes are generally smaller than the physician catchment sizes, ranging from 10 to 68 min with a mean of 21 min and a standard deviation of 11 min. As the physicians are often located in urban centers, they are expected to have larger catchment sizes because they will likely serve surrounding rural populations. On the other hand, population catchment sizes are smaller because urban populations are less likely to seek care in more rural areas (McGrail and Humphreys, 2009b). The spatial distribution of both physician and population catchment sizes are shown in Fig. 3 as circles of different sizes. The catchment sizes for both physician and population locations are smaller in urban areas and larger in suburban/rural areas because there are more doctors available in urban areas, causing people in suburban/rural areas to travel further distances and longer times to obtain care. This catchment size distribution correctly reflects the reality.

Fig. 4 compares the spatial distribution of accessibility scores in the study area using the fixed catchment size of 30-minutes for both physician and population locations and using the variable catchment sizes determined by the new method shown in Fig. 3. Note that distance decay has been considered in both cases using step-wise Gaussian weights of (1.00, 0.42, 0.03; Luo and Qi, 2009) and the only difference is in the catchment sizes. From this case study it is clear that the fixed catchment size method tends to overestimate the accessibility, in both urban and suburban/rural areas, as compared to the variable catchment method. This is the case because urban populations typically do not have to travel 30 min to find adequate numbers of primary care physicians. By using a fixed 30-minute catchment size, the number of physicians available to these populations may have been overestimated. On the other hand, physicians in rural areas often have to serve a larger area and by limiting the catchment size to a fixed 30 min, the population they serve is underestimated, leading to a higher accessibility score. Overall, the V2SFCA method has resulted in more detailed spatial variation of accessibility in urban areas. The high accessibility areas are mostly located around the major towns/cities, e.g., Aurora, Chicago Heights, Elmhurst, Joliet, Naperville, Oak Lawn, and Wheaton (see Figs. 2 and 4). The results using the V2SFCA method thus are more logical and consistent with what we know about physician utilization patterns in urban and rural settings as compared to those of the fixed catchment method. To better compare the two results, accessibility scores by census tract have been plotted in Fig. 5, confirming that the fixed size method overestimates accessibility for nearly all of the tracts as compared to the new method.

Table 2
Basic statistics of the dynamically determined population and physician catchments (measured in travel time in minutes) using different values for base population (BP) and physician-to-population ratio (PPR).

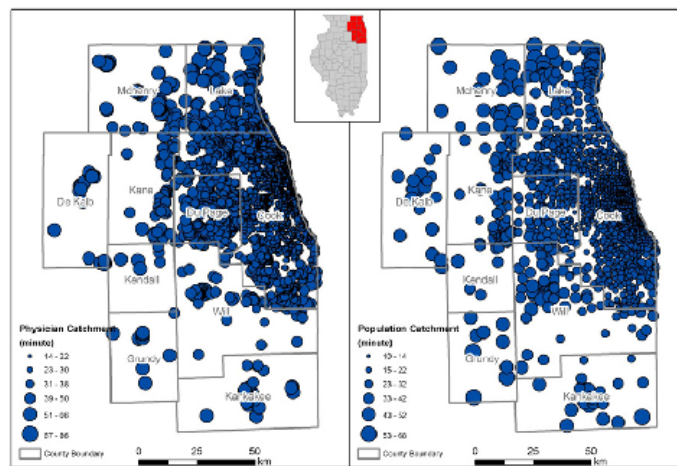| BP	PPR		Min.	Max.	Avg.	Std. Dev.
500,000	1:3500	Physician	14	86	30.02	11.10
		Population	10	68	20.85	11.18
700,000	1:3500	Physician	18	90	34.93	12.37
		Population	10	74	23.29	12.73
380,000	1:3500	Physician	12	74	26.60	10.04
		Population	10	64	19.14	10.10
500,000	1:3000	Physician	14	86	30.02	11.10
		Population	10	70	21.97	11.87
500,000	1:4000	Physician	14	86	30.02	11.10
		Population	10	68	19.91	10.63

Fig. 3. Catchment sizes for physician locations and population locations. The different size circles are symbols representing different catchment sizes.
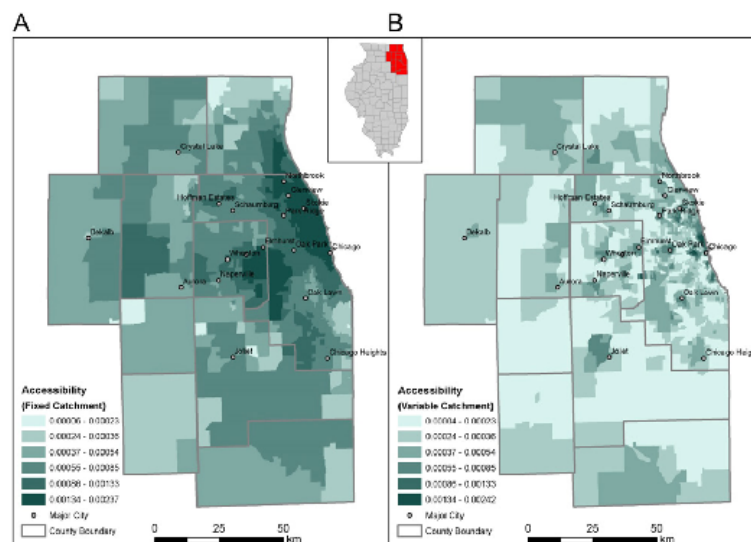

Fig. 4. Spatial distribution of accessibility scores using the fixed catchment size 2SFCA method (A) and the variable catchment size 2SFCA method (B). Note the legends have the same divisions except for the upper and lower limits.

For the more rural areas, we will only examine the counties of Kane and Will, because they are located in the interior of the study area and should be devoid of any edge effect mentioned earlier. From the population density map (Fig. 2), it is evident that the western half of Kane and southern half of Will counties are more rural. However, the fixed catchment size method shows higher accessibility values in those locations, which is counter-intuitive and may reflect more "choices" of physicians in nearby towns rather than actual access to those physicians (McGrail and Humphreys, 2009b). In contrast, the variable catchment size method correctly shows higher accessibilities in the eastern half of Kane and northern half of Will counties, particularly around the population centers of Aurora and Joliet.

6. Discussion

6.1. Parameter sensitivity tests

The V2SFCA method requires the inclusion of two thresholds, BP (for step 1) and PPR (for step 2), both of which can be easily incorporated into the current practices in physician shortage designation. By referencing the 30 minute travel time for defining a rational service area adopted by DHHS, we derived the BP threshold using the mean of populations within 30-minute travel time of all physician locations as our guide. For the application of this method in rural areas, we can derive the BP threshold based on the mean of populations around a larger travel time
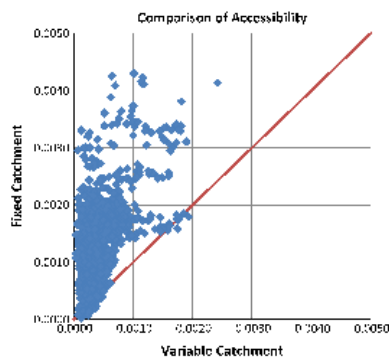
Fig. 5. Comparison of accessibility between fixed catchment and variable catchment methods. The red line is the 1:1 line. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Fig. 6. (A) Effect of different base population (BP) on accessibility result (keeping PPR in step 2 at 1:3500). (B) Effect of different physician-to-population ratio (PPR) on accessibility result (keeping BP in step 1 at 500,000).

(e.g., 60-minutes) of the physician locations. To test the sensitivity of using different BP thresholds on the final accessibility result, we used two different values: 380,000 and 700,000. The spatial patterns of the results are consistent with those shown in Fig. 4B, again revealing much more detailed spatial distribution within urban areas and more intuitively reasonable patterns in rural areas as compared to results using the fixed catchment size method. The large BP threshold tends to result in large catchment sizes (see Table 2) and lower accessibility scores, especially for high accessibility areas (urban centers). This is clearly shown in Fig. 6A, where high accessibility tracts using BP threshold of 700,000 are plotted below the tracts using a BP threshold of 500,000. For these urban centers, the use of a large BP threshold means the catchment will likely expand into rural areas. As such, more rural populations will be included in the catchment, but since there are not many physicians in rural areas, a lower physician to population ratio and lower accessibility score will result (Fig. 6A). The spatial patterns of the differences between accessibilities using different BP thresholds (not shown) confirm the above observation. The reverse is true when using a smaller BP (380,000) (see Table 2 and Fig. 6A).

For the PPR threshold (in step 2), we simply adopted the DHHS's standard 1:3500 ratio used for defining rational service area for physician shortage area designation. To test the sensitivity of using different PPR thresholds on the final accessibility result, we calculated results using two thresholds: 1:4000 and 1:3000 while keeping other parameters the same as in Fig. 4. The spatial patterns of accessibility using higher and lower PPR thresholds are again similar to the results shown in Fig. 4B. Since the BP threshold is kept the same, the physician catchment size is also the same (Table 2). A larger PPR threshold (1:3000) generally resulted in a larger population catchment size (Table 2). Fig. 6B shows that for tracts with lower accessibility (rural areas), a larger PPR (1:3000) resulted in higher accessibility than a smaller PPR (1:3500). For these rural populations, as catchment size is increased to satisfy the large PPR threshold, the catchments tend to expand into urban areas and include more physician locations, thus resulting in higher accessibility. (A similar phenomenon can also be observed for some low accessibility tracts in Fig. 6A for the same reasons.) The reverse is true for the case using a smaller PPR threshold (1:4000). It is interesting to note that for high accessibility points (urban centers) in Fig. 6B, there is virtually no difference in accessibilities from using different PPR thresholds. This is because for 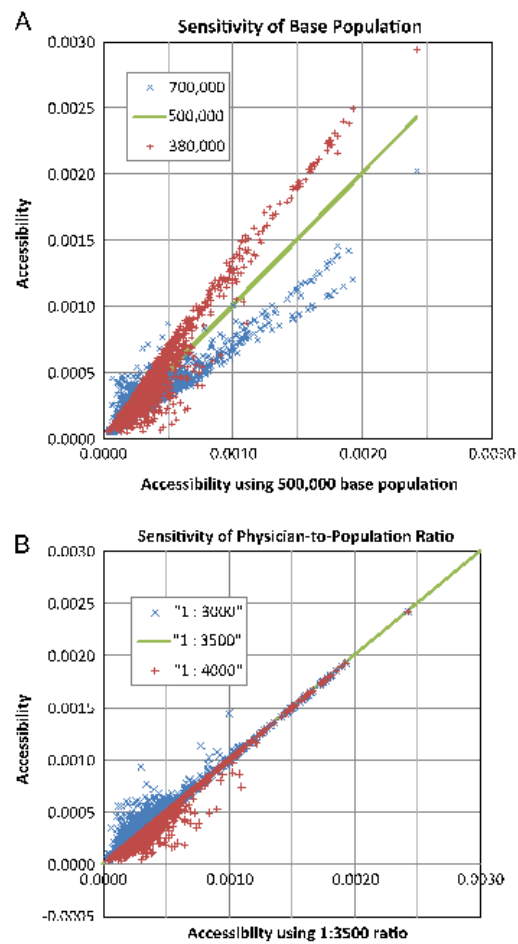these urban centers, expanding the catchment size into rural areas will unlikely gain any more physician locations. The spatial patterns of the differences between accessibilities using different PPRs (not shown) confirm the above observation.

6.2. Distance decay functional form

As discussed in Wang (in press), other distance decay function forms, such as a continuous function (gravity function or Gaussian function), a discrete step wise function (this paper), or a hybrid function form of the previous two, can be easily incorporated into the new methodology. Luo and Wang (2003) showed that 2SFCA is a special case of gravity model. Recently, Shi et al. (in press) has demonstrated that 2SFCA, gravity model, and kernel density estimator are inherently related. They argued that the different functional forms for determining distance decay weight will not significantly impact the spatial pattern of the estimates, which is a well-accepted conclusion in the kernel density estimation study (Silverman, 1986).

RA 14

6.3. Policy implications

The fixed catchment size 2SFCA (even with distance decay incorporated) tends to overestimate the accessibility and may result in missing the truly underserved areas. As pointed out before, some of the higher accessibility score in rural areas between towns occurs because the method is measuring more "choices" of physicians in nearby towns rather than actual access to those physicians (McGrail and Humphreys, 2009b). Using the new V2SFCA method would address this problem and allow most efficient and effective use of limited resources to the neediest population in rural areas. In addition, since the BP and PPR thresholds can be easily related to the current practices of physician shortage designation, this method can be readily incorporated into the existing physician shortage area designation methods.

7. Summary

Despite the many advantages of the original 2SFCA method in measuring potential access to primary care, the exclusion of distance decay and the choice of a single constant catchment size greatly limits its potential in certain scenarios, especially in rural areas (McGrail and Humphreys, 2009b). The distance decay issue has been addressed by using a continuous kernel density function (Guagliardo, 2004) or a Gaussian function (Dai, 2010) or using step wise discrete weights (Luo and Qi, 2009). The major contribution of this paper is to address the issue of fixed catchment size. We introduced an innovative method in determining catchment sizes using the same principle of 2SFCA that considers both demand and supply and dynamically determines the size across the urban, suburban, and rural continuum. Although two thresholds (BP and PPR) are introduced, they can be easily related to existing practices of physician shortage designation. The result of applying this method in the Chicago region has revealed much more detailed variation of spatial accessibility in urban areas. In addition, the spatial accessibility patterns in rural areas are more consistent with intuition, showing the highest accessibility around major cities, which makes more practical sense. Sensitivity tests show that the spatial accessibility from the V2SFCA method in urban areas tends to be more sensitive to BP threshold while that in rural areas tends to be more sensitive to PPR threshold.

We believe the new V2SFCA method we introduced here offers a practical way of determining the proper catchment sizes for both physician and population locations. Since the BP and PPR thresholds can be easily related to the current practices of physician shortage designation, this method can be easily incorporated into existing physician shortage area designation methods.

Acknowledgment

References
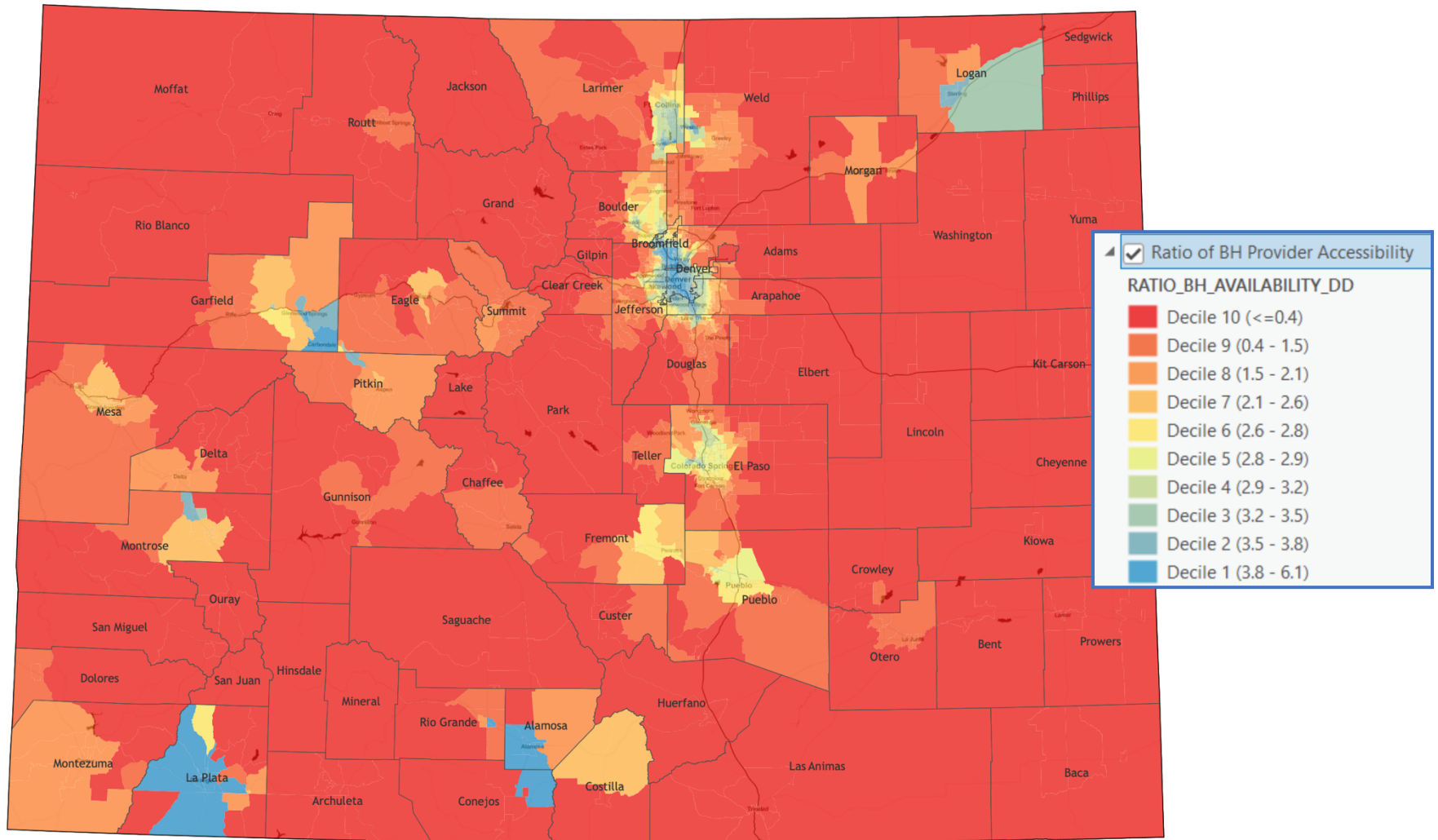
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Sample Model Results
State-Designated Substance Use Disorder Health Professional Shortage Areas
(SUD-HPSA) by Decile in Colorado

These maps are test results of the methodology with available data at the time of analysis. The following are GIS maps that represent the number of BH treatment services encounters available to resident civilian males and females ages 15 and above who are experiencing an episode of a MI or SUD using the methodology communicated in the rule and described in the Statement of Basis and Purpose.

The map reflects the number of BH treatment services encounters available to residents ages 15 and above within each Census Block Group based on the two-step floating catchment area methodology, binned by decile. Each decile bin contains 406 census block groups (4,058/10). All census block groups that are not blue fall below an estimated provider capacity of eight visits per person affected by SUD. These areas of the state may receive formal designation as a SUD-HPSA under these proposed rules.

Model results: Colorado BH HPSA *(2023)*

Ratio of BH Provider Accessibility

RATIO_BH_AVAILABILITY_DD

- Decile 10 (<=0.4)
- Decile 9 (0.4 - 1.5)
- Decile 8 (1.5 - 2.1)
- Decile 7 (2.1 - 2.6)
- Decile 6 (2.6 - 2.8)
- Decile 5 (2.8 - 2.9)
- Decile 4 (2.9 - 3.2)
- Decile 3 (3.2 - 3.5)
- Decile 2 (3.5 - 3.8)
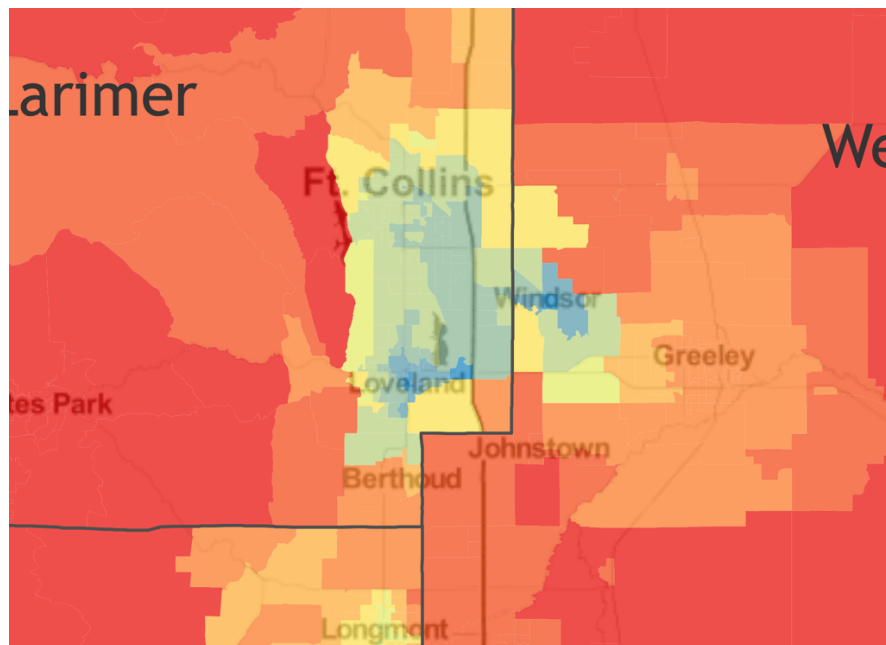- Decile 1 (3.8 - 6.1)

SE 1

Model results: Denver metro BH HPSA detail *(2023)*
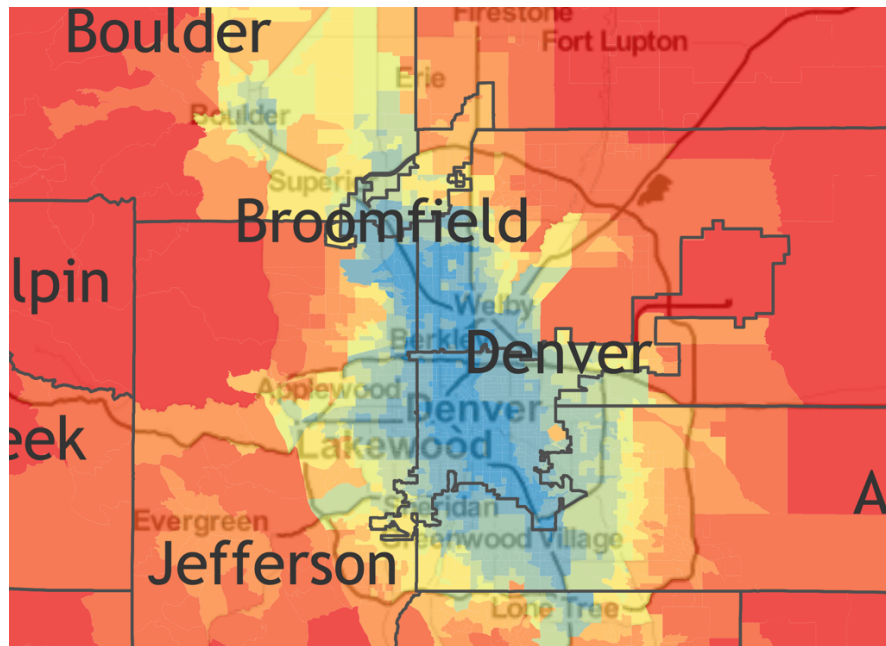
Model results: Fort Collins, Greeley, Loveland BH HPSA detail *(2023)*

STAKEHOLDER ENGAGEMENT
for Amendments to
6 CCR 1015-6, State-Designated 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 rule amendments:

State Government

Organization	Representative
Department of Health Care Policy and Financing	Sandra Wetenkamp, Health Network Accountability Specialist, Cost Control & Quality Improvement
Behavioral Health Administration	Mary McMahon, Manager CAC Clinical Training; Kristin Ingstrup, Associate Director, Workforce Development - Employer Relations & Intergovernmental Affairs
Department of Public Health and Environment	Devon Wilford, Health and Geographic Information System Analysist; Curt Drennen, Psy.D., Branch Supervisor Health and Safety Unit
Colorado Legislature	Opioid and Other Substance Use Disorders Study Committee

Federal Government

Organization	Representative
Health Resources and Services Administration (Region 8)	Kim Patton, Psy.D., Public Health Analyst/Behavioral Health Liaison
Substance Abuse Mental Health Services Administration (Region 8)	Charles Smith, Ph.D., Regional Administrator, Region VIII

Non-governmental Partners

Organization	Representative
Colorado Behavioral Health Care Council	Frank Cornelia, Deputy Executive Director; Edie Sonn, Senior Director of External Affairs

Colorado Community Health Network	Suzanne Smith, Health Center Operations Director
Colorado Medical Society	Chet Seward, Senior Director, Division of Health Care Policy
Mental Health Colorado	Vincent Atchity, President and CEO
The Steadman Group	J.K. Costello, MD, Senior Consultant
University of Denver, Graduate School of Social Work	Michael Talamantes, MSW, Clinical Professor
Wellbeing Trust	Benjamin Miller, PsyD., Chief Strategy Officer
Various stakeholder presentations via Zoom between March 3, 2023, and August 22, 2023	200 participants cumulatively from across sectors and government

Stakeholder meetings have been ad hoc and one-on-one though the development of this request for rulemaking packet.

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 10th 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:_____ _____

An Act

SE 4
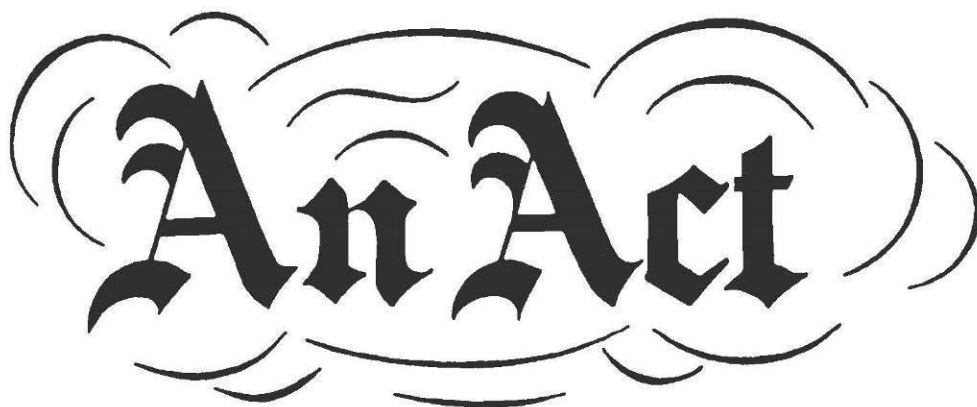
(b) With an opioid epidemic and increasing overdose rates affecting all corners of the state, the need for health professionals who can treat patients with substance use disorders is particularly acute;

(c) Additionally, providers who seek to hire mental health and substance use disorder professionals report difficulty in filling positions, leading to reduced services despite having the physical space for beds or outpatient treatment rooms;

(d) The state currently operates a loan repayment program, known as the Colorado health service corps, that targets the need for primary care services in health professional shortage areas throughout the state by providing loan repayment to a health care professional who commits to practicing and providing primary care in a shortage area for a minimum period;

(e) The Colorado health service corps program, in its current form, is limited to specific providers providing primary or psychiatric care in areas of the state designated as health professional shortage areas under federal guidelines;

(f) Further, the existing loan repayment program is available only to providers who have already obtained a license, which can require at least one to two years of supervised practice, depending on the license type, after completion of a master's or doctorate degree, yet the need for assistance with repaying student loans is often greatest during this supervised practice period since salary earnings are lower;

(g) While the current program requirements are well suited for providing greater access to primary and psychiatric care, they do not address the increasing demand for behavioral health care services to treat other mental health or substance use disorders and the financial burdens faced by candidates for licensure who are progressing to licensure but are not eligible for loan repayment and are often working at an entry-level salary;

(h) Moreover, the federal guidelines for determining a health professional shortage area do not adequately measure the shortage of other mental health or substance use disorder professionals in areas of the state experiencing an increased need for behavioral health care services;

PAGE 2-SENATE BILL 18-024

(i) In order to expand access to behavioral health care providers and behavioral health care services in areas of the state where the need for behavioral health care is great and the access to care is limited, it is important to:

(I) Allow behavioral health care providers and candidates for licensure as a behavioral health care provider to participate in the loan repayment program through the Colorado health service corps to provide incentives to those providers and candidates to deliver behavioral health care services in health professional shortage areas in the state and to ease the financial burdens they face when practicing in health professional shortage areas;

(II) Establish a scholarship program to provide financial assistance to addiction counselors seeking initial or a higher level of certification to defray education and training costs in exchange for a commitment to provide behavioral health care services in health professional shortage areas;

(III) Allow the primary care office, under guidelines adopted by the state board of health, to designate health professional shortage areas in the state using state-specific guidelines rather than federal guidelines;

(IV) Add representatives of substance use disorder service providers to the advisory council that reviews and makes recommendations on loan repayment applications; and

(V) Dedicate an amount of money from the marijuana tax cash fund to provide loan repayment to behavioral health care providers and candidates for licensure and scholarships to addiction counselors in order to expand access to behavioral health care services to individuals suffering from a mental health or substance use disorder.

(2) The general assembly further finds that expanding access to the health care professional loan repayment program to behavioral health care providers will expand access to behavioral health care services and treatment for people with mental health or substance use disorders, and therefore, the use of retail marijuana tax revenues to fund loan repayments for behavioral health care providers under the Colorado health service corps program is authorized under section 39-28.8-501 (2)(b)(IV)(C), C.R.S.

PAGE 3-SENATE BILL 18-024

(a) A LICENSED ADDICTION COUNSELOR;

(b) A CERTIFIED ADDICTION COUNSELOR;

(c) A LICENSED PROFESSIONAL COUNSELOR;

(d) A LICENSED CLINICAL SOCIAL WORKER;

(e) A LICENSED MARRIAGE AND FAMILY THERAPIST;

(f) A LICENSED PSYCHOLOGIST;

(g) A LICENSED PHYSICIAN ASSISTANT WITH SPECIFIC TRAINING IN SUBSTANCE USE DISORDERS;

(h) AN ADVANCED PRACTICE NURSE WITH SPECIFIC TRAINING IN SUBSTANCE USE DISORDERS, PAIN MANAGEMENT, OR PSYCHIATRIC NURSING; OR

(i) A PHYSICIAN WITH SPECIFIC BOARD CERTIFICATION OR TRAINING IN ADDICTION MEDICINE, PAIN MANAGEMENT, OR PSYCHIATRY.

(1.5) "BEHAVIORAL HEALTH CARE SERVICES" MEANS SERVICES FOR THE PREVENTION, DIAGNOSIS, AND TREATMENT OF, AND THE RECOVERY FROM, MENTAL HEALTH AND SUBSTANCE USE DISORDERS.

(1.7) "CANDIDATE FOR LICENSURE" MEANS A PERSON WHO:

(a) IS A CANDIDATE FOR A LICENSE AS A LICENSED PSYCHOLOGIST, CLINICAL SOCIAL WORKER, MARRIAGE AND FAMILY THERAPIST, LICENSED PROFESSIONAL COUNSELOR, OR ADDICTION COUNSELOR;

(b) HAS COMPLETED A MASTER'S DEGREE OR, FOR A PSYCHOLOGIST LICENSURE CANDIDATE, HAS COMPLETED A DOCTORAL DEGREE;

(c) HAS NOT YET COMPLETED THE SUPERVISED EXPERIENCE HOURS REQUIRED FOR LICENSURE PURSUANT TO SECTION 12-43-304 (1)(d), 12-43-404 (2)(c), 12-43-504 (1)(d), 12-43-603 (1)(d), OR 12-43-804 (1)(g), AS APPLICABLE; AND

PAGE 6-SENATE BILL 18-024

(d) IS OR WILL BE PROVIDING BEHAVIORAL HEALTH CARE SERVICES.

(6.5) "HEALTH PROFESSIONAL SHORTAGE AREA" MEANS A FEDERALLY DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREA OR A STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREA.

(12) "SCHOLARSHIP PROGRAM" MEANS THE SCHOLARSHIP PROGRAM FOR ADDICTION COUNSELORS CREATED IN SECTION 25-1.5-503.5.

(13) "STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREA" MEANS AN AREA OF THE STATE DESIGNATED BY THE PRIMARY CARE OFFICE, IN ACCORDANCE WITH STATE-SPECIFIC METHODOLOGIES ESTABLISHED BY THE STATE BOARD BY RULE PURSUANT TO SECTION 25-1.5-404 (1)(a), AS EXPERIENCING A SHORTAGE OF HEALTH CARE PROFESSIONALS OR BEHAVIORAL HEALTH CARE PROVIDERS.

(14) "UNDERSERVED POPULATION" MEANS ANY OF THE FOLLOWING:

(a) INDIVIDUALS ELIGIBLE FOR MEDICAL ASSISTANCE UNDER ARTICLES 4 TO 6 OF TITLE 25.5;

(b) INDIVIDUALS WHO ARE PROVIDED SERVICES BY A BEHAVIORAL HEALTH CARE PROVIDER AND ARE EITHER CHARGED FEES ON A SLIDING SCALE BASED UPON INCOME OR ARE SERVED WITHOUT CHARGE.

SECTION 6. In Colorado Revised Statutes, 25-1.5-503, **amend** (1), (2), (5), and (6) as follows:

25-1.5-503. Colorado health service corps - program - creation - conditions - rules. (1) (a) (I) Beginning July 1, 2009, The primary care office shall maintain and administer, subject to available appropriations, the Colorado health service corps. Subject to available appropriations, the Colorado health service corps shall provide loan repayment for certain eligible:

(A) Health care professionals who provide primary health services; Beginning July 1, 2011, the Colorado health service corps shall also provide loan repayment for certain eligible

(B) Nursing faculty or health care professional faculty members in

PAGE 7-SENATE BILL 18-024

and donations or ~~moneys~~ MONEY appropriated by the general assembly for the purpose of implementing the Colorado health service corps. In administering the Colorado health service corps, the primary care office shall collaborate with appropriate partners as needed to maximize the federal ~~moneys~~ MONEY available to the state for state loan repayment programs through the federal department of health and human services. The selection of health care professionals, BEHAVIORAL HEALTH CARE PROVIDERS, CANDIDATES FOR LICENSURE, nursing faculty members, and health care professional faculty members for participation in the Colorado health service corps is exempt from the competitive bidding requirements of the "Procurement Code", articles 101 to 112 of title 24. ~~C.R.S.~~

(c) THE FOLLOWING PROVIDERS ARE NOT ELIGIBLE FOR LOAN REPAYMENT THROUGH THE COLORADO HEALTH SERVICE CORPS:

~~(c)~~ (I) Health care professionals WHO ARE NOT practicing in ~~nonprimary~~ PRIMARY care specialties or providing ~~nonprimary~~ PRIMARY health services; ~~are not eligible for loan repayments through the Colorado health service corps~~ AND

(II) BEHAVIORAL HEALTH CARE PROVIDERS AND CANDIDATES FOR LICENSURE WHO ARE NOT PROVIDING BEHAVIORAL HEALTH CARE SERVICES.

(d) (I) As a condition of receiving a loan repayment through the Colorado health service corps, a health care professional OR BEHAVIORAL HEALTH CARE PROVIDER must enter into a contract pursuant to which the health care professional OR BEHAVIORAL HEALTH CARE PROVIDER agrees to practice for at least two years in a community that is located in a ~~federally designated~~ health professional shortage area. The health care professional OR BEHAVIORAL HEALTH CARE PROVIDER, AS APPLICABLE, the primary care office, and the community employer with which the health care professional OR BEHAVIORAL HEALTH CARE PROVIDER is practicing must be parties to the contract.

(II) As a condition of receiving a loan repayment through the Colorado health service corps, a nursing faculty or health care professional faculty member must enter into a contract pursuant to which he or she agrees to serve at least two consecutive academic years or their equivalent in a qualified faculty position. The nursing faculty or health care professional faculty member, the primary care office, and the educational

PAGE 9-SENATE BILL 18-024

institution where the qualified faculty position is located must be parties to the contract.

(III) AS A CONDITION OF RECEIVING A LOAN REPAYMENT THROUGH THE COLORADO HEALTH SERVICE CORPS, A CANDIDATE FOR LICENSURE MUST ENTER INTO A CONTRACT PURSUANT TO WHICH THE CANDIDATE FOR LICENSURE AGREES TO PRACTICE FOR AT LEAST TWO YEARS AFTER OBTAINING THE LICENSE, PLUS AN ADDITIONAL AMOUNT OF TIME EQUIVALENT TO THE TIME SPENT OBTAINING THE SUPERVISED EXPERIENCE HOURS REQUIRED FOR LICENSURE WHILE PARTICIPATING IN THE PROGRAM, IN A COMMUNITY THAT IS LOCATED IN A HEALTH PROFESSIONAL SHORTAGE AREA. THE CANDIDATE FOR LICENSURE, THE PRIMARY CARE OFFICE, AND THE COMMUNITY EMPLOYER WITH WHICH THE CANDIDATE FOR LICENSURE IS PRACTICING MUST BE PARTIES TO THE CONTRACT.

(2) Subject to available appropriations, the primary care office shall annually select health care professionals, BEHAVIORAL HEALTH CARE PROVIDERS, CANDIDATES FOR LICENSURE, nursing faculty members, and health care professional members from the list provided by the advisory council pursuant to ~~section 25-1.5-504 (6)~~ SECTION 25-1.5-504 (5)(a) to participate in the Colorado health service corps.

(5) (a) A health care professional participating in the Colorado health service corps shall not practice with a for-profit private group or solo practice or at a proprietary hospital or clinic.

(b) FOR A BEHAVIORAL HEALTH CARE PROVIDER OR CANDIDATE FOR LICENSURE APPLYING TO PARTICIPATE IN THE COLORADO HEALTH SERVICE CORPS, THE ADVISORY COUNCIL SHALL PRIORITIZE BEHAVIORAL HEALTH CARE PROVIDERS AND CANDIDATES FOR LICENSURE WHO ARE PRACTICING WITH A NONPROFIT OR PUBLIC EMPLOYER. THE ADVISORY COUNCIL MAY ALSO CONSIDER FOR PARTICIPATION IN THE COLORADO HEALTH SERVICE CORPS BEHAVIORAL HEALTH CARE PROVIDERS AND CANDIDATES FOR LICENSURE WHO ARE PRACTICING WITH A FOR-PROFIT EMPLOYER, SUCH AS A PRIVATE PRACTICE OR OTHER SITE, THAT PROVIDES SERVICES TO AN UNDERSERVED POPULATION.

(6) A contract for loan repayment entered into pursuant to this part 5 must not include terms that are more favorable to health care professionals, BEHAVIORAL HEALTH CARE PROVIDERS, OR CANDIDATES FOR

PAGE 10-SENATE BILL 18-024

PROFESSIONAL SHORTAGE AREA.

(4) SUBJECT TO AVAILABLE APPROPRIATIONS, THE PRIMARY CARE OFFICE SHALL ANNUALLY SELECT APPLICANTS FROM THE LIST PROVIDED BY THE ADVISORY COUNCIL PURSUANT TO SECTION 25-1.5-504 (5)(b) FOR SCHOLARSHIP AWARDS UNDER THIS SECTION.

(5) FOR PURPOSES OF RECOMMENDING SCHOLARSHIP AWARDS, THE ADVISORY COUNCIL SHALL PRIORITIZE ADDICTION COUNSELORS WHO ARE PRACTICING WITH A NONPROFIT OR PUBLIC EMPLOYER. THE ADVISORY COUNCIL MAY ALSO CONSIDER FOR PARTICIPATION IN THE SCHOLARSHIP PROGRAM ADDICTION COUNSELORS WHO ARE PRACTICING WITH A FOR-PROFIT EMPLOYER, SUCH AS A PRIVATE PRACTICE OR OTHER SITE, THAT PROVIDES SERVICES TO AN UNDERSERVED POPULATION.

(6) IN THE EVENT OF A BREACH OF CONTRACT FOR A SCHOLARSHIP ENTERED INTO UNDER THIS SECTION, THE PRIMARY CARE OFFICE SHALL ENFORCE THE CONTRACT AND COLLECT ANY DAMAGES OR OTHER PENALTIES OWED.

SECTION 8. In Colorado Revised Statutes, 25-1.5-504, **amend** (1), (2) introductory portion, (2)(l), and (5); and **add** (2)(n) and (2)(o) as follows:

25-1.5-504. Colorado health service corps advisory council - creation - membership - duties. (1) There is hereby created in the primary care office the Colorado health service corps advisory council to review applications for participation in the Colorado health service corps AND FOR SCHOLARSHIPS UNDER SECTION 25-1.5-503.5 and TO make recommendations to the primary care office pursuant to section 25-1.5-503 (2) AND 25-1.5-503.5 (4).

(2) The advisory council consists of ~~thirteen~~ FIFTEEN members appointed by the governor as provided in this subsection (2). In appointing members of the advisory council, the governor shall ensure that the advisory council includes at least one representative from each of the following organizations:

(l) A physician who is a faculty member of a medical school in Colorado; ~~and~~

PAGE 12-SENATE BILL 18-024

OF THE HEALTH CARE PROFESSIONALS, BEHAVIORAL HEALTH CARE PROVIDERS, CANDIDATES FOR LICENSURE, NURSING FACULTY MEMBERS, AND HEALTH CARE PROFESSIONAL FACULTY MEMBERS PARTICIPATING IN THE COLORADO HEALTH SERVICE CORPS PROGRAM AND THE SCHOLARSHIP PROGRAM;

(b) A description of the programmatic goals of the Colorado health service corps AND THE SCHOLARSHIP PROGRAM, including the present status of and any barriers to meeting those goals;

(c) Existing efforts and potential future projects to overcome any barriers to meeting the programmatic goals of the Colorado health service corps AND THE SCHOLARSHIP PROGRAM;

(d) An analysis of the ~~impact~~ EFFECTS of the Colorado health service corps program AND THE SCHOLARSHIP PROGRAM ON ADDRESSING THE HEALTH CARE AND BEHAVIORAL HEALTH CARE NEEDS OF COMMUNITIES IN COLORADO;

(e) ~~If applicable, results of any surveys conducted of state health professional incentive programs in primary care and any recommendations to individually enhance, improve coordination among, and potentially consolidate existing or potential programs to better address Colorado's primary care workforce issues~~ A SUMMARY OF ANY ASSESSMENT OR EVALUATION OF PROGRAM PERFORMANCE CONDUCTED DURING THE YEAR; and

(f) ~~The number of~~ A DESCRIPTION OF THE nursing faculty or other health care professional faculty members ~~who receive moneys from~~ PARTICIPATING IN the Colorado health service corps and the ~~number of~~ educational institutions where the ~~recipients~~ PARTICIPANTS teach.

(2) THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT SHALL INCLUDE THE REPORT REQUIRED BY THIS SECTION AS PART OF ITS "STATE MEASUREMENT FOR ACCOUNTABLE, RESPONSIVE, AND TRANSPARENT (SMART) GOVERNMENT ACT" HEARING REQUIRED BY SECTION 2-7-203.

(3) THE REPORTING REQUIREMENT IN THIS SECTION IS NOT SUBJECT TO SECTION 24-1-136 (11)(a)(I).

PAGE 14-SENATE BILL 18-024

(4) (a) FOR THE 2018-19 FISCAL YEAR AND EACH FISCAL YEAR THEREAFTER, THE GENERAL ASSEMBLY SHALL APPROPRIATE TWO MILLION FIVE HUNDRED THOUSAND DOLLARS FROM THE MARIJUANA TAX CASH FUND CREATED IN SECTION 39-28.8-501 TO THE PRIMARY CARE OFFICE TO:

(I) PROVIDE LOAN REPAYMENT FOR BEHAVIORAL HEALTH CARE PROVIDERS AND CANDIDATES FOR LICENSURE PARTICIPATING IN THE COLORADO HEALTH SERVICE CORPS; AND

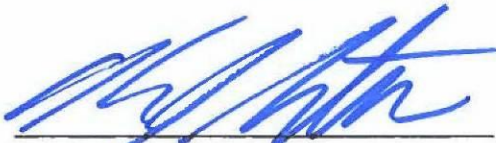(II) AWARD SCHOLARSHIPS TO ADDICTION COUNSELORS PARTICIPATING IN THE SCHOLARSHIP PROGRAM.

(b) SINCE BEHAVIORAL HEALTH CARE PROVIDERS, CANDIDATES FOR LICENSURE, AND ADDICTION COUNSELORS PROVIDE BEHAVIORAL HEALTH CARE SERVICES AND TREATMENT TO PEOPLE WITH SUBSTANCE USE OR MENTAL HEALTH DISORDERS, USE OF MONEY IN THE MARIJUANA TAX CASH FUND IS PERMITTED UNDER SECTION 39-28.8-501 (2)(b)(IV)(C).

SECTION 11. Appropriation. For the 2018-19 state fiscal year, $2,500,000 is appropriated to the department of public health and environment for use by the prevention services division. This appropriation is from the marijuana tax cash fund created in section 39-28.8-501 (1), C.R.S., and is based on an assumption that the division will require an additional 2.0 FTE. To implement this act, the division may use this appropriation for the Colorado health service corps in the primary care office.

SECTION 12. Effective date. This act takes effect July 1, 2018.

SECTION 13. Safety clause. The general assembly hereby finds,

PAGE 16-SENATE BILL 18-024

determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

Kevin J. Grantham
PRESIDENT OF
THE SENATE

Crisanta Duran
SPEAKER OF THE HOUSE
OF REPRESENTATIVES
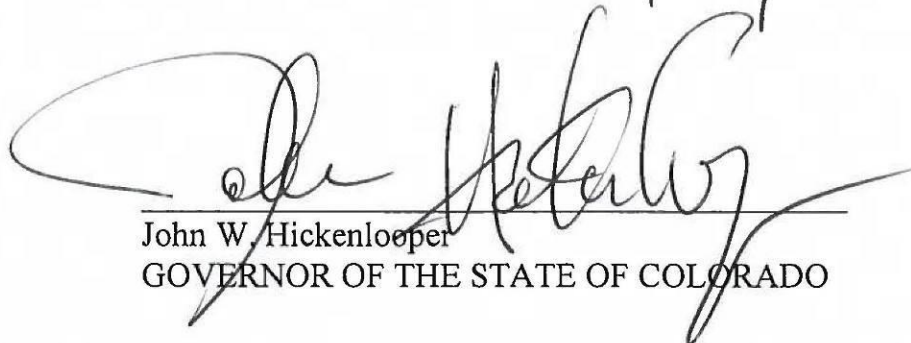
Effie Ameen
SECRETARY OF
THE SENATE

Marilyn Eddins
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

APPROVED 2:19 PM   5/21/18

John W. Hickenlooper
GOVERNOR OF THE STATE OF COLORADO

PAGE 17-SENATE BILL 18-024

to:

(a) Promote and recruit new and existing behavioral health-care providers in Colorado;

(b) Create opportunities for behavioral health-care providers to advance in their field;

(c) Increase the number of peer support professionals across the state;

(d) Support rural communities in developing the skills of their residents;

(e) Offer student loan forgiveness programs and student scholarships;

(f) Expand telehealth options; and

(g) Increase flexibility concerning credentialing and licensing reciprocity among states.

(2) The general assembly further finds that the plan implemented by the behavioral health administration must be based on the work of the behavioral health workforce development workgroup as reflected in the December 2021 "Stakeholder Recommendations to Address the Behavioral Workforce Shortage" and the final report of the behavioral health transformational task force.

(3) (a) The general assembly further finds that:

(I) During the COVID-19 pandemic, the need for behavioral health-care services from qualified behavioral health-care providers increased substantially;

(II) During this unprecedented time, Coloradans may have lost access to or encountered decreased access to behavioral health-care and mental health providers;

(III) Since the COVID-19 pandemic began, rates of psychological

PAGE 2-SENATE BILL 22-181

distress have increased alongside symptoms of anxiety, depression, and other behavioral and mental health disorders, including substance use disorders; and

(IV) A plan to expand and strengthen the behavioral health-care provider workforce in this state will increase the number of behavioral health-care providers and aid in the control and alleviation of behavioral health issues, including access to care, that were brought on and exacerbated by the COVID-19 pandemic.

(b) The general assembly declares that:

(I) The creation and implementation of a behavioral health-care provider workforce plan and the requirement for the behavioral health administration to take other specific actions designed to expand access to behavioral health care are intended to respond to the negative public health impacts of COVID-19 on the behavioral health-care provider workforce and on the people seeking behavioral health-care services, especially on priority populations;

(II) The plan and other targeted actions required by part 3 of article 60 of title 27, Colorado Revised Statutes, and the activities related to the implementation of the plan are important government services;

(III) The federal government enacted the "American Rescue Plan Act of 2021", Pub.L. 117-2, referred to in this section as the "federal act", to provide support to state, local, and tribal governments in responding to the negative public health impacts of the COVID-19 pandemic; and

(IV) Expanding and strengthening the behavioral health-care provider workforce through the implementation of this act is an appropriate use of the money transferred to Colorado under the federal act.

(4) The general assembly further finds that:

(a) Providing additional funding for scholarships and loan repayment for behavioral health-care providers and licensure candidates will increase the number of behavioral health-care providers necessary to expand access to care by those who suffer from the negative impacts brought on by the COVID-19 pandemic;

PAGE 3-SENATE BILL 22-181

(b) Allowing the primary care office to more easily address the growing behavioral health crisis is an important government service; and

(c) Increasing funding to the primary care office for loan repayment and scholarships for behavioral health-care providers is an appropriate use of the money transferred to Colorado under the federal act.

SECTION 2. In Colorado Revised Statutes, **add** part 3 to article 60 of title 27, as follows:

PART 3
BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE

27-60-301. Definitions. AS USED IN THIS PART 3 UNLESS THE CONTEXT OTHERWISE REQUIRES:

(1) "BEHAVIORAL HEALTH ADMINISTRATION" OR "BHA" MEANS THE BEHAVIORAL HEALTH ADMINISTRATION ESTABLISHED IN SECTION 27-60-203.

(2) "BEHAVIORAL HEALTH AIDE" OR "AIDE" MEANS AN INDIVIDUAL WHO:

(a) ADDRESSES MENTAL HEALTH CONDITIONS AND SUBSTANCE USE DISORDERS TO PROMOTE HEALTHY INDIVIDUALS, FAMILIES, AND COMMUNITIES;

(b) DEPENDENT ON THE LEVEL OF CERTIFICATION OF THE INDIVIDUAL, MAY ACT AS A COMMUNITY EDUCATOR AND PROVIDE EXPANDED SERVICES FOR MORE COMPLEX BEHAVIORAL HEALTH NEEDS; AND

(c) IS FAMILIAR WITH STATE AND LOCAL RESOURCES AND CAN PROVIDE REFERRALS AND OTHER ADDITIONAL SERVICES.

(3) "BEHAVIORAL HEALTH PROVIDER" MEANS A RECOVERY COMMUNITY ORGANIZATION AS DEFINED IN SECTION 27-80-126, A RECOVERY SUPPORT SERVICES ORGANIZATION AS DEFINED IN SECTION 27-60-108, OR A LICENSED ORGANIZATION OR PROFESSIONAL THAT PROVIDES DIAGNOSTIC, THERAPEUTIC, OR PSYCHOLOGICAL SERVICES FOR BEHAVIORAL HEALTH CONDITIONS. BEHAVIORAL HEALTH PROVIDERS INCLUDE A RESIDENTIAL CHILD CARE FACILITY, AS DEFINED IN SECTION 26-6-102, AND A FEDERALLY

PAGE 4-SENATE BILL 22-181

QUALIFIED HEALTH CENTER AS DEFINED IN THE FEDERAL "SOCIAL SECURITY ACT", 42 U.S.C. SEC. 1395x (aa)(4).

(4) "COMMUNITY COLLEGE" MEANS A COMMUNITY COLLEGE DESCRIBED IN SECTION 23-60-205 THAT IS GOVERNED BY THE STATE BOARD FOR COMMUNITY COLLEGES AND OCCUPATIONAL EDUCATION.

(5) "FUND" MEANS THE BEHAVIORAL AND MENTAL HEALTH CASH FUND CREATED IN SECTION 24-75-230 (2)(a).

(6) "INSTITUTION OF HIGHER EDUCATION" MEANS A LOCAL DISTRICT COLLEGE OPERATING PURSUANT TO ARTICLE 71 OF TITLE 23 OR AN INSTITUTION OF HIGHER EDUCATION.

(7) "LEARNING MANAGEMENT SYSTEM" MEANS AN ONLINE TRAINING CURRICULUM DEVELOPED FOR HEALTH-CARE PROVIDERS IN RURAL AND METRO AREAS PURSUANT TO SECTION 27-60-112 (2)(b) TO INCREASE COMPETENCIES IN MENTAL HEALTH AND SUBSTANCE USE DISORDERS THAT WILL SUPPORT A HIGH-QUALITY, TRAINED, CULTURALLY RESPONSIVE, AND DIVERSE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE.

(8) "PEER SUPPORT PROFESSIONAL" HAS THE SAME MEANING AS SET FORTH IN SECTION 27-60-108 (2)(b).

(9) "PLAN" MEANS THE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE PLAN CREATED BY THE BHA PURSUANT TO SECTION 27-60-302.

(10) "PRIORITY POPULATIONS" MEANS:

(a) PEOPLE EXPERIENCING HOMELESSNESS;

(b) PEOPLE INVOLVED WITH THE CRIMINAL JUSTICE SYSTEM;

(c) PEOPLE OF COLOR;

(d) AMERICAN INDIANS AND ALASKA NATIVES;

(e) VETERANS;

(f) PEOPLE WHO ARE LESBIAN, GAY, BISEXUAL, TRANSGENDER, OR

PAGE 5-SENATE BILL 22-181

QUEER OR QUESTIONING;

(g) OLDER ADULTS;

(h) CHILDREN AND FAMILIES; AND

(i) PEOPLE WITH DISABILITIES, INCLUDING PEOPLE WHO ARE DEAF AND HARD OF HEARING, PEOPLE WHO ARE BLIND OR DEAFBLIND, PEOPLE WITH BRAIN INJURIES, PEOPLE WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES, AND PEOPLE WITH OTHER CO-OCCURRING DISABILITIES.

(11) "SUBSTANCE USE DISORDER" MEANS A CHRONIC RELAPSING BRAIN DISEASE, CHARACTERIZED BY RECURRENT USE OF ALCOHOL, DRUGS, OR BOTH, CAUSING CLINICALLY SIGNIFICANT IMPAIRMENT, INCLUDING HEALTH PROBLEMS, DISABILITY, AND FAILURE TO MEET MAJOR RESPONSIBILITIES AT WORK, SCHOOL, OR HOME.

27-60-302. Behavioral health-care provider workforce plan - expansion - current workforce. (1) ON OR BEFORE SEPTEMBER 1, 2022, THE BEHAVIORAL HEALTH ADMINISTRATION SHALL CREATE AND BEGIN TO IMPLEMENT A BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE PLAN TO EXPAND AND STRENGTHEN COLORADO'S BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE TO SERVE CHILDREN, YOUTH, AND ADULTS. IN CREATING THE PLAN, THE BHA SHALL CONSIDER THE STAKEHOLDER RECOMMENDATIONS THAT ADDRESS THE BEHAVIORAL HEALTH WORKFORCE SHORTAGE PUBLISHED BY THE DEPARTMENT IN DECEMBER 2021.

(2) (a) THE PLAN SHALL INCLUDE:

(I) THE DEVELOPMENT AND IMPLEMENTATION OF RECRUITMENT METHODS TO INCREASE AND DIVERSIFY THE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE THROUGH IDENTIFYING THE CULTURAL BARRIERS TO ENTERING THE BEHAVIORAL HEALTH-CARE FIELD AND INCORPORATING THE APPROPRIATE STRATEGIES TO OVERCOME THOSE BARRIERS;

(II) STRATEGIES TO AID PUBLICLY FUNDED BEHAVIORAL HEALTH PROVIDERS IN RETAINING WELL-TRAINED, CLINICAL BEHAVIORAL HEALTH-CARE PROVIDERS AT ALL LEVELS; AND

(III) REGULATORY CHANGES TO REDUCE BARRIERS.

(b)   AS PART OF THE PLAN, THE BHA SHALL USE MONEY APPROPRIATED TO THE BHA TO PARTNER WITH ORGANIZATIONS SUCH AS LOCAL, STATE, AND NATIONAL ORGANIZATIONS REPRESENTING PRIORITY POPULATIONS.

(3) (a) THE PLAN SHALL REQUIRE THE BHA TO PARTNER WITH THE DEPARTMENT OF HIGHER EDUCATION TO BETTER PREPARE THE FUTURE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE FOR PUBLIC SECTOR SERVICE, TO DEVELOP PAID JOB SHADOWING AND INTERNSHIP OPPORTUNITIES, AND TO DEVELOP PARTNERSHIPS WITH ORGANIZATIONS THAT CAN OFFER SUCH OPPORTUNITIES.

(b) THE BHA AND THE DEPARTMENT OF HIGHER EDUCATION SHALL PROVIDE INCENTIVES TO INSTITUTIONS OF HIGHER EDUCATION FOR THE PURPOSE OF MARKETING AND PROMOTING BEHAVIORAL HEALTH-CARE EDUCATIONAL PROGRAMS TO STUDENTS AND INCREASING THE NUMBER OF STUDENTS WHO GRADUATE WITH A DEGREE IN A BEHAVIORAL HEALTH-CARE FIELD OF STUDY.

(4) (a) THE PLAN MUST INCLUDE STRATEGIES FOR THE BHA TO WORK WITH COMMUNITY COLLEGES AND OTHER INSTITUTIONS OF HIGHER EDUCATION TO RECRUIT AND DEVELOP THE SKILLS OF RESIDENTS OF RURAL COMMUNITIES AND RESIDENTS OF STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREAS, AS DEFINED IN SECTION 25-1.5-402 (11), WITH THE GOAL OF EDUCATING THESE RESIDENTS IN BEHAVIORAL HEALTH-CARE FIELDS TO PROVIDE SERVICES FOR CHILDREN, YOUTH, AND ADULTS SO THAT THE RESIDENTS RETURN AND PRACTICE IN THE RURAL AREAS AND OTHER SHORTAGE AREAS.

(b) THE STRATEGIES IMPLEMENTED BY THE BHA IN SUBSECTION (4)(a) OF THIS SECTION SHALL INCLUDE STUDENT LOAN REPAYMENT PROGRAMS AND SCHOLARSHIPS TO INDIVIDUALS WHO ARE COMMITTED TO PROVIDING BEHAVIORAL HEALTH-CARE SERVICES IN RURAL COMMUNITIES AND STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREAS, AS DEFINED IN SECTION 25-1.5-402 (11), FOR AT LEAST THREE YEARS. THE BHA SHALL COORDINATE AND WORK IN CONJUNCTION WITH THE COLORADO HEALTH SERVICE CORPS TO EXPAND AND INCREASE THE LOAN REPAYMENTS MADE PURSUANT TO SECTION 25-1.5-503.

(5) THE BHA, IN COLLABORATION WITH THE COMMUNITY COLLEGE

PAGE 7-SENATE BILL 22-181

SYSTEM, THE DEPARTMENT OF HIGHER EDUCATION, AND THE WORK FORCE DEVELOPMENT COUNCIL CREATED IN SECTION 24-46.3-101, AND INSTITUTIONS OF HIGHER EDUCATION SHALL CREATE A NEW BEHAVIORAL HEALTH-CARE EDUCATIONAL PROGRAM THAT PROVIDES TIERED ADVANCEMENT OPPORTUNITIES FOR BEHAVIORAL HEALTH-CARE PROVIDERS AT ALL LEVELS, FROM ADVANCEMENT FOR INDIVIDUALS IN ENTRY-LEVEL POSITIONS TO INDIVIDUALS WHO HOLD A BACHELOR'S DEGREE.

(6) THE BHA SHALL USE THE MONEY APPROPRIATED BY THE GENERAL ASSEMBLY TO INCREASE THE NUMBER OF PEER SUPPORT PROFESSIONALS ACROSS THE STATE TO ENSURE THAT A PERSON STRUGGLING WITH A MENTAL HEALTH DISORDER OR A SUBSTANCE USE DISORDER WHO IS IN NEED OF ASSISTANCE CAN CONNECT WITH A PEER SUPPORT SPECIALIST WHO HAS HAD SIMILAR EXPERIENCES LIVING WITH A MENTAL HEALTH DISORDER OR A SUBSTANCE USE DISORDER. THE PURPOSE OF THE PEER SUPPORT PROFESSIONAL IS TO HELP PEOPLE ACHIEVE THEIR RECOVERY GOALS THROUGH SHARED UNDERSTANDING, RESPECT, AND EMPOWERMENT. PEER SUPPORT PROFESSIONALS PROVIDE NONCLINICAL SUPPORT SERVICES THAT ALIGN WITH RECOMMENDATIONS FROM THE SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION OF THE UNITED STATES DEPARTMENT OF HEALTH AND HUMAN SERVICES, INCLUDING ENGAGING INDIVIDUALS IN PEER-TO-PEER RELATIONSHIPS THAT SUPPORT HEALING, PERSONAL GROWTH, LIFE SKILLS DEVELOPMENT, SELF-CARE, AND CRISIS STRATEGY DEVELOPMENT, TO HELP ACHIEVE RECOVERY, WELLNESS, AND LIFE GOALS.

(7) THE BHA SHALL INCLUDE IN THE PLAN THE RECOMMENDATIONS OF THE DIRECTOR OF THE DIVISION OF PROFESSIONS AND OCCUPATIONS PURSUANT TO SECTION 12-20-103 (8).

(8) (a) THE PLAN MUST INCLUDE PROPOSALS TO WORK WITH LOCAL LAW ENFORCEMENT AGENCIES, THE P.O.S.T. BOARD CREATED IN SECTION 24-31-302, A PEACE OFFICER ORGANIZATION, AS DEFINED IN SECTION 24-32-3501, A STATEWIDE ORGANIZATION REPRESENTING PROFESSIONAL FIREFIGHTERS, AND A STATEWIDE ASSOCIATION REPRESENTING EMERGENCY MEDICAL SERVICE PROVIDERS TO:

(I) CROSS-TRAIN CURRENT AND FORMER FIRST RESPONDERS IN BEHAVIORAL HEALTH;

(II) HELP INCREASE CULTURAL COMPETENCIES IN FIRST RESPONDERS

PAGE 8-SENATE BILL 22-181

AND LAW ENFORCEMENT; AND

(III) REDUCE THE STIGMA OF RECEIVING MENTAL HEALTH SERVICES.

(b) THE PROPOSALS IMPLEMENTED BY THE BHA PURSUANT TO SUBSECTION (8)(a) OF THIS SECTION MUST INCLUDE STUDENT LOAN REPAYMENT PROGRAMS AND SCHOLARSHIPS FOR CURRENT AND FORMER FIRST RESPONDERS WHO HAVE AT LEAST FIVE YEARS OF FIRST RESPONDER EXPERIENCE AND MENTAL HEALTH PROFESSIONALS WHO ARE COMMITTED TO PROVIDING BEHAVIORAL HEALTH SERVICES IN LOCAL COMMUNITIES TO FIRST RESPONDERS FOR AT LEAST FIVE YEARS.

(c) THE BHA MAY COORDINATE AND WORK IN CONJUNCTION WITH THE COLORADO HEALTH SERVICE CORPS, AS DEFINED IN SECTION 25-1.5-502, TO EXPAND AND INCREASE THE STUDENT LOAN REPAYMENTS MADE PURSUANT TO SECTION 25-1.5-503.

(9) THE PLAN SHALL INCLUDE STRATEGIES TO UTILIZE COLORADO-BASED BEHAVIORAL HEALTH-CARE PROVIDERS TO EXPAND TELEHEALTH CAPACITY AND INFRASTRUCTURE IN ORDER TO PRIORITIZE TIMELY ACCESS TO BEHAVIORAL HEALTH-CARE SERVICES AND ADDRESS SERVICE GAPS.

(10) THROUGH AN INTERAGENCY AGREEMENT, THE BHA SHALL CREATE A PLAN FOR COLLABORATION BETWEEN THE BHA, THE DEPARTMENT OF REGULATORY AGENCIES, THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, THE DEPARTMENT OF HEALTH CARE POLICY AND FINANCING, THE DEPARTMENT OF EDUCATION, THE DEPARTMENT OF EARLY CHILDHOOD, AND THE DEPARTMENT OF LABOR AND EMPLOYMENT TO RAISE AWARENESS AMONG HEALTH-CARE PROVIDERS AND BEHAVIORAL HEALTH-CARE PROVIDERS CONCERNING THE AVAILABILITY OF OPPORTUNITIES TO INVEST IN AND STRENGTHEN THEIR PROFESSIONAL BEHAVIORAL HEALTH-CARE STAFF.

27-60-303. Behavioral health administration - additional duties - collaboration with other agencies. (1) THE BHA SHALL:

(a) IN COLLABORATION WITH THE DEPARTMENT OF REGULATORY AGENCIES, ESTABLISH WORKFORCE STANDARDS THAT STRENGTHEN THE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE, INCLUDING TELEHEALTH

PAGE 9-SENATE BILL 22-181

(I) TRAINING TO ENSURE CROSS-SYSTEM ALIGNMENT AROUND A
PROACTIVE, COORDINATED, AND PRERELEASE CARE PLAN FOR INDIVIDUALS
WHO ARE INCARCERATED IN JAIL, PRISON, AND COMMUNITY CORRECTIONS
FACILITIES;

(II) SPECIALIZED TRAINING AND SKILLS-BUILDING IN CULTURAL
COMPETENCIES AND OTHERWISE CULTURALLY RESPONSIVE APPROACHES TO
SUPERVISION AND TREATMENT OF INDIVIDUALS WHO ARE OR WERE IN THE
CRIMINAL JUSTICE SYSTEM; AND

(III) SPECIFIC STRATEGIES TO ADDRESS THE RIGHTS AND NEEDS OF
CRIME VICTIMS AND THE BEHAVIORAL HEALTH-CARE PROVIDER'S ROLE IN
PREVENTING HARM OR INCREASING RISK TO IDENTIFIED CRIME VICTIMS.

(b) FOR THE PURPOSES OF SUBSECTION (2)(a) OF THIS SECTION, THE
BHA SHALL ADD RELEVANT CONTENT TO THE CURRICULUM DEVELOPED IN
THE LEARNING MANAGEMENT SYSTEM AND SHALL ENSURE THAT THE
LEARNING MANAGEMENT SYSTEM IS ACCESSIBLE AND PROMOTED TO ALL
CRIMINAL JUSTICE AGENCIES IN THE STATE.

(3) THE BHA SHALL DEVELOP STRATEGIES TO STRENGTHEN
COLORADO'S CURRENT BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE.
THE STRATEGIES SHALL INCLUDE:

(a) USING THE LEARNING MANAGEMENT SYSTEM TO INCREASE THE
CAPACITY OF PROVIDERS TO SUPPORT A CULTURALLY COMPETENT
BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE TO PROVIDE SERVICES
FOR CHILDREN, YOUTH, AND ADULTS. THIS INCLUDES BUILDING FROM THE
STANDARDS AND STATEWIDE CORE COMPETENCIES DEVELOPED PURSUANT
TO THE LEARNING MANAGEMENT SYSTEM AND OFFERING ONGOING
PROFESSIONAL DEVELOPMENT OPPORTUNITIES TO TRAIN BEHAVIORAL
HEALTH-CARE PROVIDERS TO TREAT COMPLEX NEEDS ACROSS THE
CONTINUUM OF CARE. IF PRACTICABLE, THE STANDARDS SHALL ALIGN WITH
NATIONAL STANDARDS AND SHALL ADDRESS HEALTH EQUITY; RURAL,
FRONTIER, AND URBAN NEEDS; PEDIATRIC CARE; SPECIALTY CARE; AND CARE
FOR PERSONS WITH COMPLEX NEEDS. THE BHA SHALL USE THE LEARNING
MANAGEMENT SYSTEM TO CREATE COURSE WORK TO INCREASE AND
IMPROVE COMPETENCIES IN BEHAVIORAL HEALTH CARE.

(b) DEVELOPING METHODS SUPPORTED BY THE BHA, THE

PAGE 12-SENATE BILL 22-181

DEPARTMENT OF REGULATORY AGENCIES, THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, THE DEPARTMENT OF HEALTH CARE POLICY AND FINANCING, AND THE DEPARTMENT OF LABOR AND EMPLOYMENT FOR BEHAVIORAL HEALTH PROVIDERS TO ADDRESS BURNOUT; TRAINING; SUPERVISION, INCLUDING THE EXPLORATION OF OPPORTUNITIES FOR BEHAVIORAL HEALTH PROVIDERS TO BE REIMBURSED FOR PROVIDING CLINICAL SUPERVISION; AND CAREER PATHWAYS FOR PROFESSIONAL BEHAVIORAL HEALTH-CARE PROVIDERS.

27-60-304. Reports. (1) IN 2023 AND 2024, THE STATE DEPARTMENT OF HUMAN SERVICES SHALL INCLUDE AN OVERVIEW OF THE BHA'S PROGRESS TOWARD ADDRESSING THE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE SHORTAGE DURING THE HEARINGS HELD PRIOR TO THE REGULAR SESSION OF THE GENERAL ASSEMBLY UNDER THE "STATE MEASUREMENT FOR ACCOUNTABLE, RESPONSIVE, AND TRANSPARENT (SMART) GOVERNMENT ACT", PART 2 OF ARTICLE 7 OF TITLE 2.

(2) ON OR BEFORE JANUARY 1, 2023, AND ON OR BEFORE JANUARY 1, 2024, THE COMMUNITY COLLEGE SYSTEM SHALL SUBMIT A REPORT TO THE BHA. AT A MINIMUM, THE REPORT MUST INCLUDE A SUMMARY OF THE BEHAVIORAL HEALTH CAREER PATHWAY AND ITS IMPLEMENTATION, INCLUDING AN ACCOUNTING OF HOW MONEY WAS USED TO EXPAND OR SUPPORT TRAINING, EDUCATION, AND CERTIFICATIONS IN THE BEHAVIORAL HEALTH CAREER PATHWAY TO INCREASE EMPLOYMENT IN THE BEHAVIORAL HEALTH SECTOR.

(3) THE STATE DEPARTMENT, THE BHA, AND ANY PERSON WHO RECEIVES MONEY FROM THE BHA SHALL COMPLY WITH THE COMPLIANCE, REPORTING, RECORD-KEEPING, AND PROGRAM EVALUATION REQUIREMENTS ESTABLISHED BY THE OFFICE OF STATE PLANNING AND BUDGETING AND THE STATE CONTROLLER IN ACCORDANCE WITH SECTION 24-75-226 (5).

27-60-305. Repeal of part. THIS PART 3 IS REPEALED, EFFECTIVE SEPTEMBER 1, 2024.

SECTION 3. In Colorado Revised Statutes, 12-20-103, **add** (8) as follows:

12-20-103. Division of professions and occupations - creation - duties of division and department head - office space - per diem for

PAGE 13-SENATE BILL 22-181

board or commission members - review of functions - repeal. (8) ON OR BEFORE SEPTEMBER 1, 2022, THE DIVISION SHALL:

(a) MAKE RECOMMENDATIONS TO EXPAND THE PORTABILITY OF EXISTING CREDENTIALING REQUIREMENTS THROUGH STATUTORY CHANGES, INCLUDING THE ADOPTION OF INTERSTATE COMPACTS IN ORDER TO FACILITATE FOR MENTAL HEALTH AND BEHAVIORAL HEALTH-CARE PROVIDERS THE USE OF TELEHEALTH TO PRACTICE IN MULTIPLE JURISDICTIONS. THE RECOMMENDATIONS SHALL INCLUDE PROPOSALS FOR INCREASING THE AVAILABILITY OF MENTAL HEALTH AND BEHAVIORAL HEALTH-CARE SERVICES IN RURAL, FRONTIER, AND OTHER UNDER-REPRESENTED AREAS OF THE STATE.

(b) PROVIDE THE RECOMMENDATIONS TO THE BEHAVIORAL HEALTH ADMINISTRATION ESTABLISHED IN SECTION 27-60-203 FOR INCLUSION IN THE BEHAVIORAL HEALTH-CARE PROVIDER WORKFORCE PLAN CREATED PURSUANT TO SECTION 27-60-302.

(c) THIS SUBSECTION (8) IS REPEALED, EFFECTIVE SEPTEMBER 1, 2024.

SECTION 4. In Colorado Revised Statutes, 25-1.5-506, **add** (4)(d) as follows:

25-1.5-506. Colorado health service corps fund - created - acceptance of grants and donations - annual appropriation from marijuana tax cash fund - repeal. (4) (d) (I) IN ADDITION TO THE APPROPRIATIONS DESCRIBED IN SUBSECTIONS (4)(a) AND (4)(c) OF THIS SECTION, FOR THE 2022-23 STATE FISCAL YEAR, THE GENERAL ASSEMBLY SHALL APPROPRIATE TWENTY MILLION DOLLARS FROM THE BEHAVIORAL AND MENTAL HEALTH CASH FUND CREATED IN SECTION 24-75-230 (2)(a) TO THE PRIMARY CARE OFFICE FOR THE PURPOSES DESCRIBED IN SUBSECTION (4)(a) OF THIS SECTION. IF ANY UNEXPENDED OR UNENCUMBERED MONEY APPROPRIATED FOR A FISCAL YEAR REMAINS AT THE END OF THAT FISCAL YEAR, THE PRIMARY CARE OFFICE MAY EXPEND THE MONEY FOR THE SAME PURPOSES IN THE NEXT FISCAL YEAR WITHOUT FURTHER APPROPRIATION.

(II) THE DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, PRIMARY CARE OFFICE, AND ANY PERSON WHO RECEIVES MONEY FROM THE PRIMARY CARE OFFICE, INCLUDING EACH RECIPIENT OF LOAN REPAYMENTS

PAGE 14-SENATE BILL 22-181

OR A SCHOLARSHIP, SHALL COMPLY WITH THE COMPLIANCE, REPORTING, RECORD-KEEPING, AND PROGRAM EVALUATION REQUIREMENTS ESTABLISHED BY THE OFFICE OF STATE PLANNING AND BUDGETING AND THE STATE CONTROLLER IN ACCORDANCE WITH SECTION 24-75-226 (5).

(III) THIS SUBSECTION (4)(d) IS REPEALED, EFFECTIVE JANUARY 1, 2025.

SECTION 5. In Colorado Revised Statutes, 27-60-112, **amend** (2)(b) as follows:

27-60-112. Behavioral health-care workforce development program - creation - rules - report. (2) To implement the program, the office shall:

(b) (I) Develop an online training curriculum for providers in rural and metro areas to increase competencies in mental health and substance use disorders that will support a high-quality, trained, culturally responsive, and diverse behavioral health-care workforce.

(II) THE OFFICE SHALL ALSO:

(A) DEVELOP A PROCESS TO TRACK, STORE, AND CREATE REPORTS CONCERNING THE TRAINING AND CONTINUING EDUCATION IN THE CURRICULUM DEVELOPED PURSUANT TO SUBSECTION (2)(b)(I) OF THIS SECTION AND TO TRACK PROVIDERS' COMPLETION OF IN-PERSON AND VIRTUAL TRAINING OFFERED PURSUANT TO THIS SUBSECTION (2)(b); AND

(B) COLLABORATE WITH CREDENTIALING ENTITIES TO TRACK PEER SUPPORT PROFESSIONALS IN THE STATE.

SECTION 6. Appropriation. (1) For the 2022-23 state fiscal year, $36,806,984 is appropriated to the department of human services for use by the behavioral health administration. This appropriation is from the behavioral and mental health cash fund created in section 24-75-230 (2)(a), C.R.S., and is of money the state received from the federal coronavirus state fiscal recovery fund. Any money appropriated in this section not expended prior to July 1, 2023, is further appropriated to the department from July 1, 2023, through December 30, 2024, for the same purpose. To implement this act, the administration may use this appropriation as follows:

PAGE 15-SENATE BILL 22-181

(a) $573,306 for program administration, which amount is based on an assumption that the administration will require 3.0 FTE in the 2022-23 state fiscal year and 3.0 FTE in the 2023-24 state fiscal year;

(b) $9,928,337 for the development and implementation of the behavioral health-care provider workforce plan as specified in section 27-60-302 (2), C.R.S.;

(c) $2,928,337 for strategies to strengthen the behavioral health-care provider workforce as specified in section 27-60-303 (3), C.R.S.;

(d) $4,735,319 for the behavioral health-care educational program as specified in section 27-60-302 (5), C.R.S.;

(e) $5,928,337 to increase the number of peer support professionals across the state as specified in section 27-60-302 (6), C.R.S.;

(f) $4,928,337 for workforce standards and licensing activities as specified in section 27-60-303 (1), C.R.S.;

(g) $2,928,337 for the behavioral health-care workforce development program as specified in section 27-60-112 (2), C.R.S.;

(h) $2,928,337 for the partnership with the department of higher education as specified in section 27-60-302 (3), C.R.S.; and

(i) $1,928,337 for the implementation of a comprehensive, collaborative, and cross-system training certification and training curriculum for behavioral health-care providers working in programs to obtain a criminal justice treatment provider endorsement as specified in section 27-60-303 (2), C.R.S.

SECTION 7. Appropriation. For the 2022-23 state fiscal year, $20,000,000 is appropriated to the department of public health and environment for use by the primary care office. This appropriation is from the behavioral and mental health cash fund created in section 24-75-230 (2)(a), C.R.S., and is of money the state received from the federal coronavirus state fiscal recovery fund. Any money appropriated in this section not expended prior to July 1, 2023, is further appropriated to the department from July 1, 2023, through December 30, 2024, for the same

PAGE 16-SENATE BILL 22-181

purpose. To implement this act, the office may use this appropriation for the purposes specified in section 25-1.5-506 (4)(a), C.R.S. This appropriation is based on the assumption that the office will require an additional 1.0 FTE in the 2022-23 state fiscal year and 1.0 FTE in the 2023-24 state fiscal year to implement this act.

SECTION 8. Appropriation. (1) For the 2022-23 state fiscal year, $15,193,018 is appropriated to the department of higher education. This appropriation is from the behavioral and mental health cash fund created in section 24-75-230 (2)(a), C.R.S., and is of money the state received from the federal coronavirus state fiscal recovery fund. Any money appropriated in this section not expended prior to July 1, 2023, is further appropriated to the department from July 1, 2023, through December 30, 2024, for the same purpose. To implement this act, the department may use this appropriation as follows:

(a) $193,018 for administration, which amount is based on an assumption that the department will require 1.0 FTE in the 2022-23 state fiscal year and 1.0 FTE in the 2023-24 state fiscal year;

(b) $15,000,000 for the state board for community colleges and occupational education state system community colleges.

SECTION 9. Effective date. This act takes effect July 1, 2022.

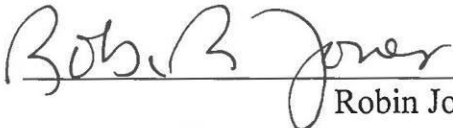**SECTION 10. Safety clause.** The general assembly hereby finds,

PAGE 17-SENATE BILL 22-181

determines, and declares that this act is necessary for the immediate preservation of the public peace, health, or safety.

Steve Fenberg
PRESIDENT OF
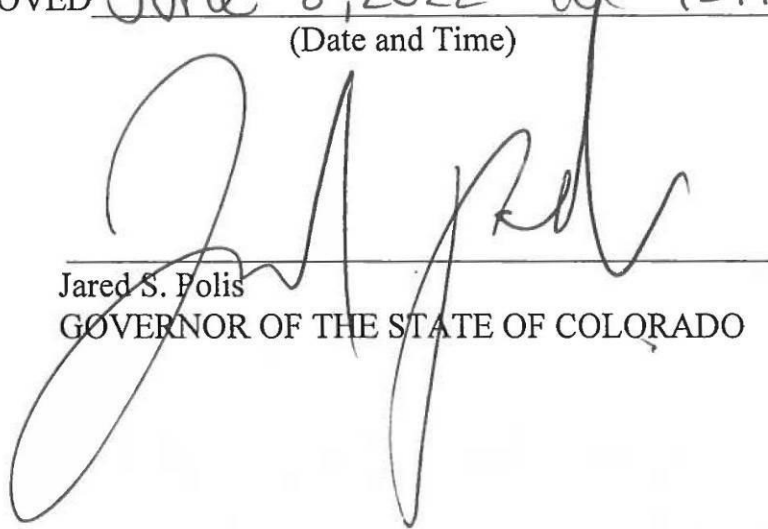THE SENATE

Alec Garnett
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Cindi L. Markwell
SECRETARY OF
THE SENATE

Robin Jones
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

APPROVED June 8, 2022 at 12:19 pm
(Date and Time)

Jared S. Polis
GOVERNOR OF THE STATE OF COLORADO

PAGE 18-SENATE BILL 22-181

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Prevention Services Division

STATE-DESIGNATED HEALTH PROFESSIONAL SHORTAGE AREA DESIGNATION

6 CCR 1015-6

Adopted by the Board of Health on May 19, 2021; effective July 15, 2021.

1.1   Purpose

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

The methodology for substance use disorder designation is based upon:

1)   The estimated demand for substance use disorder service encounters within a population defined by a discrete geographic area;
2)   The estimated supply of substance use disorder 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 substance use disorder health professional shortage areas where the resultant supply falls short of estimated demand for minimally adequate substance use disorder treatment.

The methodology for primary care designation is based upon:

1)   The estimated demand for primary care service encounters within a population defined by a discrete geographic area;
2)   The estimated supply of primary 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 primary care health professional shortage areas where the resultant supply falls short of estimated demand for primary care services.

1.2   Authority

This regulation is adopted pursuant to the authority in Section 25-1.5-404(1)(a), Colorado Revised Statutes.

1.3   Definitions

1)   "Behavioral Health Care Provider," pursuant to Section 25-1.5-502(1.3), C.R.S., means the following providers who provide behavioral health care services within their scope of practice:

    a)   a licensed addiction counselor (LAC),

    b)   a certified addiction counselor (CAC),

    c)   a licensed professional counselor (LPC),

    d)   a licensed clinical social worker (LCSW),

    e)   a licensed marriage and family therapist (LMFT),

    f)   a licensed psychologist (Ph.D. or Psy.D.),

    g)   a licensed physician assistant (PA) with specific training in substance use disorder,

    h)   an advanced practice nurse (APN) with specific training in substance use disorder, pain management, or psychiatric nursing, or

    i)   a physician with specific board certification or training in addiction medicine, pain management, or psychiatry.

2)   "Behavioral Health Care Services," pursuant to Section 25-1.5-502(1.5), C.R.S., means services for the prevention, diagnosis, and treatment of, and the recovery from, mental health and substance use disorders.

3)   "Capacity" means the typical volume of health service encounters a health care professional can produce within the scope of his or her practice and scheduled clinical hours.

4)   "Catchment Area" means a discrete geographic area where a preponderance of the civilian noninstitutionalized population within the service area could reasonably expect to access behavioral health services within the service area without excessive travel, when it is adequately resourced.

5)   "Census Block Group" means a statistical division of a census tract defined by the U.S. Census Bureau.

6)   "Civilian Noninstitutionalized Population" are all people who live and sleep most of the time within the boundaries of a geographic area but are not housed in a group quarter such as a correctional institution, juvenile facility, military installation, or dormitory.

7)   "Colorado Health Systems Directory" means the clinician data system administered by the Colorado Department of Public Health and Environment's Primary Care Office (section 25-1.5- 403, C.R.S.) which provides a comprehensive database of all licensed clinicians and health care sites in Colorado.

8)   "Encounter" means an instance of direct provider to patient interaction with the primary purpose of diagnosing, evaluating or treating a patient's substance use disorder.

9)   "Minimally Adequate Treatment" means the minimum necessary health care service visits for diagnosis, treatment or recovery needed to address a specific or general medical or behavioral health care service need.

10)   "Prevalence" means the proportion of a population who has substance use disorder at some point within the previous year.

11)   "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

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

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

13)   "Polygon" means a closed, irregular geometric shape on a map surface that defines equivalent road travel distances from a central point within the shape.

14)   "Population Centroid" means the geometric center of a group of population points within a geographic shape (e.g., census block group).

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

16)   "State Designated Substance Use Disorder Health Professional Shortage Area" means a State-Designated Health Professional Shortage Area experiencing a shortage of behavioral health care providers providing behavioral health care services for substance use disorder.

17)   "Substance Use Disorder" means mild, moderate, or severe recurrent use of drugs and/or alcohol that causes clinically and functionally significant impairment of individuals. Impairment may include health concerns, disability, risky behavior, social impairment, and failure to perform significant responsibilities at work, school, or with family. The diagnosis may be applied to the abuse of one or more of ten separate classes of drugs including alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, stimulants, tobacco, and other substances. The

dependent use of tobacco and caffeine are not a primary focus of this rule.

1.4   Substance Use Disorder Health Professional Shortage Area Determination Method

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

2)   The population of each catchment area is the civilian noninstitutionalized population according to the most recent available data from U.S. Census Bureau at the time of analysis.

3)   The estimated burden of substance use disorder within each catchment area is determined by multiplying the civilian noninstitutionalized population in the catchment area (section 1.4(2)) by substance use disorder prevalence according to age and sex. Substance use disorder prevalence is determined using the most recent available data from the National Survey on Drug Use and Health administered by the U.S. Department of Health and Human Services, Substance Use and Mental Health Services Administration.

4)   The estimated behavioral health services demand for substance use disorder in each catchment area is determined by multiplying the estimated burden of substance use disorder (section 1.4(3)) by the number of minimally adequate treatments as reported in the National Comorbidity Survey
– Replication administered by the U.S. Department of Health and Human Services, Substance Use and Mental Health Services Administration.

5)   The estimated substance use disorder services supply in each catchment area is determined by evaluating a list of behavioral health care providers with a practice address within the catchment area and the behavioral health care providers' encounter productivity. The list of behavioral health care providers is derived from the most recent available data reported in the Colorado Health Systems Directory administered by the Colorado Department of Public Health and Environment's Primary Care Office. Each behavioral health care provider is assigned a behavioral health service 12 month productivity rate. The sum of encounter productivity for all practicing behavioral health care providers in the catchment area is the total estimated substance use disorder services supply in the catchment area.

6)   Designation of a census block group as a State Designated Substance Use Disorder Health Professional Shortage Area occurs when the supply of behavioral health service encounters falls below the per capita demand for minimally adequate treatment for those who experience substance use disorder within the catchment area.

7)   Current designation status of each region of the state will be posted at least annually on or about July 1 on a publicly accessible website.

1.5   Primary Care Health Professional Shortage Area Determination Method

1)   Catchment areas are created for analysis of primary care provider capacity by

determining standard road travel distances from the population centroid of each census block group in Colorado using a variable two-step floating catchment area method.

2)   The population of each catchment area is the civilian noninstitutionalized population according to the most recent available data from U.S. Census Bureau at the time of analysis.

3)   The estimated demand for primary care services within each catchment area is determined by multiplying the civilian noninstitutionalized population in the catchment area (section 1.5(2)) adjusted for rates of demand for primary care services according to age and sex. Rates of demand for primary care services are determined using the most recent available data from the Medical Expenditure Panel Survey administered by the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality.

4)   The estimated primary care services supply in each catchment area is determined by surveying primary care providers with a practice address within the catchment area. The list of primary care providers is derived from the most recent available data reported in the Colorado Health Systems Directory administered by the Colorado Department of Public Health and Environment's Primary Care Office. Each primary care provider is assigned a primary care service 12 month productivity rate. The sum of encounter productivity for all practicing primary care providers in the catchment area is the total estimated primary care services supply in the catchment area.

5)   Designation of a census block group as a State Designated Primary Care Health Professional Shortage Area occurs when the supply of primary health service encounters falls below the per capita demand for primary care demand within the catchment area.

6)   Current designation status of each region of the state will be posted at least annually on or about July 1 on a publicly accessible website.

1.6   Data Sources

1)   If current data from the sources cited above are unavailable, the department may rely upon comparable data sources.

2)   To the extent available, reliable and practicable, the department will rely upon data collected within one year prior to analysis.

3)   Health care providers practice characteristics data may be derived from direct survey methods, claims analysis, peer reviewed and validated workforce research tools, and statistical methods.

1.7   Review

Shortage designation status will be reviewed in 2022 and at least every three years thereafter. More frequent review may be performed where data is available and analytical resources are available. Designation status of each area will remain effective for 36 months from the date of publication or when replaced by a more recent analysis.